LMS/RFS/S05993

Annual Report of Site Surveillance and Maintenance Activities at the Rocky Flats, Colorado, Site Calendar Year 2009

April 2010

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Contents

Abbreviations xv
Executive Summary xix
1.0 Introduction 1–1
1.1 Purpose and Scope 1–2
1.2 Background 1–3
1.3 RFLMA Contact Records 1–3
1.4 RFLMA Modification Requests 1–4
2.0 Site Operations and Maintenance 2–1
2.1 Annual Site Inspection 2–1
2.2 Colorado WQCC Proceedings Related to Rocky Flats 2–1
2.2.1 Uranium, Gross Alpha, and Gross Beta Standards 2–2
2.2.2 Regulation 38 Triennial Review 2–3
2.3 Pond Operations 2–7
2.4 Landfills 2–10
2.4.1 Present Landfill 2–10
2.4.1.1 Inspection Results 2–11
2.4.1.2 Slumps 2–11
2.4.1.3 Settlement Monuments 2–11
2.4.2 Original Landfill 2–12
2.4.2.1 Inspection Results 2–12
2.4.2.2 Settlement Monuments 2–12
2.4.2.3 Geotechnical Investigation and Repairs 2–12
2.5 Groundwater Plume Treatment Systems Maintenance 2–18
2.5.1 Mound Site Plume Treatment System 2–18
2.5.2 East Trenches Plume Treatment System 2–18
2.5.2.1 Operations Associated with Media Replacement and Plumbing Upgrades 2–19
2.5.3 Solar Ponds Plume Treatment System 2–19
2.5.3.1 Phase I Operation 2–20
2.5.3.2 Phase II/III Operation and Optimization 2–21
2.6 Erosion Control and Revegetation 2–22
2.6.1 Erosion Control 2–22
2.7 General Site Maintenance and Operations 2–23
2.7.1 Road Upgrades 2–23
2.7.1.1 Emergency Repairs 2–23
2.7.1.2 Annual Road Upgrades 2–23
2.7.2 Snow Fence 2–23
2.7.3 Site Security 2–24
3.0 Environmental Monitoring 3–1
3.1 Water Monitoring 3–1
3.1.1 Introduction 3–1
3.1.1.1 Water Monitoring Highlights: CY 2009 3–1
3.1.1.2 Use of Analytical Data 3–2
3.1.2 Routine Monitoring 3–7
3.1.2.1 POC Monitoring 3–7
3.1.2.2 POE Monitoring 3–20

3.1.2.3 AOC Wells and SW018 3–41
3.1.2.4 Boundary Wells 3–43
3.1.2.5 Sentinel Wells 3–44
3.1.2.6 Evaluation Wells 3–47
3.1.2.7 Investigative Monitoring 3–50
3.1.2.8 PLF Monitoring 3–52
3.1.2.9 OLF Monitoring 3–57
3.1.2.10 Groundwater Treatment System Monitoring 3–64
3.1.2.11 Pre-Discharge Monitoring 3–70
3.1.3 Rocky Flats Hydrology 3–72
3.1.3.1 General Hydrologic Setting 3–72
3.1.3.2 Surface-Water Hydrologic Data Presentation 3–77
3.1.3.3 Surface-Water Discharge Data Summaries 3–79
3.1.3.4 Precipitation Data 3–130
3.1.3.5 Groundwater Flow 3–134
3.1.4 Surface-Water Data Interpretation and Evaluation 3–147
3.1.4.1 Surface-Water-Quality Summaries 3–147
3.1.4.2 Surface-Water Loading Analysis 3–164
3.1.5 Groundwater Data Interpretation and Evaluation 3–225
3.1.5.1 RFLMA Groundwater Monitoring Activities of 2009 3–225
3.1.5.2 Non-RFLMA Groundwater Monitoring Activities of 2009 3–229
3.1.5.3 Groundwater at the Rocky Flats Site: Discussion and Interpretations 3–231
3.2 Ecological Monitoring 3–297
3.2.1 Introduction 3–297
3.2.2 Vegetation Monitoring 3–297
3.2.2.1 Site Flora 3–298
3.2.2.2 Weed Mapping and Weed Control 3–298
3.2.2.3 Revegetation Activities in 2009 3–300
3.2.2.4 Revegetation Monitoring 3–300
3.2.2.5 PLF and OLF Monitoring 3–317
3.2.2.6 Photomonitoring Results 3–319
3.2.3 Wildlife Monitoring 3–319
3.2.3.1 Prairie Dog Surveys 3–319
3.2.3.2 Mountain Bluebird Nest Box Monitoring 3–320
3.2.3.3 Additional Wildlife Observations 3–324
3.2.4 Summary 3–324
3.3 Data Management 3–324
3.3.1 Water Data 3–324
3.3.2 Ecology Data 3–325
3.4 Validation and Data Quality Assessment 3–326
3.4.1 General Discussion 3–326
3.4.2 PARCC Parameters 3–327
3.4.2.1 Criteria for Precision 3–328
3.4.2.2 Criteria for Accuracy 3–328
3.4.2.3 Criteria for Representativeness 3–329
3.4.2.4 Criteria for Completeness 3–329
3.4.2.5 Criteria for Comparability 3–330

3.4.3 Water DQA Results for CY 2009 3–330
3.4.3.1 Precision During CY 2009 3–331
3.4.3.2 Accuracy During CY 2009 3–332
3.4.3.3 Representativeness During CY 2009 3–333
3.4.3.4 Completeness During CY 2009 3–333
3.4.3.5 Comparability During CY 2009 3–335
4.0 References 4–1

Figures

Figure 2–1. Big Dry Creek Segments 4a, 4b, and 5 2–5
Figure 2–2. Completed Notch at Dam B-2 2–8
Figure 2–3. Completed Stoplog Structure at Dam A-2 2–9
Figure 2–4. Original Landfill Observed Surface Cracking Location and Inclinometer Locations 2–15
Figure 2–5. Hydrograph for SPPTS for CY 2009 2–20
Figure 3–1. Rocky Flats Site Water Monitoring Locations and Precipitation Gages: Fourth Quarter CY 2009 3–3
Figure 3–2. POC Monitoring Locations 3–7
Figure 3–3. Volume-Weighted 30-Day Average Pu and Am Activities at GS01: Calendar Year Ending Fourth Quarter CY 2009 3–9
Figure 3–4. Volume-Weighted 30-Day Average Total U Concentrations at GS01: Calendar Year Ending Fourth Quarter CY 2009 3–10
Figure 3–5. Volume-Weighted 30-Day Average Pu and Am Activities at GS03: Calendar Year Ending Fourth Quarter CY 2009 3–11
Figure 3–6. Volume-Weighted 30-Day Average Total U Concentrations at GS03: Calendar Year Ending Fourth Quarter CY 2009 3–12
Figure 3–7. Volume-Weighted 30-Day Average Nitrate+Nitrite as N Concentrations at GS03: Calendar Year Ending Fourth Quarter CY 2009 3–12
Figure 3–8. Volume-Weighted 12-Month Rolling Average Pu and Am Activities at GS08: Calendar Year Ending Fourth Quarter CY 2009 3–14
Figure 3–9. Volume-Weighted 12-Month Rolling Average Total U Concentrations at GS08: Calendar Year Ending Fourth Quarter CY 2009 3–14
Figure 3–10. Volume-Weighted 12-Month Rolling Average Nitrate+Nitrite as N Concentrations at GS08: Calendar Year Ending Fourth Quarter CY 2009 3–15
Figure 3–11. Volume-Weighted 12-Month Rolling Average Pu and Am Activities at GS11: Calendar Year Ending Fourth Quarter CY 2009 3–16
Figure 3–12. Volume-Weighted 12-Month Rolling Average Total U Concentrations at GS11: Calendar Year Ending Fourth Quarter CY 2009 3–17
Figure 3–13. Volume-Weighted 12-Month Rolling Average Nitrate+Nitrite as N Concentrations at GS11: Calendar Year Ending Fourth Quarter CY 2009 3–17
Figure 3–14. Volume-Weighted 12-Month Rolling Average Pu and Am Activities at GS31: Calendar Year Ending Fourth Quarter CY 2009 3–19

Figure 3–15. Volume-Weighted 12-Month Rolling Average Total U Concentrations at GS31: Calendar Year Ending Fourth Quarter CY 2009 3–19
Figure 3–16. POE Monitoring Locations 3–21
Figure 3–17. Volume-Weighted Average Pu and Am Compliance Values at GS10: Calendar Year Ending Fourth Quarter CY 2009 3–23
Figure 3–18. Volume-Weighted Average Total U Compliance Values at GS10: Calendar Year Ending Fourth Quarter CY 2009 3–23
Figure 3–19. Volume-Weighted Average Metals Compliance Values at GS10: Calendar Year Ending Fourth Quarter CY 2009 3–25
Figure 3–20. POE Monitoring Station GS10: Compliance Values and Individual Sample Results for Total U (January 1, 2009−January 11, 2009) 3–28
Figure 3–21. POE Monitoring Station GS10: Hydrograph and Individual Sample Results for Total U (January 1, 1997–January 11, 2010) 3–29
Figure 3–22. Average Annual Total U Concentrations at GS10: 1997−2009 3–32
Figure 3–23. Annual Total U Loads at GS10: 1997−2009 3–32
Figure 3–24. Variation of Total U Concentration with Flow Rate at GS10: 1997−2009 3–33
Figure 3–25. POE Monitoring Station GS10: Hydrograph and Individual Sample Results for Hardness (January 1, 1997−January 11, 2010) 3–34
Figure 3–26. Volume-Weighted 12-Month Rolling Average Pu and Am Activities at SW027: Calendar Year Ending Fourth Quarter CY 2009 3–36
Figure 3–27. Volume-Weighted 12-Month Rolling Average Total U Activities at SW027: Calendar Year Ending Fourth Quarter CY 2009 3–36
Figure 3–28. Volume-Weighted Average Metals Compliance Values at SW027: Calendar Year Ending Fourth Quarter CY 2009 3–38
Figure 3–29. Volume-Weighted Average Pu and Am Compliance Values at SW093: Calendar Year Ending Fourth Quarter CY 2009 3–39
Figure 3–30. Volume-Weighted Average Total U Compliance Values at SW093: Calendar Year Ending Fourth Quarter CY 2009 3–40
Figure 3–31. Volume-Weighted Average Metals Compliance Values at SW093: Calendar Year Ending Fourth Quarter CY 2009 3–41
Figure 3–32. AOC Well and SW018 Locations 3–43
Figure 3–33. Boundary Well Locations 3–44
Figure 3–34. Sentinel Well Locations 3–47
Figure 3–35. Evaluation Well Locations 3–50
Figure 3–36. Investigative Monitoring Locations 3–51
Figure 3–37. PLF Monitoring Locations 3–53
Figure 3–38. B, Se, U, and Zn in Downgradient Groundwater from PLF RCRA Wells Identified in 2009 ANOVA Data Evaluations 3–56
Figure 3–39. OLF Monitoring Locations 3–58
Figure 3–40. B and U in Downgradient Groundwater from OLF RCRA Wells Identified in 2009 ANOVA Data Evaluations 3–62
Figure 3–41. RFLMA MSPTS Monitoring Locations 3–65
Figure 3–42. RFLMA ETPTS Monitoring Locations 3–66
Figure 3–43. RFLMA SPPTS Monitoring Locations 3–67
Figure 3–44. PLFTS Monitoring Locations 3–69
Figure 3–45. Post-Closure Vinyl Chloride Sample Results at PLFTS Locations 3–70
Figure 3–46. Pre-Discharge Sampling Locations 3–71

Figure 3–47. Major Site Drainage Areas—Walnut Creek, Woman Creek, and Rock Creek: End of CY 2009 3–73
Figure 3–48. Rocky Flats Site Water Routing Schematic: End of CY 2009 3–74
Figure 3–49. Annual Discharge Summary from Major Site Drainages: CY 1997−2009 3–80
Figure 3–50. Relative Total Discharge Summary from Major Site Drainages: Pre- and Post-Closure Periods 3–80
Figure 3–51. Map Showing Relative CY 1997−2009 Discharge Volumes for POEs and POCs: Pre- and Post-Closure Periods 3–81
Figure 3–52. Pond Inflows: CY 1997−2009 3–82
Figure 3–53. Pond Outflows: CY 1997−2009 3–82
Figure 3–54. Relative Total Inflow Volumes for Site Ponds: Pre- and Post-Closure Periods 3–83
Figure 3–55. Relative Total Outflow Volumes for Site Ponds: Pre- and Post-Closure Periods 3–84
Figure 3–56. GS01 Drainage Area 3–85
Figure 3–57. CY 2009 Mean Daily Hydrograph at GS01: Woman Creek at Indiana Street 3–86
Figure 3–58. CY 1997−2009 Mean Daily Hydrograph at GS01: Woman Creek at Indiana Street 3–87
Figure 3–59. GS03 Drainage Area 3–88
Figure 3–60. CY 2009 Mean Daily Hydrograph at GS03: Walnut Creek at Indiana Street 3–89
Figure 3–61. CY 1997−2009 Mean Daily Hydrograph at GS03: Walnut Creek at Indiana Street 3–90
Figure 3–62. GS05 Drainage Area 3–91
Figure 3–63. CY 2009 Mean Daily Hydrograph at GS05: North Woman Creek at West Fenceline 3–92
Figure 3–64. CY 1997−2009 Mean Daily Hydrograph at GS05: North Woman Creek at West Fenceline 3–93
Figure 3–65. GS08 Drainage Area 3–94
Figure 3–66. CY 2009 Mean Daily Hydrograph at GS08: South Walnut Creek at Pond B-5 Outlet 3–95
Figure 3–67. CY 1997−2009 Mean Daily Hydrograph at GS08: South Walnut Creek at Pond B-5 Outlet 3–96
Figure 3–68. GS10 Drainage Area 3–97
Figure 3–69. CY 2009 Mean Daily Hydrograph at GS10: South Walnut Creek at Pond B-1 3–98
Figure 3–70. CY 1997–2009 Mean Daily Hydrograph at GS10: South Walnut Creek at Pond B-1 3–99
Figure 3–71. GS11 Drainage Area 3–100
Figure 3–72. CY 2009 Mean Daily Hydrograph at GS11: North Walnut Creek at Pond A-4 Outlet 3–101
Figure 3–73. CY 1997−2009 Mean Daily Hydrograph at GS11: North Walnut Creek at Pond A-4 Outlet 3–102
Figure 3–74. GS12 Drainage Area 3–103
Figure 3–75. CY 2009 Mean Daily Hydrograph at GS12: North Walnut Creek at Pond A-3 Outlet 3–104

Figure 3–76. CY 1997−2009 Mean Daily Hydrograph at GS12: North Walnut Creek at Pond A-3 Outlet 3–105
Figure 3–77. GS13 Drainage Area 3–106
Figure 3–78. CY 2009 Mean Daily Hydrograph at GS13: North Walnut Creek at Pond A-1 Bypass 3–107
Figure 3–79. CY 2005−2009 Mean Daily Hydrograph at GS13: North Walnut Creek at Pond A-1 Bypass 3–108
Figure 3–80. GS31 Drainage Area 3–109
Figure 3–81. CY 2009 Mean Daily Hydrograph at GS31: Woman Creek at Pond C-2 Outlet 3–110
Figure 3–82. CY 1997−2009 Mean Daily Hydrograph at GS31: Woman Creek at Pond C-2 Outlet 3–111
Figure 3–83. GS33 Drainage Area 3–112
Figure 3–84. CY 2009 Mean Daily Hydrograph at GS33: No Name Gulch at Walnut Creek 3–113
Figure 3–85. CY 1997−2009 Mean Daily Hydrograph at GS33: No Name Gulch at Walnut Creek 3–114
Figure 3–86. GS51 Drainage Area 3–115
Figure 3–87. CY 2009 Mean Daily Hydrograph at GS51: Ditch South of 903 Pad 3–116
Figure 3–88. CY 2001−2009 Mean Daily Hydrograph at GS51: Ditch South of 903 Pad 3–117
Figure 3–89. GS59 Drainage Area 3–118
Figure 3–90. CY 2009 Mean Daily Hydrograph at GS59: Woman Creek Upstream of Antelope Springs Confluence 3–119
Figure 3–91. CY 2002−2009 Mean Daily Hydrograph at GS59: Woman Creek Upstream of Antelope Springs Confluence 3–120
Figure 3–92. SW018 Drainage Area 3–121
Figure 3–93. CY 2009 Mean Daily Hydrograph at SW018: FC-2 at FC-2 Wetland 3–122
Figure 3–94. CY 2003−2009 Mean Daily Hydrograph at SW018: FC-2 at FC-2 Wetland 3–123
Figure 3–95. SW027 Drainage Area 3–124
Figure 3–96. CY 2009 Mean Daily Hydrograph at SW027: SID at Pond C-2 3–125
Figure 3–97. CY 1997−2009 Mean Daily Hydrograph at SW027: SID at Pond C-2 3–126
Figure 3–98. SW093 Drainage Area 3–127
Figure 3–99. CY 2009 Mean Daily Hydrograph at SW093: North Walnut Creek Upstream of Pond A-1 Bypass 3–128
Figure 3–100. CY 1997−2009 Mean Daily Hydrograph at SW093: North Walnut Creek Upstream of Pond A-1 Bypass 3–129
Figure 3–101. Site Precipitation Gages: CY 2009 3–130
Figure 3–102. Annual Total Precipitation for CY 1997–2009 3–131
Figure 3–103. Average Monthly Precipitation for CY 1997–2009 3–131
Figure 3–104. Relative Monthly Precipitation Totals for CY 1997–2009 3–132
Figure 3–105. Monthly Precipitation for CY 2009 3–132
Figure 3–106. Relative Monthly Precipitation Volumes for CY 2009 3–133
Figure 3–107. Daily Precipitation Totals for CY 2009 3–133
Figure 3–108. UHSU Potentiometric Contours: Second Quarter CY 2009 3–137
Figure 3–109. UHSU Potentiometric Contours: Fourth Quarter CY 2009 3–138
Figure 3–110. Median Pu-239,240 Activities for CY 1997–October 13, 2005 3–150

Figure 3–111. Post-Closure Median Pu-239,240 Activities....3–151
Figure 3–112. Median Am-241 Activities for CY 1997–October 13, 2005 3–153
Figure 3–113. Post-Closure Median Am-241 Activities....3–154
Figure 3–114. Median Total U Activities for CY 1997–October 13, 2005 3–156
Figure 3–115. Post-Closure Median Total U Activities....3–157
Figure 3–116. Post-Closure Median Nitrate+Nitrite as Nitrogen Concentrations....3–159
Figure 3–117. Average Pu/Am Ratios for CY 1997–October 13, 2005 3–161
Figure 3–118. Post-Closure Average Pu/Am Ratios....3–162
Figure 3–119. Relative Average Annual Pu Loading Schematic: CY 1997−2005....3–166
Figure 3–120. Relative Average Annual Pu Loading Schematic: CY 2006−2009....3–167
Figure 3–121. Relative Average Annual Am Loading Schematic: CY 1997−2005....3–168
Figure 3–122. Relative Average Annual Am Loading Schematic: CY 2006−2009....3–169
Figure 3–123. Relative Average Annual Total U Loading Schematic: CY 2003−2005....3–170
Figure 3–124. Relative Average Annual Total U Loading Schematic: CY 2006−2009....3–171
Figure 3–125. Combined Annual Pu and Am Loads from Walnut and Woman Creeks: CY 1997–2009....3–173
Figure 3–126. Annual Pu Loads from Walnut and Woman Creeks: CY 1997–2009....3–174
Figure 3–127. Relative Average Annual Pu Load Totals from Walnut and Woman Creeks....3–174
Figure 3–128. Annual Am Loads from Walnut and Woman Creeks: CY 1997–2009....3–175
Figure 3–129. Relative Average Annual Am Load Totals from Walnut and Woman Creeks....3–175
Figure 3–130. Annual Total U Loads from Walnut and Woman Creeks: CY 2003–2009....3–176
Figure 3–131. Relative Average Annual Total U Load Totals from Walnut and Woman Creeks....3–177
Figure 3–132. Annual Pu and Am Loads at GS03: CY 1997–2009....3–179
Figure 3–133. Annual Pu Loads at GS03, GS08, and GS11: CY 1997–2009....3–180
Figure 3–134. Relative Average Annual Pu Load Totals at GS03, GS08, and GS11....3–181
Figure 3–135. Annual Am Loads at GS03, GS08, and GS11: CY 1997–2009....3–182
Figure 3–136. Relative Average Annual Am Load Totals at GS03, GS08, and GS11....3–183
Figure 3–137. Annual Total U Loads at GS03, GS08, and GS11: CY 2003−2009....3–184
Figure 3–138. Relative Average Annual Total U Load Totals at GS03, GS08, and GS11....3–185
Figure 3–139. Annual Pu and Am Loads at GS01: CY 1997–2009....3–188
Figure 3–140. Annual Pu Loads at GS01 and GS31: CY 1997–2009....3–188
Figure 3–141. Relative Average Annual Pu Load Totals at GS01 and GS31....3–189
Figure 3–142. Annual Am Loads at GS01 and GS31: CY 1997–2009....3–190
Figure 3–143. Relative Average Annual Am Load Totals at GS01 and GS31....3–191
Figure 3–144. Annual Total U Loads at GS01 and GS31: CY 2003−2009....3–192
Figure 3–145. Relative Average Annual Total U Load Totals at GS01 and GS31....3–193
Figure 3–146. Annual Pu Loads from Terminal Ponds A-4, B-5, and C-2: CY 1997–2009....3–195
Figure 3–147. Relative Average Annual Pu Load Totals from Terminal Ponds A-4, B-5, and C-2....3–195
Figure 3–148. Annual Am Loads from Terminal Ponds A-4, B-5, and C-2: CY 1997–2009....3–196

Figure 3–149. Relative Average Annual Am Load Totals from Terminal Ponds A-4, B-5, and C-2 3–196
Figure 3–150. Annual Total U Loads from Terminal Ponds A-4, B-5, and C-2: CY 1997–2009 3–197
Figure 3–151. Relative Average Annual Total U Load Totals from Terminal Ponds A-4, B-5, and C-2 3–198
Figure 3–152. Annual Pu Loads for the A- and B-Series Ponds: CY 1997–2009 3–200
Figure 3–153. Relative Average Annual Pu Load Totals for the A- and B-Series Ponds 3–201
Figure 3–154. Annual Am Loads for the A- and B-Series Ponds: CY 1997–2009 3–202
Figure 3–155. Relative Average Annual Am Load Totals for the A- and B-Series Ponds 3–203
Figure 3–156. Relative Average Annual Total U Loading Schematic for the A- and B-Series Ponds: CY 1997–2005 3–204
Figure 3–157. Relative Average Annual Total U Loading Schematic for the A- and B-Series Ponds: CY 2006–2009 3–205
Figure 3–158. Annual Total U Loads for the A- and B-Series Ponds: CY 1997–2009 3–206
Figure 3–159. Relative Average Annual Total U Load Totals for the A- and B-Series Ponds 3–207
Figure 3–160. Annual Pu Loads for Pond C-2: CY 1997–2009 3–208
Figure 3–161. Relative Average Annual Pu Load Totals for Pond C-2 3–209
Figure 3–162. Annual Am Loads for Pond C-2: CY 1997–2009 3–210
Figure 3–163. Relative Average Annual Am Load Totals for Pond C-2 3–211
Figure 3–164. Relative Average Annual U Loading Schematic for Pond C-2: CY 1997–2005 3–213
Figure 3–165. Relative Average Annual U Loading Schematic for Pond C-2: CY 2006–2009 3–214
Figure 3–166. Annual Total U Loads for Pond C-2: CY 1997–2009 3–215
Figure 3–167. Relative Average Annual Total U Load Totals for Pond C-2 3–216
Figure 3–168. Combined Annual Pu Loads from Major COU Drainages and Former WWTP: CY 1997–2009 3–218
Figure 3–169. Relative Average Annual Pu Load Totals from Major COU Drainages and Former WWTP 3–219
Figure 3–170. Annual Am Loads from Major COU Drainages and WWTP: CY 1997–2009 3–220
Figure 3–171. Relative Average Annual Am Load Totals from Major COU Drainages and WWTP 3–221
Figure 3–172. Annual Pu and Am Loads at GS10: CY 1997–2009 3–222
Figure 3–173. Annual Pu and Am Loads at the WWTP: CY 1997–2009 3–222
Figure 3–174. Annual Pu and Am Loads at SW027: CY 1997–2009 3–223
Figure 3–175. Annual Pu and Am Loads at SW093: CY 1997–2009 3–223
Figure 3–176. Annual Total U Loads from Major COU Drainages and Former WWTP: CY 1997–2009 3–224
Figure 3–177. Relative Average Annual Total U Loads from Major COU Drainages and Former WWTP 3–225
Figure 3–178. Time-Series Plot of Discontinuous U Concentrations from Selected Wells 3–235
Figure 3–179. VOC Concentrations in Samples from Mound Plume and OBP#2 Plume Downgradient Wells 15699 and 91203 3–237

Figure 3–180. Concentrations of TCE in Samples from Wells near FC-4 Constructed Wetland 3–239
Figure 3–181. Hydrograph for MSPTS from 2000 through 2009 3–240
Figure 3–182. Hydrograph for MSPTS for CY 2009 3–241
Figure 3–183. Recent Concentrations of Selected VOCs in MSPTS Influent and Effluent 3–242
Figure 3–184. Most Commonly Detected VOCs in Sentinel Wells Downgradient of the ETPTS 3–247
Figure 3–185. Carbon Tetrachloride and Chloroform in Well 23296 3–248
Figure 3–186. Hydrograph for ETPTS from 2000 through 2009 3–250
Figure 3–187. Hydrograph for ETPTS for CY 2009 3–250
Figure 3–188. TCE and PCE in ETPTS Effluent 3–254
Figure 3–189. Drawing Showing Partial Oxidation of ETPTS Cell 1 Media 3–256
Figure 3–190. Previous vs. New Influent Distribution Gallery Configuration at the ETPTS 3–257
Figure 3–191. Previous vs. New Media Design in ETPTS Treatment Cells 3–258
Figure 3–192. Summary of Upgrades to ETPTS Plumbing and Media Design 3–259
Figure 3–193. U and Nitrate Concentrations in Wells Downgradient of the Former SEPs 3–261
Figure 3–194. Hydrograph for SPPTS from 2000 through 2009 3–264
Figure 3–195. Recent Concentrations of Nitrate in Samples from SPPTS Monitoring Locations 3–265
Figure 3–196. Recent Concentrations of U in Samples from SPPTS Monitoring Locations 3–266
Figure 3–197. Evolution of SPPTS from Site Closure through Phases I, II, and III Upgrades 3–272
Figure 3–198. Effectiveness of U Treatment by Phase II Cell 3–275
Figure 3–199. Effectiveness of Nitrate Treatment by Cell A 3–277
Figure 3–200. Effectiveness of Nitrate Treatment by Cell B 3–279
Figure 3–201. VOCs in Downgradient 903 Pad/Ryan's Pit Plume Well 90399 3–281
Figure 3–202. VOCs Present in the VC Plume Source Area 3–284
Figure 3–203. Constituents with Statistically Significant Trends in Samples from Sentinel Well 33703 3–285
Figure 3–204. Concentrations of Primary and Secondary VOCs in IHSS 118.1 Source Area Well 3–287
Figure 3–205. Concentrations of Primary PU&D Yard Plume Source Area VOCs in Upgradient PLF RCRA Wells 3–289
Figure 3–206. Concentrations of Primary VOCs in B991 Sentinel Wells 3–291
Figure 3–207. Concentrations of U in B991 Sentinel Wells 3–292
Figure 3–208. Concentrations of U in B881 Sentinel Wells 3–293
Figure 3–209. Concentrations of VOCs in Sentinel Well 45608 Monitoring Hillside South of Former B991 3–294
Figure 3–210. Concentrations of Nitrate and U in Groundwater Samples from AOC Well B206989 3–296
Figure 3–211. 2009 Diffuse Knapweed (Centaurea diffusa) Distribution at Rocky Flats 3–301
Figure 3–212. 2009 Dalmation Toadflax (Linaria dalmatica) Distribution at Rocky Flats 3–302

Figure 3–213. 2009 Miscellaneous Noxious Weed Locations at Rocky Flats.....3–303
Figure 3–214. 2009 Herbicide Application Locations at the Rocky Flats Site.....3–304
Figure 3–215. 2009 Revegetation Locations.....3–305
Figure 3–216. 2009 Revegetation Monitoring Locations 3–311
Figure 3–217. 2009 Black-tailed Prairie Dog Locations.....3–321
Figure 3–218. Rocky Flats Site Bluebird Nest Box Locations 2009 3–322
Figure 3–219. Mountain Bluebird Nest Box Filled With Sticks And Twigs In 2009.....3–323

Tables

Table 1–1. Status of RFLMA Contact Records 1–6
Table 2–1. CY 2009 Pond Water Discharges and Transfers 2–9
Table 3–1. U Isotope Conversion Factors Used in Groundwater Evaluations 3–6
Table 3–2. Sampling and Data Evaluation Protocols at POCs 3–8
Table 3–3. Annual Volume-Weighted Average Radionuclide Activities at GS01 for 1997−2009.....3–9
Table 3–4. Annual Volume-Weighted Average Radionuclide Activities and Nitrate+Nitrite as Nitrogen Concentrations at GS03 for 1997−2009 3–11
Table 3–5. Annual Volume-Weighted Average Radionuclide Activities and Nitrate+Nitrite as Nitrogen Concentrations at GS08 for 1997−2009 3–13
Table 3–6. Annual Volume-Weighted Average Radionuclide Activities and Nitrate+Nitrite as Nitrogen Concentrations at GS11 for 1997−2009 3–16
Table 3–7. Annual Volume-Weighted Average Radionuclide Activities at GS31 for 1997−2009.....3–18
Table 3–8. Sampling and Data Evaluation Protocols at POEs 3–20
Table 3–9. Annual Volume-Weighted Average Radionuclide Activities at GS10 for 1997−2009.....3–22
Table 3–10. Annual Volume-Weighted Average Hardness and Metals Concentrations at GS10 for 1997−2009 3–24
Table 3–11. Reportable 12-Month Rolling Average Values for POE Monitoring Location GS10 3–26
Table 3–12. Recent Analytical Results for Composite Samples Collected at GS10 3–26
Table 3–13. U Concentrations and Isotopic Signatures from Samples Collected at GS10 as Reported by LANL.....3–31
Table 3–14. Annual Volume-Weighted Average Radionuclide Activities at SW027 for 1997−2009.....3–35
Table 3–15. Annual Volume-Weighted Average Hardness and Metals Concentrations at SW027 for 1997−2009 3–37
Table 3–16. Annual Volume-Weighted Average Radionuclide Activities at SW093 for 1997−2009.....3–39
Table 3–17. Annual Volume-Weighted Average Hardness and Metals Concentrations at SW093 for 1997–2009.....3–40
Table 3–18. Sampling and Data Evaluation Protocols at AOC Wells and SW018 3–42
Table 3–19. Sampling and Data Evaluation Protocols at Boundary Wells 3–44
Table 3–20. Sampling and Data Evaluation Protocols at Sentinel Wells 3–45
Table 3–21. Sampling and Data Evaluation Protocols at Evaluation Wells.....3–48

Table 3–22. Sampling and Data Evaluation Protocols at Investigative Monitoring Locations....3–51
Table 3–23. Sampling and Data Evaluation Protocols at PLF RCRA Monitoring Wells....3–53
Table 3–24. RCRA Groundwater Sampling Performed in 2009 at the PLF....3–54
Table 3–25. Results of Groundwater ANOVA Evaluation for 2009 at the PLF....3–55
Table 3–26. Sampling and Data Evaluation Protocols at OLF Surface-Water Monitoring Locations....3–58
Table 3–27. Sampling and Data Evaluation Protocols at OLF RCRA Monitoring Wells....3–59
Table 3–28. Ag Analytical Results for Composite Samples Collected at GS59 in CY 2009....3–59
Table 3–29. RCRA Groundwater Sampling Performed in 2009 at the OLF....3–60
Table 3–30. Results of Groundwater ANOVA Evaluation at the OLF....3–60
Table 3–31. VOCs and SVOCs Detected in 2009 in Downgradient Wells at the OLF....3–63
Table 3–32. RFLMA Sampling and Data Evaluation Protocols at MSPTS Monitoring Locations....3–64
Table 3–33. RFLMA Sampling and Data Evaluation Protocols at ETPTS Monitoring Locations....3–66
Table 3–34. RFLMA Sampling and Data Evaluation Protocols at SPPTS Monitoring Locations....3–67
Table 3–35. Sampling and Data Evaluation Protocols at PLFTS Monitoring Locations....3–68
Table 3–36. PLFTS Effluent (PLFSYSEFF): Summary of CY 2009 Grab Sampling Analytical Results Exceeding RFLMA Surface-Water Standards....3–69
Table 3–37. Sampling and Data Evaluation Protocols at Pre-Discharge Monitoring Locations....3–71
Table 3–38. Monitoring Network Precipitation Gage Information....3–130
Table 3–39. Total Monthly Precipitation Data for 2009....3–139
Table 3–40. Calculated Flow Velocities for 2009....3–143
Table 3–41. Summary Statistics for Pu-239,240 Analytical Results in CY 1997—October 13, 2005....3–148
Table 3–42. Post-Closure Summary Statistics for Pu-239,240 Analytical Results (October 13, 2005−December 31, 2009)....3–149
Table 3–43. Summary Statistics for Am-241 Analytical Results in CY 1997−October 13, 2005....3–152
Table 3–44. Post-Closure Summary Statistics for Am-241 Analytical Results (October 13, 2005−December 31, 2009)....3–152
Table 3–45. Summary Statistics for Total U Analytical Results in CY 1997−October 13, 2005....3–155
Table 3–46. Post-Closure Summary Statistics for Total U Analytical Results (October 13, 2005−December 31, 2009)....3–155
Table 3–47. Post-Closure Summary Statistics for Nitrate+Nitrite as Nitrogen Analytical Results (October 13, 2005−December 31, 2009)....3–158
Table 3–48. Average Pu/Am Ratios for Analytical Results in CY 1997−October 13, 2005....3–160
Table 3–49. Post-Closure Average Pu/Am Ratios for Analytical Results (October 13, 2005−December 31, 2009)....3–160

Table 3–50. Summary Statistics for POE Metals Results from GS10 in CY 1997−October 13, 2005 3–163
Table 3–51. Post-Closure Summary Statistics for POE Metals Results from GS10 (October 13, 2005−December 31, 2009) 3–163
Table 3–52. Summary Statistics for POE Metals Results from SW027 in CY 1997−October 13, 2005 3–163
Table 3–53. Post-Closure Summary Statistics for POE Metals Results from SW027 (October 13, 2005−December 31, 2009) 3–164
Table 3–54. Summary Statistics for POE Metals Results from SW093 in CY 1997−October 13, 2005 3–164
Table 3–55. Post-Closure Summary Statistics for POE Metals Results from SW093 (October 13, 2005−December 31, 2009) 3–164
Table 3–56. Activity to Mass Conversion Factors for Pu, Am, and U Isotopes 3–165
Table 3–57. Off-Site Pu and Am Loads from Walnut and Woman Creeks: CY 1997–2009 3–173
Table 3–58. Total U Loads from Walnut and Woman Creeks: CY 2003−2009 3–176
Table 3–59. Pu Loads at GS03, GS08, and GS11: CY 1997–2009 3–178
Table 3–60. Am Loads at GS03, GS08, and GS11: CY 1997–2009 3–179
Table 3–61. Total U Loads at GS03, GS08, and GS11: CY 2003−2009 3–184
Table 3–62. Pu Loads at GS01 and GS31: CY 1997–2009 3–186
Table 3–63. Am Loads at GS01 and GS31: CY 1997–2009 3–187
Table 3–64. Total U Loads at GS01 and GS31: CY 2003−2009 3–191
Table 3–65. Pu and Am Loads from Terminal Ponds A-4, B-5, and C-2: CY 1997–2009 3–194
Table 3–66. Total U Loads from Terminal Ponds A-4, B-5, and C-2: CY 1997–2009 3–197
Table 3–67. Pu Load Summary for the A- and B-Series Ponds: CY 1997–2009 3–199
Table 3–68. Am Load Summary for the A- and B-Series Ponds: CY 1997–2009 3–202
Table 3–69. Total U Load Summary for the A- and B-Series Ponds: CY 1997–2009 3–206
Table 3–70. Pu Load Summary for Terminal Pond C-2: CY 1997–2009 3–208
Table 3–71. Am Load Summary for Terminal Pond C-2: CY 1997–2009 3–210
Table 3–72. Total U Load Summary for Terminal Pond C-2: CY 1997–2009 3–212
Table 3–73. COU Pu and Am Loads: CY 1997–2009 3–218
Table 3–74. COU Total U Loads: CY 1997–2009 3–224
Table 3–75. RFLMA Monitoring Classifications for the Groundwater Monitoring Network 3–226
Table 3–76. Summary of Scheduled RFLMA-Required Groundwater Sampling in CY 2009 (by Quarter) 3–227
Table 3–77. Summary of RFLMA-Required Groundwater Samples Not Successfully Collected in 2009 3–229
Table 3–78. Summary of Non-RFLMA-Required Groundwater Monitoring Performed in 2009 3–229
Table 3–79. Summary of Statistical Trend Calculations 3–232
Table 3–80. Estimated Volumes of Water Treated by the MSPTS 3–240
Table 3–81. Selected VOC Data (µg/L) from MSPTS Influent and Effluent 3–243
Table 3–82. Summary of VOCs Detected in 2009 at GS10 3–245
Table 3–82. Estimated Volumes of Water Treated by the ETPTS 3–249
Table 3–83. Summary of Recent VOC Data from ETPTS Influent and Effluent 3–252
Table 3–84. Summary of VOCs Detected in 2009 at POM2 3–253

Table 3–85. Estimated Volumes of Water Treated by the SPPTS....3–263
Table 3–86. Summary Statistics for U and Nitrate Concentrations from 2000 through 2009 at Historical and Current SPPTS Monitoring Locations....3–267
Table 3–87. COU Noxious Weed Acreage Summary (2007−2009)....3–299
Table 3–88. FY 2009 Herbicide Application Summary....3–307
Table 3–89. Success Criteria Evaluation Summary 2009....3–313
Table 3–90. Relative Foliar Cover of Selected Species on Native Grasslands At Rocky Flats....3–316
Table 3–91. CY 2009 Sample Type Breakdown....3–331
Table 3–92. Summary of DER Values....3–331
Table 3–93. Summary of RPD Values....3–332
Table 3–94. Summary of MS and MSD Recovery Data....3–332
Table 3–95. Summary of V&V Data Completeness....3–334
Table 3–96. Summary of Field QC Samples and Data Records....3–334

Appendixes

Appendix A Hydrologic Data
Appendix B Water-Quality Data
Appendix C Landfill Inspection Forms—Fourth Quarter CY 2009
Appendix D Data Evaluation Flowcharts Reproduced from RFLMA and the RFSOG
Appendix E *Technical Memorandum Regarding Instrumentation and Monitoring at the Rocky Flats OLF*
Appendix F *Rocky Flats SPPTS Geotechnical Investigation Report*
Appendix G RFLMA Contact Records

Available on DVD:

Ecology DVD: 2009 Annual RFS Ecology Reports

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Abbreviations

Ag	silver
Am	americium
ANOVA	Analysis of Variance
AOC	Area of Concern
B	boron
Be	beryllium
BMP	best management practice
CAD/ROD	Corrective Action Decision/Record of Decision
Cd	cadmium
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (also known as "Superfund")
CFR	*Code of Federal Regulations*
cfs	cubic feet per second
cm/s	centimeters per second
CNHP	Colorado Natural Heritage Program
COU	Central Operable Unit
Cr	chromium
CY	calendar year
D&D	decontamination and decommissioning
DCA	dichloroethane
DCB	dichlorobenzene
DCE	dichloroethene
DER	duplicate error ratio
DG	Discharge Gallery
DOE	U.S. Department of Energy
DQA	data quality assessment
EPA	U.S. Environmental Protection Agency
ERP	*Emergency Response Plan for Rocky Flats Site Dams*
ESL	Environmental Sciences Laboratory
ETPTS	East Trenches Plume Treatment System
FC	Functional Channel
FR	*Federal Register*
ft/yr	feet per year
g	gram
GIS	Geographic Information System
gpm	gallons per minute
GWIS	Groundwater Intercept System
HR ICP/MS	high-resolution inductively coupled plasma/mass spectrometry
HRC	Hydrogen Release Compound
HRT	hydraulic residence time
IA	Industrial Area
IC	institutional control
IHSS	Individual Hazardous Substance Site
IMP	Integrated Monitoring Plan
ITPH	Interceptor Trench Pump House

ITS	Interceptor Trench System
K-H	Kaiser-Hill Company, LLC
L	liter
LANL	Los Alamos National Laboratory
LCS	laboratory control sample
LM	Office of Legacy Management
M&M	monitoring and maintenance
m^3	cubic meter
MCL	maximum contaminant level
MDA	minimum detectable activity
M-K	Mann-Kendall
µg	microgram
µg/L	micrograms per liter
mg/L	milligrams per liter
mL	milliliter
MS	matrix spike
MSD	matrix spike duplicate
MSPTS	Mound Site Plume Treatment System
NA	not applicable
NOID	Notice of Intent to Delete
NPL	National Priorities List
NWTC	National Wind Technology Center
OBP	Oil Burn Pit
OLF	Original Landfill
OU	Operable Unit
PARCC	precision, accuracy, representativeness, completeness, and comparability
PCE	tetrachloroethene
pCi	picocurie
pCi/L	picocuries per liter
pCi/µg	picocuries per microgram
PIP	Public Involvement Plan
PLF	Present Landfill
PLFTS	Present Landfill Treatment System
POC	Point of Compliance
POE	Point of Evaluation
POU	Peripheral Operable Unit
PQL	practical quantitation limit
Pu	plutonium
PU&D	Property Utilization and Disposal
PVC	polyvinyl chloride
PZ	piezometer
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RFCA	*Rocky Flats Cleanup Agreement*
RFETS	Rocky Flats Environmental Technology Site
RFLMA	*Rocky Flats Legacy Management Agreement*
RFSOG	*Rocky Flats Site Operations Guide*

RI/FS	Remedial Investigation/Feasibility Study
RMRS	Rocky Mountain Remediation Services
RPD	relative percent difference
RPS	Responsive Pre-Hearing Statement
Se	selenium
SED	Sitewide Ecological Database
SEEPro	Site Environmental Evaluation for Projects
SEP	Solar Evaporation Pond
SID	South Interceptor Ditch
S-K	Seasonal-Kendall
SPP	Solar Ponds Plume
SPPTS	Solar Ponds Plume Treatment System
STP	Sewage Treatment Plant
SVOC	semivolatile organic compound
TCA	trichloroethane
TCB	trichlorobenzene
TCE	trichloroethene
TIMS	thermal ionization mass spectrometry
TM	temporary modification
TSS	total suspended solids
U	uranium
UHSU	upper hydrostratigraphic unit
USFWS	U.S. Fish and Wildlife Service
V&V	validation and verification
VC	vinyl chloride
VOC	volatile organic compound
WQCC	Water Quality Control Commission
WQCD	Water Quality Control Division
WQP	water quality parameter
WWTP	Wastewater Treatment Plant
yr	year
ZVI	zero-valent iron

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Executive Summary

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is responsible for implementing the final response action selected in the *Final Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit* (CAD/ROD) issued September 29, 2006, for the Rocky Flats Site (Site).

Under the CAD/ROD, two Operable Units (OUs) were established within the boundaries of the Rocky Flats property: the Peripheral OU (POU) and the Central OU (COU). The COU consolidates all areas of the Site that require additional remedial or corrective actions while also considering practicalities of future land management. The POU includes the remaining, generally unimpacted portions of the Site and surrounds the COU. The response action in the Final CAD/ROD is no action for the POU and institutional and physical controls with continued monitoring for the COU. The CAD/ROD determined that conditions in the POU were suitable for unrestricted use. The U.S. Environmental Protection Agency (EPA) subsequently published a Notice of Partial Deletion from the National Priorities List for the POU on May 25, 2007.

DOE, EPA, and the Colorado Department of Public Health and Environment (CDPHE) have chosen to implement the monitoring and maintenance requirements of the CAD/ROD under, and as described in, the *Rocky Flats Legacy Management Agreement* (RFLMA), executed March 14, 2007. RFLMA Attachment 2 defines the COU remedy surveillance and maintenance requirements. The requirements include environmental monitoring; maintenance of the erosion controls, access controls (signs), landfill covers, and groundwater treatment systems; and operation of the groundwater treatment systems.

LM prepared the *Rocky Flats Site Operations Guide* to serve as the primary internal document to guide work performed to satisfy the requirements of RFLMA and implement best management practices at the Site.

This report addresses all surveillance and maintenance activities conducted at the Site during Calendar Year 2009 (January 1 through December 31, 2009). Highlights of the surveillance and maintenance activities are as follows:

- RFLMA references the use of contact records to document CDPHE approvals of field modifications to implement approved response actions. RFLMA Attachment 2 references the use of contact records to document the outcome of consultation related to addressing any reportable conditions. This report discusses RFLMA contact records issued in 2009 and the contact record status as of December 31, 2009.
- Several Colorado Water Quality Control Commission (WQCC) proceedings related to surface water standards for stream segments at Rocky Flats occurred in 2009. Pursuant to a rulemaking hearing in January 2009, the WQCC revised the uranium standard from a site-specific standard to the Colorado health-based standard and deleted the gross alpha and gross beta site-specific standards. DOE requested the revisions due to changed conditions resulting from cleanup and closure of the Site. The new U standard is approximately 10 percent higher than the previous standard. The WQCC completed the triennial review of the South Platte River Basin surface water standards with a hearing in June 2009. Minor revisions to segment descriptions, recreational use classifications of stream segments at

Rocky Flats, and revisions to adopt new statewide basic standard for arsenic were adopted by the WQCC in the triennial review.

- Monitoring in 2009 of the Original Landfill (OLF) inclinometers installed in 2008 showed deflection, indicating localized movement, and minor localized surface cracking was also observed. The annual report includes a review of the data by a qualified geotechnical engineer. The inclinometers were installed as part of the geotechnical investigation to address localized slumping and settling of the OLF cover observed in 2007. Construction work was completed in 2008 to improve OLF stability and improve drainage based on the results of the geotechnical investigation. This included constructing an extension to the Seep 7 drain and adding fill to and regrading the west diversion channel to improve slope stability. The data review concluded that the observed conditions are consistent with the geotechnical investigation findings. Continued monitoring and routine maintenance are presently considered adequate to address any observed surface cracking resulting from minor slumping due to observed localized movement.
- Modifications to RFLMA Attachment 2, "Legacy Management Requirements," and to the OLF Monitoring and Maintenance Plan were submitted for approval in 2009. The RFLMA modifications reflected results of the WQCC rulemaking in 2009 and incorporation of changes to monitoring previously approved in Contact Records. Changes to the OLF Monitoring and Maintenance Plan requirements reflected the geotechnical investigation and construction work.
- Surface-water flow volumes continue to show expected reductions resulting from land configuration changes and removal of impervious surfaces.
- All surface-water Points of Compliance showed acceptable water quality for the entire year.
- Point of Evaluation (POE) location GS10 showed reportable values for total U for a portion of 2009; as of April 30, 2009, total U concentrations at GS10 were no longer reportable. Evaluation has suggested that the reportable values are due to changes in hydrologic conditions, which have caused groundwater with naturally occurring U to make up a larger proportion of streamflow at GS10. All other POEs and all other analytes at GS10 showed acceptable water quality for the entire year.
- Surface-water monitoring at the Present Landfill Treatment System showed three analytes as periodically above applicable standards. Additional monitoring was performed as required by the RFLMA data evaluation process. Results of the additional monitoring did not indicate water quality levels requiring consultation between the RFLMA parties.
- The groundwater treatment systems at the Site continued to successfully remove contaminant loading to surface water from groundwater plumes.
- Phase II and Phase III upgrades to the Solar Ponds Plume Treatment System (SPPTS) were completed and implemented in May 2009. In an effort to further improve water quality in North Walnut Creek, the upgrades were designed to improve treatment cell access, reduce operational costs, and allow evaluation of alternative treatment methods. The Phase I components installed in late 2008 continued to effectively capture and allow treatment of more of the contaminated groundwater that would otherwise discharge untreated to the creek. Sampling of SPPTS and North Walnut Creek locations was increased to support an evaluation of the effects of Phase II/III improvements to the system and to support planning for Phase IV upgrades, an improved full-scale nitrate treatment component.

- The East Trenches Plume Treatment System treatment media was replaced, and plumbing upgrades were installed in late 2009 to simplify system operation, improve system performance, and reduce future maintenance needs.
- Groundwater quality and flow at the Site were generally consistent with previous years. Statistical trending calculations indicated numerous significant concentration trends.
- Elevated nitrate concentrations in groundwater that led to the reportable condition reported at Area of Concern well B206989 in 2007 persisted through 2009. Concentrations were generally consistent with previous data, but statistical trending incorporating 2009 data now indicates a decreasing trend in nitrate concentrations that is statistically significant at the 95 percent confidence level.
- The results of statistical evaluations of groundwater quality at the OLF and Present Landfill were essentially identical to the results of these evaluations performed in 2008.
- All RFLMA-required ecological data collection, analysis, and reporting were completed as scheduled.
- Revegetation monitoring data continue to document the establishment of the desirable grassland species at the Site. Several locations met success criteria this year.
- The annual data quality assessment showed that the Site continues to collect high-quality data sufficient for decision making.

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Appendix A: Hydrologic Data

A.1 Surface-Water Discharge Data
- A.1.1 GS01: Woman Creek at Indiana Street
- A.1.2 GS03: Walnut Creek at Indiana Street
- A.1.3 GS05: Woman Creek at West Fenceline
- A.1.4 GS08: South Walnut Creek at Pond B-5 Outlet
- A.1.5 GS10: South Walnut Creek at B-1 Bypass
- A.1.6 GS11: North Walnut Creek at Pond A-4 Outlet
- A.1.7 GS12: North Walnut Creek at Pond A-3 Outlet
- A.1.8 GS13: North Walnut Creek above Pond A-1
- A.1.9 GS31: Woman Creek at Pond C-2 Outlet
- A.1.10 GS33: No Name Gulch at Walnut Creek
- A.1.11 GS51: Ditch South of 903 Pad
- A.1.12 GS59: Woman Creek Upstream of Antelope Springs Confluence
- A.1.13 SW018: Functional Channel 2 at FC-2 Wetland
- A.1.14 SW027: South Interceptor Ditch at Pond C-2
- A.1.15 SW093: North Walnut Creek 1,300 feet Upstream of A-1 Bypass

A.2 Precipitation Data
- A.2.1 PG58: Gaging Station GS01
- A.2.2 PG59: Gaging Station GS03
- A.2.3 PG61: Gaging Station GS05
- A.2.4 PG73: Gaging Station GS13
- A.2.5 PG74: Gaging Station GS59
- A.2.6 PG75: Gaging Station SW018
- A.2.7 PG76: Telemetry Repeater Node RTU3
- A.2.8 PG77: Telemetry Repeater Node RTU2

A.3 Groundwater Level Data for CY 2009

A.4 Groundwater Hydrographs
- A.4.1 Hydrographs for Manually Collected Water Level Data
- A.4.2 Hydrographs for Automated Water Level Data

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Appendix A: Hydrologic Data

A.1 Surface-Water Discharge Data

This section includes mean daily discharge tables and hydrographs by monitoring location and calendar year.

A.1.1 GS01: Woman Creek at Indiana Street

Table A–1. CY 2009 Discharge Summary for GS01: Woman Creek at Indiana Street

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.000	0.014	0.022	0.385	0.566	0.544	0.008	0.000	0.000	0.000	0.447	0.266
2	0.000	0.009	0.021	0.347	0.539	4.982	0.008	0.000	0.000	0.000	0.990	0.266
3	0.000	0.012	0.018	0.498	0.526	3.337	0.005	0.000	0.000	0.000	0.579	*0.244*
4	*0.000*	0.012	0.016	0.589	0.529	1.504	0.042	0.000	0.000	0.000	0.386	*0.238*
5	0.016	0.011	0.014	0.500	0.425	0.513	0.015	0.000	0.000	0.000	0.268	*0.206*
6	0.022	0.018	0.013	0.444	0.325	0.297	0.008	0.000	0.000	0.000	0.183	WR
7	0.003	0.037	0.013	0.441	0.239	0.194	0.002	0.000	0.000	0.000	0.133	WR
8	0.000	0.042	0.013	0.304	0.165	0.193	0.000	0.000	0.000	0.000	0.101	WR
9	*0.000*	0.042	0.012	0.197	0.130	0.191	0.000	0.000	0.000	0.000	0.078	WR
10	*0.001*	0.034	0.012	0.137	0.175	0.178	0.000	0.000	0.000	0.000	0.072	WR
11	0.001	0.032	0.011	0.115	0.302	0.233	0.000	0.000	0.000	0.000	0.141	WR
12	*0.001*	0.031	0.009	0.093	0.264	0.547	0.000	0.000	0.000	0.000	0.181	WR
13	*0.002*	0.032	0.008	0.086	0.165	0.433	0.000	0.000	0.000	0.000	0.183	0.292
14	0.002	0.042	0.012	0.087	0.116	0.361	0.000	0.000	0.000	0.000	0.226	0.294
15	0.004	0.038	0.006	0.075	0.081	0.275	0.000	0.000	0.000	0.000	0.297	*0.258*
16	0.006	0.045	0.005	0.086	0.060	0.192	0.000	0.000	0.000	0.000	0.334	0.276
17	0.028	0.031	0.004	0.716	0.040	0.135	0.000	0.000	0.000	0.000	0.393	0.346
18	0.053	0.024	0.003	3.306	0.028	0.076	0.000	0.000	0.000	0.000	0.543	0.359
19	0.058	0.023	0.003	9.117	0.015	0.035	0.000	0.000	0.000	0.000	0.589	*0.303*
20	0.061	0.026	0.003	*22.598*	0.010	0.010	0.000	0.000	0.000	0.000	0.514	0.286
21	0.060	0.037	0.002	7.205	0.007	0.010	0.000	0.000	0.000	0.000	0.483	0.311
22	0.061	0.026	0.001	2.147	0.005	0.005	0.000	0.000	0.000	0.000	0.486	0.320
23	0.078	0.024	0.001	1.234	0.011	0.005	0.000	0.000	0.000	0.000	0.422	0.306
24	0.073	0.026	0.000	0.818	0.150	0.310	0.000	0.000	0.000	0.000	0.349	WR
25	0.053	0.037	0.000	0.632	0.289	0.781	0.000	0.000	0.000	0.000	0.304	WR
26	*0.041*	0.035	0.001	0.592	3.417	0.290	0.000	0.000	0.000	0.000	0.308	WR
27	*0.033*	0.030	0.005	1.428	1.873	0.367	0.000	0.000	0.000	0.000	0.338	WR
28	*0.027*	0.025	0.008	2.576	1.093	0.134	0.000	0.000	0.000	0.000	0.322	WR
29	*0.022*	NA	0.249	1.131	1.262	0.038	0.000	0.000	0.000	0.000	0.295	WR
30	*0.018*	NA	0.943	0.713	1.910	0.010	0.000	0.000	0.000	0.000	0.274	0.295
31	*WR*	NA	0.520	NA	1.131	NA	0.002	0.000	NA	0.000	NA	*0.251*
	Partial Data											Partial Data

Flow Rate

Average	0.024	0.028	0.063	1.953	0.511	0.539	0.003	0.000	0.000	0.000	0.341	0.284
Maximum	0.078	0.045	0.943	22.598	3.417	4.982	0.042	0.000	0.000	0.000	0.990	0.359
Minimum	0.000	0.009	0.000	0.075	0.005	0.005	0.000	0.000	0.000	0.000	0.072	0.206
	Partial Data											Partial Data

Discharge

Cubic Feet	62468	68542	168205	5062791	1369534	1397879	7812	0	0	0	882904	441987
Gallons	467294	512734	1258259	37872308	10244823	10456859	58434	0	0	0	6604583	3306290
Acre-Feet	1.43	1.57	3.86	116.23	31.44	32.09	0.18	0.00	0.00	0.00	20.27	10.15
	Partial Data											Partial Data

Annual Summaries for CY09

Ft^3/Sec	0.312
GPM	140.0
Cubic Feet	9462121
Gallons	70781582
Acre-Feet	217.22
	Partial Data

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.2 GS03: Walnut Creek at Indiana Street

Table A–2. CY 2009 Discharge Summary for GS03: Walnut Creek at Indiana Street

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	*0.000*	0.000	0.000	0.000	0.006	1.592	0.000	0.000	*0.000*	*0.000*	0.000	0.000
2	*0.000*	0.000	0.000	0.000	0.005	2.756	0.000	0.000	*0.000*	*0.000*	0.000	0.000
3	*0.000*	0.000	0.000	0.000	0.006	2.724	0.000	0.000	*0.000*	*0.000*	0.000	0.000
4	*0.000*	0.000	0.000	0.000	0.003	1.680	0.000	0.000	*0.000*	*0.000*	0.000	0.000
5	*0.000*	0.000	0.000	0.000	*0.000*	0.978	0.000	0.000	*0.000*	*0.000*	0.000	0.000
6	*0.000*	0.000	0.000	0.000	0.000	0.392	0.000	*0.000*	*0.000*	*0.000*	0.000	0.000
7	0.000	0.000	0.000	0.000	0.000	0.045	0.000	*0.000*	*0.000*	0.000	0.000	0.000
8	*0.000*	0.000	0.000	0.000	0.000	0.033	0.000	*0.000*	*0.000*	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.029	0.000	*0.000*	*0.000*	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.019	0.031	0.000	*0.000*	*0.000*	0.000	0.000	0.000
11	0.000	0.000	0.000	0.000	0.020	0.031	0.000	*0.000*	*0.000*	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000	0.017	0.049	0.000	*0.000*	*0.000*	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.009	0.014	0.000	*0.000*	*0.000*	0.000	0.000	0.567
14	0.000	0.000	0.000	0.000	0.005	0.011	0.000	*0.000*	*0.000*	0.000	0.000	1.386
15	0.000	0.000	0.000	0.000	0.001	0.012	0.000	*0.000*	*0.000*	0.000	0.000	1.447
16	0.000	0.000	0.000	0.000	0.000	0.009	0.000	*0.000*	*0.000*	0.000	0.000	0.986
17	0.000	0.000	0.000	0.000	0.000	0.007	0.000	*0.000*	*0.000*	0.000	0.000	1.626
18	0.000	0.000	0.000	BD	0.000	0.008	0.000	*0.000*	*0.000*	0.000	0.000	1.414
19	0.000	0.000	0.000	BD	0.018	0.008	0.000	*0.000*	*0.000*	0.000	0.000	1.482
20	0.000	0.000	0.000	11.120	1.013	0.010	0.000	*0.000*	*0.000*	0.000	0.000	1.095
21	0.000	0.000	0.000	2.472	1.176	0.012	0.000	*0.000*	*0.000*	0.000	0.000	0.624
22	0.000	0.000	0.000	0.424	1.158	0.008	0.000	*0.000*	*0.000*	0.000	0.000	*0.021*
23	0.000	0.000	0.000	0.099	1.694	0.004	0.000	*0.000*	*0.000*	0.000	0.000	*0.010*
24	0.000	0.000	0.000	0.009	2.599	0.010	0.000	*0.000*	*0.000*	0.000	0.000	*0.005*
25	0.000	0.000	0.000	0.000	2.813	0.003	0.000	*0.000*	*0.000*	0.000	0.000	*0.000*
26	0.000	0.000	0.000	0.000	3.203	0.003	0.000	*0.000*	*0.000*	0.000	0.000	*0.000*
27	0.000	0.000	0.000	0.215	2.724	0.001	0.000	*0.000*	*0.000*	0.000	0.000	*0.000*
28	0.000	0.000	0.000	0.609	2.380	0.001	0.000	*0.000*	*0.000*	0.000	0.000	*0.000*
29	0.000	NA	0.000	0.124	2.081	0.000	0.000	*0.000*	*0.000*	0.000	0.000	*0.010*
30	0.000	NA	0.000	0.012	2.000	0.000	0.000	*0.000*	*0.000*	0.000	0.000	*0.014*
31	0.000	NA	0.000	NA	1.864	NA	0.000	*0.000*	NA	0.000	NA	*0.000*

Partial Data

Flow Rate

Average	0.000	0.000	0.000	0.539	0.800	0.349	0.000	0.000	0.000	0.000	0.000	0.345
Maximum	0.000	0.000	0.000	11.120	3.203	2.756	0.000	0.000	0.000	0.000	0.000	1.626
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Partial Data

Discharge

Cubic Feet	0	0	0	1303324	2143819	904011	0	0	0	0	0	923421
Gallons	0	0	0	9749538	16036883	6762473	0	0	0	0	0	6907670
Acre-Feet	0.00	0.00	0.00	29.92	49.22	20.75	0.00	0.00	0.00	0.00	0.00	21.20

Partial Data

Annual Summaries for CY09

Ft^3/Sec	0.168
GPM	75.5
Cubic Feet	5274575
Gallons	39456563
Acre-Feet	121.09

Partial Data

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.3 GS05: Woman Creek at West Fenceline

Table A–3. CY 2009 Discharge Summary for GS05: Woman Creek at West Fenceline

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	WR	0.016	0.016	0.065	0.168	0.059	0.015	0.016	0.000	0.000	0.690	0.217
2	WR	0.016	0.014	0.128	0.180	2.377	0.042	0.008	0.000	0.001	0.581	0.219
3	0.011	0.026	0.012	0.143	0.204	0.699	0.033	0.001	0.000	0.039	0.402	0.187
4	0.003	0.036	0.012	0.165	0.175	0.227	0.037	0.000	0.000	0.054	0.194	0.086
5	WR	0.034	0.011	0.159	0.092	0.133	0.050	0.000	0.000	0.087	0.149	WR
6	WR	0.033	0.012	0.214	0.069	0.098	0.031	0.000	0.000	0.068	0.128	WR
7	WR	0.033	0.013	0.122	0.054	0.111	0.029	0.008	0.000	0.068	0.088	WR
8	0.015	0.034	0.013	0.073	0.049	0.140	0.025	0.001	0.000	0.076	0.078	WR
9	*0.010*	0.045	0.015	0.046	0.067	0.179	0.021	0.000	0.000	0.060	*0.107*	WR
10	*0.014*	*0.028*	0.018	0.043	0.119	0.264	0.024	0.000	0.000	0.055	*0.215*	WR
11	0.031	*0.031*	0.019	0.041	0.127	0.314	0.020	0.000	0.000	0.054	*0.212*	WR
12	0.014	0.048	0.020	0.049	0.075	0.423	0.057	0.000	0.000	0.051	*0.219*	WR
13	0.027	0.027	0.018	0.043	0.056	0.364	0.044	0.000	0.071	0.052	*0.242*	WR
14	0.019	0.028	0.016	0.037	0.057	0.282	0.025	0.000	0.024	0.051	*0.253*	0.136
15	0.020	0.022	0.016	0.037	0.053	0.271	0.020	0.000	0.014	0.049	*0.269*	*0.186*
16	0.028	0.028	0.014	0.081	0.053	0.232	0.019	0.000	0.007	0.050	*0.280*	0.224
17	0.027	0.027	0.013	0.206	0.048	0.190	0.016	0.000	0.003	0.028	*0.352*	0.238
18	0.026	0.018	0.013	1.065	0.041	0.096	0.018	0.000	0.002	0.024	*0.401*	0.202
19	0.028	0.020	0.014	4.821	0.033	0.082	0.018	0.000	0.001	0.024	*0.353*	0.236
20	0.026	0.018	0.014	*9.432*	0.027	0.068	0.013	0.000	0.000	0.025	*0.332*	0.207
21	0.029	0.024	0.014	1.496	0.038	0.073	0.035	0.000	0.001	0.090	*0.324*	0.202
22	0.028	0.018	0.018	0.484	0.040	0.066	0.018	0.000	0.017	0.117	*0.303*	0.192
23	0.023	0.021	0.016	0.362	0.047	0.064	0.011	0.000	0.017	0.143	*0.264*	0.186
24	0.018	0.019	0.014	0.256	0.098	0.131	0.001	0.000	0.018	0.260	*0.245*	0.232
25	*0.014*	0.016	0.014	0.240	0.122	0.067	0.001	0.000	0.017	0.282	0.244	0.112
26	WR	0.015	*0.025*	0.236	0.840	0.137	0.000	0.000	0.016	0.286	0.249	0.114
27	WR	0.013	0.039	1.215	0.176	0.065	0.000	0.000	0.009	0.303	0.240	0.112
28	WR	0.019	0.064	0.590	0.077	0.038	0.001	0.000	0.002	0.323	0.213	0.095
29	WR	NA	0.219	0.284	0.059	0.019	0.042	0.000	0.001	0.309	0.209	0.090
30	WR	NA	*0.150*	0.205	0.057	0.016	0.066	0.000	0.001	0.377	0.213	0.115
31	WR	NA	0.101	NA	0.056	NA	0.030	0.000	NA	0.538	NA	0.178
	Partial Data											Partial Data

Flow Rate

	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
Average	0.021	0.025	0.031	0.745	0.108	0.243	0.025	0.001	0.007	0.127	0.268	0.171
Maximum	0.031	0.048	0.219	9.432	0.840	2.377	0.066	0.016	0.071	0.538	0.690	0.238
Minimum	0.003	0.013	0.011	0.037	0.027	0.016	0.000	0.000	0.000	0.000	0.078	0.086
	Partial Data											Partial Data

Discharge

	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
Cubic Feet	35583	61670	83418	1930195	290078	629328	66110	2973	19260	340761	695458	325446
Gallons	266179	461321	624008	14438860	2169933	4707702	494535	22241	144077	2549073	5202390	2434504
Acre-Feet	0.82	1.42	1.92	44.31	6.66	14.45	1.52	0.07	0.44	7.82	15.97	7.47
	Partial Data											Partial Data

Annual Summaries for CY09

Ft^3/Sec	0.150
GPM	67.5
Cubic Feet	4480280
Gallons	33514821
Acre-Feet	102.85
	Partial Data

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.4 GS08: South Walnut Creek at Pond B-5 Outlet

Table A–4. CY 2009 Discharge Summary for GS08: South Walnut Creek at Pond B-5 Outlet

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.000	0.000	0.000	0.000	0.000	0.669	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	1.003	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.989	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.721	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.624	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.280	0.000	0.000	0.000	0.000	0.000	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.000	0.751	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	1.383	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.000	1.445	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	1.365	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	1.332	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.000	1.319	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	1.345	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.000	1.278	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27	0.000	0.000	0.000	0.000	1.161	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	0.000	1.061	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29	0.000	NA	0.000	0.000	0.929	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	NA	0.000	0.000	0.958	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	0.000	NA	0.000	NA	0.920	NA	0.000	0.000	NA	0.000	NA	0.000

Flow Rate

Average	0.000	0.000	0.000	0.000	0.492	0.143	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	0.000	0.000	0.000	0.000	1.445	1.003	0.000	0.000	0.000	0.000	0.000	0.000
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Discharge

Cubic Feet	0	0	0	0	1317402	370257	0	0	0	0	0	0
Gallons	0	0	0	0	9854854	2769714	0	0	0	0	0	0
Acre-Feet	0.00	0.00	0.00	0.00	30.24	8.50	0.00	0.00	0.00	0.00	0.00	0.00

Annual Summaries for CY09

Ft^3/Sec	0.054
GPM	24.0
Cubic Feet	1687659
Gallons	12624568
Acre-Feet	38.74

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.5 GS10: South Walnut Creek at B-1 Bypass

Table A–5. CY 2009 Discharge Summary for GS10: South Walnut Creek at B-1 Bypass

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.013	0.008	0.007	0.028	0.087	0.126	0.047	0.016	*0.014*	0.008	0.194	0.028
2	0.016	0.009	0.008	0.029	0.089	0.673	0.049	0.013	*0.014*	0.008	0.091	0.021
3	0.009	0.008	0.009	0.031	0.091	0.293	0.057	0.011	*0.016*	0.008	0.076	0.018
4	0.005	0.010	0.009	0.043	0.105	0.166	0.097	0.013	*0.016*	0.009	0.061	0.017
5	0.011	0.010	0.008	0.028	0.081	0.137	0.068	0.015	*0.012*	0.019	0.053	0.023
6	0.014	0.010	0.008	0.026	0.074	0.124	0.070	0.033	*0.011*	0.016	0.056	0.020
7	0.012	0.009	0.008	0.028	0.069	0.121	0.049	0.026	*0.014*	0.010	0.049	0.019
8	0.014	0.008	0.009	0.024	0.065	0.120	0.044	0.012	*0.013*	0.014	0.043	0.022
9	0.011	0.011	0.008	0.020	0.063	0.114	0.037	0.010	*0.015*	0.014	*0.040*	0.005
10	0.008	0.007	0.007	0.018	0.088	0.115	0.038	0.009	*0.015*	0.011	*0.037*	*0.000*
11	0.009	0.007	0.007	0.018	0.094	0.129	0.037	0.008	*0.015*	0.012	*0.038*	*0.000*
12	0.007	0.008	0.007	0.019	0.071	0.188	0.039	0.008	*0.015*	0.013	*0.038*	*0.000*
13	0.009	0.008	0.008	0.022	0.060	0.118	0.043	*0.010*	*0.031*	0.014	*0.038*	0.009
14	0.010	0.006	0.008	0.018	0.056	0.108	0.036	*0.013*	*0.032*	0.014	*0.038*	*0.028*
15	0.012	0.007	0.009	0.014	0.056	0.089	0.025	*0.011*	*0.014*	0.014	*0.038*	*0.027*
16	0.018	0.009	0.009	0.014	0.055	0.060	0.026	*0.012*	*0.012*	0.014	*0.038*	*0.031*
17	0.018	0.011	0.008	0.063	0.054	0.053	0.026	*0.012*	*0.013*	0.014	*0.049*	0.038
18	0.016	0.008	0.008	0.474	0.051	0.051	0.028	*0.015*	*0.012*	0.016	0.062	0.027
19	0.016	0.008	0.008	*5.374*	0.051	0.050	0.032	*0.017*	*0.014*	0.016	0.058	0.022
20	0.015	0.008	0.009	2.733	0.054	0.051	0.037	*0.014*	*0.012*	0.016	0.046	0.027
21	0.014	0.007	0.009	0.479	0.062	0.054	0.067	*0.014*	*0.012*	0.045	0.045	0.029
22	0.014	0.007	0.009	0.173	0.072	0.048	0.021	*0.014*	*0.013*	0.027	0.042	0.026
23	0.013	0.008	0.009	0.113	0.084	0.044	0.016	*0.015*	*0.011*	0.020	0.036	0.023
24	0.009	0.009	0.008	0.091	0.215	0.082	0.013	*0.016*	*0.013*	0.020	0.029	0.021
25	0.006	0.008	0.008	0.083	0.139	0.074	0.012	*0.017*	*0.012*	0.017	*0.030*	0.021
26	0.003	0.011	0.008	0.081	0.591	0.090	0.019	*0.016*	*0.009*	0.019	0.031	0.022
27	0.000	0.007	0.009	0.257	0.173	0.079	0.018	*0.014*	0.006	0.019	0.032	0.021
28	0.000	0.006	0.018	0.183	0.126	0.051	0.022	*0.009*	0.006	0.033	0.032	0.018
29	0.000	NA	0.082	0.116	0.115	0.050	0.026	*0.008*	0.006	0.032	0.029	0.019
30	0.004	NA	0.060	0.094	0.118	0.046	0.046	*0.011*	0.007	0.042	*0.029*	0.022
31	0.009	NA	0.034	NA	0.123	NA	0.026	*0.014*	NA	0.098	NA	0.020

Flow Rate

Average	0.010	0.008	0.013	0.356	0.104	0.117	0.038	0.014	0.014	0.020	0.049	0.020
Maximum	0.018	0.011	0.082	5.374	0.591	0.673	0.097	0.033	0.032	0.098	0.194	0.038
Minimum	0.000	0.006	0.007	0.014	0.051	0.044	0.012	0.008	0.006	0.008	0.029	0.000

Discharge

Cubic Feet	27178	20284	36137	923810	279131	302834	101168	36948	35050	54723	127719	53687
Gallons	203304	151736	270322	6910579	2088047	2265358	756788	276391	262195	409360	955402	401608
Acre-Feet	0.62	0.47	0.83	21.21	6.41	6.95	2.32	0.85	0.80	1.26	2.93	1.23

Annual Summaries for CY09

Ft^3/Sec	0.063
GPM	28.4
Cubic Feet	1998670
Gallons	14951089
Acre-Feet	45.88

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.6 GS11: North Walnut Creek at Pond A-4 Outlet

Table A–6. CY 2009 Discharge Summary for GS11: North Walnut Creek at Pond A-4 Outlet

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.000	0.000	0.000	0.000	0.000	0.935	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.991	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.881	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.717	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.235	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.579
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.472
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.441
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.385
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.983
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.375
18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.259
19	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.249
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.981
21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.367
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	0.598	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.000	1.213	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	1.407	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.000	1.387	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27	0.000	0.000	0.000	0.000	1.321	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	0.000	1.208	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29	0.000	NA	0.000	0.000	1.111	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	NA	0.000	0.000	1.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	0.000	NA	0.000	NA	1.016	NA	0.000	0.000	NA	0.000	NA	0.000

Flow Rate

Average	0.000	0.000	0.000	0.000	0.333	0.125	0.000	0.000	0.000	0.000	0.000	0.358
Maximum	0.000	0.000	0.000	0.000	1.407	0.991	0.000	0.000	0.000	0.000	0.000	1.472
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Discharge

Cubic Feet	0	0	0	0	891065	324794	0	0	0	0	0	958271
Gallons	0	0	0	0	6665626	2429624	0	0	0	0	0	7168366
Acre-Feet	0.00	0.00	0.00	0.00	20.46	7.46	0.00	0.00	0.00	0.00	0.00	22.00

Annual Summaries for CY09

Ft^3/Sec	0.069
GPM	30.9
Cubic Feet	2174129
Gallons	16263617
Acre-Feet	49.91

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.7 GS12: North Walnut Creek at Pond A-3 Outlet

Table A–7. CY 2009 Discharge Summary for GS12: North Walnut Creek at Pond A-3 Outlet

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.729	0.000	0.000	0.000	0.000	0.138	0.000
7	0.000	0.000	0.000	0.000	0.000	1.049	0.000	0.000	0.000	0.000	0.205	0.000
8	0.000	0.000	0.000	0.000	0.000	1.114	0.000	0.000	0.000	0.000	0.181	0.000
9	0.000	0.000	0.000	0.000	0.000	0.877	0.000	0.000	0.000	0.000	0.635	0.000
10	0.000	0.000	0.000	0.000	0.000	0.926	0.000	0.000	0.000	0.000	0.990	0.000
11	0.000	0.000	0.000	0.000	0.000	0.802	0.000	0.000	0.000	0.000	0.448	0.000
12	0.000	0.000	0.000	0.000	0.000	0.651	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.561	0.000	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.481	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.466	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.775	0.000	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.740	0.000	0.000	0.000	0.000	0.000	0.000
18	0.000	0.000	0.000	0.000	0.000	0.587	0.000	0.000	0.000	0.000	0.445	0.000
19	0.000	0.000	0.000	0.000	0.000	0.337	0.000	0.000	0.000	0.000	0.346	0.000
20	0.000	0.000	0.000	1.729	0.000	0.347	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	4.077	0.000	0.365	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	3.400	0.000	0.469	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	1.946	0.000	0.322	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	1.401	0.000	0.315	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	1.225	0.000	0.585	0.000	0.000	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	1.199	0.000	0.802	0.000	0.000	0.000	0.000	0.000	0.000
27	0.000	0.000	0.000	1.076	0.000	0.757	0.000	0.000	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	1.057	0.000	0.764	0.000	0.000	0.000	0.000	0.000	0.000
29	0.000	NA	0.000	1.505	0.000	0.281	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	NA	0.000	0.985	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	0.000	NA	0.000	NA	0.000	NA	0.000	0.000	NA	0.000	NA	0.000

Flow Rate

Average	0.000	0.000	0.000	0.653	0.000	0.504	0.000	0.000	0.000	0.000	0.113	0.000
Maximum	0.000	0.000	0.000	4.077	0.000	1.114	0.000	0.000	0.000	0.000	0.990	0.000
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Discharge

Cubic Feet	0	0	0	1693449	0	1305107	0	0	0	0	292645	0
Gallons	0	0	0	12667877	0	9762882	0	0	0	0	2189141	0
Acre-Feet	0.00	0.00	0.00	38.88	0.00	29.96	0.00	0.00	0.00	0.00	6.72	0.00

Annual Summaries for CY09

Ft^3/Sec	0.104
GPM	46.8
Cubic Feet	3291202
Gallons	24619899
Acre-Feet	75.56

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.8 GS13: North Walnut Creek above Pond A-1

Table A–8. CY 2009 Discharge Summary for GS13: North Walnut Creek above Pond Pond A-1

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	*0.047*	0.035	0.036	0.098	0.282	0.088	0.038	0.052	0.000	0.000	0.491	*0.066*
2	0.052	0.036	0.037	0.133	0.280	*1.569*	0.034	0.041	0.000	0.000	0.236	*0.067*
3	0.055	0.035	0.036	0.194	0.310	*0.815*	0.049	0.033	0.000	0.000	0.163	*0.065*
4	0.043	0.035	0.036	0.373	0.351	0.578	0.115	0.031	0.000	0.000	0.146	*0.059*
5	0.036	0.037	0.036	0.155	0.243	0.363	0.092	0.030	0.000	0.000	0.113	*0.061*
6	0.034	0.039	0.035	0.156	0.186	0.244	0.122	0.033	0.000	0.000	0.099	*0.067*
7	0.032	0.037	0.035	0.093	0.153	0.194	0.061	0.039	0.000	0.000	0.082	*0.069*
8	0.039	0.036	0.036	0.065	0.130	0.196	0.044	0.035	0.000	0.000	0.070	*0.069*
9	0.052	0.038	0.032	0.048	0.114	0.173	0.034	0.021	0.000	0.000	0.063	*0.065*
10	0.046	0.037	0.032	0.040	0.185	0.177	0.030	0.020	0.000	0.000	0.061	*0.061*
11	0.040	0.036	0.030	0.039	0.239	0.255	0.027	0.019	0.000	0.000	0.060	0.062
12	0.037	0.035	0.030	0.039	0.172	*0.528*	0.027	0.015	0.000	0.000	0.061	*0.073*
13	0.037	0.040	0.030	0.047	0.119	0.273	0.027	0.014	0.000	0.000	0.058	*0.086*
14	0.039	0.040	0.029	0.046	0.090	0.240	0.026	0.015	0.000	0.000	0.070	*0.092*
15	0.045	0.039	0.029	0.039	0.080	0.185	0.026	0.015	0.000	0.000	0.110	0.077
16	0.058	0.039	0.030	0.045	0.075	0.167	0.025	0.016	0.000	0.000	0.196	0.091
17	0.078	0.041	0.030	0.383	0.072	0.135	0.025	0.015	0.000	0.000	0.345	0.149
18	0.069	0.042	0.028	2.090	0.063	0.112	0.026	0.017	0.000	0.000	0.298	0.119
19	0.064	0.038	0.028	*7.411*	0.054	0.093	0.029	0.017	0.000	0.000	0.200	0.084
20	0.070	0.037	0.028	*4.819*	0.044	0.085	0.033	0.013	0.000	0.000	0.147	0.080
21	0.062	0.036	0.028	1.751	0.042	0.097	*0.180*	0.008	0.000	0.005	0.135	0.106
22	0.058	0.036	0.028	0.824	0.057	0.077	*0.069*	0.001	0.000	*0.012*	0.130	0.100
23	0.054	0.038	0.028	0.469	0.071	0.066	*0.055*	0.000	0.000	*0.033*	0.098	0.090
24	0.051	0.044	0.028	0.360	0.316	*0.225*	*0.038*	0.000	0.000	*0.039*	0.076	0.097
25	0.045	0.046	0.028	0.309	0.184	*0.233*	*0.033*	0.000	0.000	*0.035*	0.073	0.088
26	0.040	0.043	0.032	0.290	*1.374*	0.333	*0.032*	0.000	0.000	*0.039*	0.080	0.088
27	*0.035*	0.040	0.050	0.997	0.452	0.247	*0.028*	0.000	0.000	0.048	0.085	0.087
28	*0.030*	0.037	0.120	0.853	0.215	0.103	*0.027*	0.000	0.000	0.103	0.077	0.081
29	*0.028*	NA	0.652	0.579	0.139	0.068	*0.028*	0.000	0.000	0.197	0.072	0.084
30	0.028	NA	0.292	0.336	0.106	0.048	*0.073*	0.000	0.000	0.408	0.066	0.089
31	0.031	NA	0.143	NA	0.093	NA	*0.111*	0.000	NA	0.700	NA	0.078

Flow Rate

Average	0.046	0.038	0.067	0.769	0.203	0.266	0.050	0.016	0.000	0.052	0.132	0.082
Maximum	0.078	0.046	0.652	7.411	1.374	1.569	0.180	0.052	0.000	0.700	0.491	0.149
Minimum	0.028	0.035	0.028	0.039	0.042	0.048	0.025	0.000	0.000	0.000	0.058	0.059

Discharge

Cubic Feet	124120	92624	179110	1994202	543684	688277	135055	43221	28	139691	342129	220066
Gallons	928481	692875	1339833	14917671	4067036	5148671	1010282	323316	208	1044964	2559305	1646209
Acre-Feet	2.85	2.13	4.11	45.78	12.48	15.80	3.10	0.99	0.00	3.21	7.85	5.05

Annual Summaries for CY09

Ft^3/Sec	0.143
GPM	64.1
Cubic Feet	4502207
Gallons	33678849
Acre-Feet	103.36

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.9 GS31: Woman Creek at Pond C-2 Outlet

Table A–9. CY 2009 Discharge Summary for GS31: Woman Creek at Pond C-2 Outlet

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.000	0.000	0.000	0.000	0.000	0.657	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.917	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	1.022	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.434	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.000	0.547	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27	0.000	0.000	0.000	0.000	0.989	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	0.000	0.755	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29	0.000	NA	0.000	0.000	0.312	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	NA	0.000	0.000	0.933	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	0.000	NA	0.000	NA	0.924	NA	0.000	0.000	NA	0.000	NA	0.000

Flow Rate

Average	0.000	0.000	0.000	0.000	0.144	0.101	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	0.000	0.000	0.000	0.000	0.989	1.022	0.000	0.000	0.000	0.000	0.000	0.000
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Discharge

Cubic Feet	0	0	0	0	385231	261868	0	0	0	0	0	0
Gallons	0	0	0	0	2881731	1958906	0	0	0	0	0	0
Acre-Feet	0.00	0.00	0.00	0.00	8.84	6.01	0.00	0.00	0.00	0.00	0.00	0.00

Annual Summaries for CY09

Ft^3/Sec	0.021
GPM	9.2
Cubic Feet	647099
Gallons	4840637
Acre-Feet	14.86

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.10 GS33: No Name Gulch at Walnut Creek

Table A–10. CY 2009 Discharge Summary for GS33: No Name Gulch at Walnut Creek

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.000	0.000	0.000	*0.000*	0.084	0.017	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	*0.001*	0.096	0.671	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	*0.028*	0.104	0.249	0.000	0.000	0.000	0.000	0.067	0.000
4	0.000	0.000	0.000	*0.104*	0.104	0.133	0.010	0.000	0.000	0.000	0.059	0.000
5	0.000	0.000	0.000	*0.062*	0.053	0.085	0.006	0.000	0.000	0.000	0.045	0.000
6	0.000	0.000	0.000	*0.064*	0.057	0.058	0.004	0.000	0.000	0.000	0.048	0.000
7	0.000	0.000	0.000	*0.040*	0.072	0.038	0.000	0.000	0.000	0.000	0.030	0.000
8	0.000	0.000	0.000	*0.006*	0.020	0.048	0.000	0.000	0.000	0.000	*0.001*	0.000
9	0.000	0.000	0.000	*0.000*	0.014	0.034	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	*0.000*	0.047	0.037	0.000	0.000	0.000	0.000	0.000	0.000
11	0.000	0.000	0.000	*0.000*	0.088	0.087	0.000	0.000	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	*0.000*	0.037	0.181	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	*0.000*	0.010	0.080	0.000	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.000	*0.000*	0.003	0.067	0.000	0.000	0.000	0.000	0.002	*0.011*
15	0.000	0.000	0.000	*0.000*	0.000	0.037	0.000	0.000	0.000	0.000	0.000	*0.008*
16	0.000	0.000	0.000	*0.000*	0.000	0.025	0.000	0.000	0.000	0.000	*0.009*	0.017
17	0.000	0.000	0.000	*0.161*	0.000	0.020	0.000	0.000	0.000	0.000	*0.059*	*0.061*
18	0.000	0.000	0.000	*1.083*	0.000	0.018	0.000	0.000	0.000	0.000	0.105	WR
19	0.000	0.000	0.000	*2.320*	0.000	0.010	0.000	0.000	0.000	0.000	0.093	WR
20	0.000	0.000	0.000	*2.205*	0.000	0.015	0.000	0.000	0.000	0.000	*0.069*	WR
21	0.000	0.000	0.000	*0.625*	0.000	0.009	0.000	0.000	0.000	0.000	*0.073*	0.031
22	0.000	0.000	0.000	*0.241*	0.000	0.008	0.000	0.000	0.000	0.000	0.069	*0.028*
23	0.000	0.000	0.000	*0.148*	0.001	0.000	0.000	0.000	0.000	0.000	*0.049*	WR
24	0.000	0.000	0.000	*0.097*	0.022	0.009	0.000	0.000	0.000	0.000	*0.030*	WR
25	0.000	0.000	0.000	*0.087*	0.020	0.017	0.000	0.000	0.000	0.000	*0.027*	WR
26	0.000	0.000	0.000	*0.086*	0.472	0.028	0.000	0.000	0.000	0.000	*0.033*	0.023
27	0.000	0.000	0.000	*0.391*	0.185	0.055	0.000	0.000	0.000	0.000	*0.034*	WR
28	0.000	0.000	0.000	*0.260*	0.127	0.008	0.000	0.000	0.000	*0.000*	*0.023*	WR
29	0.000	NA	0.000	0.143	0.030	0.006	0.000	0.000	0.000	*0.001*	*0.009*	WR
30	0.000	NA	0.000	0.093	0.018	0.000	0.000	0.000	0.000	0.000	*0.000*	WR
31	0.000	NA	*0.000*	NA	0.014	NA	0.000	0.000	NA	0.000	NA	WR

Partial Data

Flow Rate

Average	0.000	0.000	0.000	0.275	0.054	0.068	0.001	0.000	0.000	0.000	0.031	0.009
Maximum	0.000	0.000	0.000	2.320	0.472	0.671	0.010	0.000	0.000	0.001	0.105	0.061
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Partial Data

Discharge

Cubic Feet	0	0	0	712222	145099	177117	1706	0	0	77	80617	15417
Gallons	0	0	0	5327794	1085419	1324925	12760	0	0	573	603061	115329
Acre-Feet	0.00	0.00	0.00	16.35	3.33	4.07	0.04	0.00	0.00	0.00	1.85	0.35

Partial Data

Annual Summaries for CY09

Ft^3/Sec	0.037
GPM	16.6
Cubic Feet	1132255
Gallons	8469859
Acre-Feet	25.99

Partial Data

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.11 GS51: Ditch South of 903 Pad

Table A–11. CY 2009 Discharge Summary for GS51: Ditch South of 903 Pad

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.034	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	*0.001*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	*0.000*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000	0.000
11	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	*0.000*	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	*0.000*	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000
18	0.000	0.000	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.107	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	*0.080*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000
24	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000
26	0.000	0.000	0.000	0.000	0.025	0.004	0.000	0.000	0.000	*0.000*	0.000	0.000
27	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29	0.000	NA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	NA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000
31	0.000	NA	0.000	NA	0.000	NA	0.000	0.000	NA	0.000	NA	0.000

Flow Rate

Average	0.000	0.000	0.000	0.007	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	0.000	0.000	0.000	0.107	0.025	0.034	0.000	0.000	0.000	0.000	0.000	0.000
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Discharge

Cubic Feet	0	0	46	18202	2422	3593	6	0	0	0	0	0
Gallons	0	0	347	136161	18117	26878	42	0	0	0	0	0
Acre-Feet	0.00	0.00	0.00	0.42	0.06	0.08	0.00	0.00	0.00	0.00	0.00	0.00

Annual Summaries for CY09

Ft^3/Sec	0.001
GPM	0.3
Cubic Feet	24269
Gallons	181546
Acre-Feet	0.56

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.12 GS59: Woman Creek Upstream of Antelope Springs Confluence

Table A–12. CY 2009 Discharge Summary for GS59: Woman Creek Upstream of Antelope Springs Confluence

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	*0.096*	WR	0.082	0.214	0.571	0.163	0.057	0.040	0.000	0.000	0.900	0.277
2	0.099	WR	0.064	0.371	0.598	3.044	0.065	0.030	0.000	0.000	0.651	0.283
3	0.065	WR	0.059	0.373	0.632	1.103	0.064	0.024	0.000	0.000	0.469	WR
4	WR	0.106	0.053	0.469	0.621	0.488	0.077	0.023	0.000	0.000	0.283	WR
5	WR	0.100	0.056	0.377	0.478	0.315	0.095	0.022	0.000	0.014	0.212	WR
6	WR	0.092	0.058	0.446	0.433	0.238	0.080	0.023	0.000	0.036	0.179	WR
7	0.102	0.087	0.064	0.270	0.399	0.249	0.063	0.024	0.000	0.035	0.148	WR
8	0.084	*0.090*	0.060	0.199	0.390	0.260	0.047	0.022	0.000	0.050	0.134	WR
9	0.068	0.085	0.062	0.163	0.395	0.271	0.044	0.021	0.000	0.049	0.123	WR
10	0.118	0.078	0.067	0.158	0.553	0.341	0.041	0.024	0.000	0.057	0.246	WR
11	0.100	*0.119*	*0.067*	0.161	0.528	0.443	0.039	0.025	0.000	0.060	0.242	WR
12	WR	0.107	0.072	0.192	0.391	0.651	0.050	0.023	0.000	0.062	0.251	WR
13	WR	0.079	0.069	0.187	0.348	0.469	0.053	0.025	0.000	0.064	0.265	WR
14	0.072	WR	0.070	0.164	0.339	0.388	0.040	0.017	0.001	0.072	0.304	WR
15	0.084	WR	0.066	0.161	0.322	0.351	0.035	0.004	0.000	0.074	0.332	WR
16	0.104	WR	0.062	0.327	0.306	0.322	0.039	0.001	0.000	0.077	0.357	WR
17	0.114	0.091	0.057	0.701	0.274	0.260	0.052	0.000	0.000	0.078	0.452	0.366
18	0.106	0.064	0.058	2.523	0.234	0.184	0.067	0.000	0.000	0.069	0.502	0.302
19	0.100	0.084	0.058	7.215	0.199	0.157	0.070	0.001	0.000	0.071	0.441	0.280
20	0.097	0.083	0.060	*13.689*	0.184	0.141	0.065	0.000	0.000	0.080	0.414	0.304
21	0.104	0.112	0.056	2.654	0.196	0.148	0.051	0.000	0.004	0.133	0.427	0.310
22	0.113	0.097	0.052	1.065	0.189	0.123	0.027	0.000	0.008	0.108	0.404	0.292
23	0.094	0.083	0.061	0.744	0.190	0.121	0.024	0.000	0.008	0.121	0.338	0.295
24	0.082	0.073	0.056	0.580	0.450	0.429	0.022	0.000	0.008	0.181	0.300	0.315
25	WR	0.067	0.057	0.562	0.422	0.207	0.022	0.000	0.010	0.219	0.312	0.296
26	WR	0.063	*0.080*	0.542	1.690	0.404	0.025	0.000	0.007	0.231	0.338	0.313
27	WR	0.062	0.076	1.911	0.444	0.199	0.030	0.000	0.000	0.233	0.325	WR
28	WR	0.083	0.166	1.100	0.240	0.102	0.038	0.000	0.001	0.299	0.284	WR
29	WR	NA	0.631	0.662	0.177	0.078	0.053	0.000	0.000	0.289	0.275	WR
30	WR	NA	0.412	0.562	0.158	0.066	0.122	0.000	0.000	0.334	0.271	WR
31	WR	NA	0.305	NA	0.161	NA	0.057	0.000	NA	0.695	NA	WR
	Partial Data	Partial Data										Partial Data

Flow Rate

Average	0.095	0.087	0.104	1.291	0.404	0.390	0.052	0.011	0.002	0.122	0.339	0.303
Maximum	0.118	0.119	0.631	13.689	1.690	3.044	0.122	0.040	0.010	0.695	0.900	0.366
Minimum	0.065	0.062	0.052	0.158	0.158	0.066	0.022	0.000	0.000	0.000	0.123	0.277
	Partial Data	Partial Data										Partial Data

Discharge

Cubic Feet	155594	164509	277727	3347514	1081146	1012131	139223	30373	4193	327692	879636	313875
Gallons	1163927	1230612	2077542	25041149	8087536	7571263	1041464	227209	31364	2451305	6580131	2347948
Acre-Feet	3.57	3.78	6.38	76.85	24.82	23.24	3.20	0.70	0.10	7.52	20.19	7.21
	Partial Data	Partial Data										Partial Data

Annual Summaries for CY09

Ft^3/Sec	0.273
GPM	122.5
Cubic Feet	7733613
Gallons	57851450
Acre-Feet	177.54
	Partial Data

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.13 SW018: Functional Channel 2 at FC-2 Wetland

Table A–13. CY 2009 Discharge Summary for SW018: North Walnut Creek Tributary East of B371

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.006	0.005	*0.004*	0.011	0.042	0.023	0.012	0.012	0.007	0.005	0.055	0.014
2	0.007	0.005	0.004	0.015	0.042	0.124	0.014	0.009	0.006	0.005	0.029	WR
3	*0.006*	0.005	0.004	0.016	0.042	0.059	0.014	0.008	0.006	0.005	0.027	WR
4	*0.006*	0.005	0.004	0.021	0.040	0.044	0.018	0.007	0.006	0.004	*0.019*	WR
5	*0.005*	0.005	0.004	0.014	0.034	0.039	0.019	0.007	0.007	0.009	*0.017*	WR
6	*0.005*	0.005	0.004	0.014	0.031	0.034	0.016	0.010	0.008	0.010	0.015	WR
7	*0.006*	0.005	0.004	0.011	0.029	0.034	0.013	0.007	0.007	0.008	0.013	WR
8	0.006	0.005	0.005	0.009	0.028	0.032	0.011	0.006	0.007	0.009	0.012	WR
9	0.005	0.005	0.005	0.008	0.027	0.031	0.010	0.006	0.009	0.010	0.011	WR
10	*0.005*	0.005	*0.004*	0.007	0.033	0.030	0.010	0.006	0.008	0.011	0.011	WR
11	0.005	0.006	0.004	0.009	0.034	0.037	0.011	0.006	0.007	0.010	0.011	WR
12	*0.006*	*0.005*	*0.004*	0.009	0.028	0.042	0.012	0.005	0.012	0.009	0.011	WR
13	0.006	0.005	0.004	0.007	0.024	0.033	0.015	0.006	0.015	0.008	0.011	0.012
14	0.006	*0.005*	0.004	0.007	0.023	0.030	0.013	0.007	0.007	0.009	0.012	0.012
15	0.005	*0.005*	0.004	0.007	0.022	0.028	0.009	0.007	0.007	0.009	0.013	0.011
16	0.007	*0.005*	0.004	0.012	0.021	0.024	0.007	0.006	0.007	0.009	0.015	0.013
17	0.007	0.005	0.004	0.035	0.020	0.023	0.006	0.007	0.006	0.010	0.019	0.016
18	0.007	0.004	0.004	0.161	0.019	0.021	0.007	0.008	0.006	0.010	0.022	0.015
19	0.007	0.004	0.004	*0.858*	0.017	0.020	0.007	0.006	0.006	0.009	0.020	0.014
20	0.006	0.005	0.004	0.544	0.016	0.021	0.010	0.006	0.004	0.010	0.018	0.013
21	0.006	*0.004*	0.004	0.148	0.017	0.019	0.013	0.005	0.007	0.019	0.019	0.014
22	0.006	*0.004*	0.004	0.082	0.016	0.017	0.009	0.005	*0.009*	0.013	0.018	0.013
23	*0.005*	0.005	*0.005*	0.060	0.019	0.017	0.007	0.005	*0.009*	0.012	0.016	0.012
24	*0.005*	0.004	*0.004*	0.049	0.035	0.025	0.006	0.005	0.008	0.012	0.014	*0.011*
25	WR	0.005	*0.004*	0.044	0.032	0.023	0.009	0.007	0.008	0.014	0.014	*0.010*
26	WR	0.004	*0.006*	0.042	0.082	0.030	0.009	0.007	0.006	0.014	0.015	*0.011*
27	WR	0.004	0.005	0.082	0.030	0.021	0.009	0.006	0.005	0.011	0.015	*0.010*
28	WR	*0.003*	0.009	0.057	0.027	0.016	0.016	0.005	0.007	0.014	0.015	*0.009*
29	WR	NA	0.027	0.048	0.023	0.014	0.017	0.006	0.007	0.013	0.014	*0.011*
30	WR	NA	0.019	0.043	0.022	0.013	0.017	0.009	0.006	0.017	0.014	0.010
31	WR	NA	0.015	NA	0.021	NA	0.016	0.008	NA	0.034	NA	WR
	Partial Data											Partial Data

Flow Rate

Average	0.006	0.005	0.006	0.081	0.029	0.031	0.012	0.007	0.007	0.011	0.017	0.012
Maximum	0.007	0.006	0.027	0.858	0.082	0.124	0.019	0.012	0.015	0.034	0.055	0.016
Minimum	0.005	0.003	0.004	0.007	0.016	0.013	0.006	0.005	0.004	0.004	0.011	0.009
	Partial Data											Partial Data

Discharge

Cubic Feet	12291	11605	16114	210068	77430	79935	31221	18346	18934	29421	44494	20068
Gallons	91946	86808	120541	1571420	579214	597959	233550	137239	141638	220086	332836	150117
Acre-Feet	0.28	0.27	0.37	4.82	1.78	1.84	0.72	0.42	0.43	0.68	1.02	0.46
	Partial Data											Partial Data

Annual Summaries for CY09

Ft^3/Sec	0.019
GPM	8.6
Cubic Feet	569928
Gallons	4263354
Acre-Feet	13.08
	Partial Data

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.14 SW027: South Interceptor Ditch at Pond C-2

Table A–14. CY 2009 Discharge Summary for SW027: South Interceptor Ditch at Pond C-2

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	*0.000*	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000	*0.000*	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	*0.000*	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.000	0.000	*0.000*	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	*0.000*	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	*0.000*	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.000	0.000	*0.000*	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	0.000	0.000	0.000	0.005	*0.000*	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	1.114	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.958	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.084	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29	0.000	NA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	NA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	0.000	NA	0.000	NA	0.000	NA	0.000	0.000	NA	0.000	NA	0.000

Flow Rate

Average	0.000	0.000	0.000	0.073	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	0.000	0.000	0.000	1.114	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Discharge

Cubic Feet	0	0	0	189204	163	105	0	0	0	0	0	0
Gallons	0	0	0	1415345	1216	782	0	0	0	0	0	0
Acre-Feet	0.00	0.00	0.00	4.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual Summaries for CY09

Ft^3/Sec	0.006
GPM	2.7
Cubic Feet	189471
Gallons	1417342
Acre-Feet	4.35

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.1.15 SW093: North Walnut Creek 1,300 feet Upstream of A-1 Bypass

Table A–15. CY 2009 Discharge Summary for SW093: North Walnut Creek Upstream of A-1 Bypass

Calendar Year 2009: Daily Mean Discharge Values in Cubic Feet per Second

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	*0.014*	0.007	*0.007*	0.044	0.223	0.063	0.030	0.038	0.006	0.008	0.374	0.050
2	*0.016*	0.006	0.006	0.084	0.220	1.444	0.029	0.029	0.006	0.008	0.154	0.050
3	*0.019*	0.005	0.006	0.111	0.246	0.694	0.047	0.021	0.007	0.009	0.099	*0.053*
4	*0.011*	0.006	0.006	0.316	0.283	0.477	0.095	0.018	0.008	0.009	0.094	*0.048*
5	*0.008*	0.007	0.006	0.110	0.180	0.276	0.084	0.016	0.006	0.013	0.067	*0.047*
6	*0.006*	0.008	0.006	0.109	0.131	0.178	0.108	0.016	0.008	0.008	0.059	*0.049*
7	*0.005*	0.006	0.005	0.061	0.103	0.137	0.054	0.011	0.009	0.007	0.048	*0.047*
8	*0.010*	0.006	0.005	0.035	0.084	0.137	0.048	0.009	0.009	0.008	0.043	*0.045*
9	0.016	0.008	0.005	0.023	0.069	0.122	0.039	0.008	0.009	0.011	0.038	*0.039*
10	0.012	*0.005*	*0.005*	0.020	0.123	0.132	0.030	0.007	0.009	0.013	0.040	*0.034*
11	0.009	*0.006*	*0.005*	0.019	0.166	0.207	0.029	0.006	0.009	0.014	0.037	*0.033*
12	*0.008*	*0.010*	*0.006*	0.020	0.108	0.461	0.022	0.007	0.008	0.014	0.037	*0.038*
13	*0.007*	0.009	*0.005*	0.030	0.068	0.218	0.018	*0.008*	0.011	0.013	0.039	*0.044*
14	0.008	*0.009*	*0.006*	0.023	0.054	0.195	0.013	*0.007*	*0.009*	0.013	0.048	*0.045*
15	0.013	*0.007*	0.006	0.019	0.049	0.146	0.011	*0.007*	*0.005*	0.013	0.082	*0.032*
16	0.017	*0.011*	0.006	0.024	0.046	0.133	0.010	*0.007*	*0.005*	0.013	0.168	*0.043*
17	0.027	0.013	0.006	0.313	0.046	0.105	0.013	*0.006*	*0.005*	0.014	0.292	*0.080*
18	0.020	0.012	0.006	1.915	0.041	0.090	0.014	*0.004*	*0.005*	0.014	0.226	*0.049*
19	0.018	0.010	0.006	7.055	0.035	0.076	0.022	*0.004*	*0.005*	0.013	0.139	*0.029*
20	0.019	0.011	0.006	4.493	0.026	0.067	0.026	*0.004*	*0.005*	0.013	0.096	0.031
21	0.015	0.013	0.006	1.625	0.024	0.083	0.170	*0.005*	*0.007*	0.028	0.090	0.047
22	0.015	0.010	0.006	0.775	0.035	0.059	0.027	*0.006*	*0.006*	0.029	0.087	0.042
23	0.016	0.011	0.007	0.443	0.049	0.037	0.018	*0.005*	*0.007*	0.021	0.065	0.038
24	0.011	0.013	0.006	0.325	0.244	0.221	0.013	*0.005*	*0.007*	0.017	0.049	*0.041*
25	0.011	0.012	0.006	0.259	0.136	0.173	0.012	*0.005*	0.008	0.015	0.049	*0.035*
26	*0.012*	0.010	0.013	0.239	1.272	0.307	0.017	0.005	0.007	0.021	0.055	0.035
27	*0.009*	0.008	0.034	0.907	0.379	0.193	0.019	0.004	0.005	0.026	0.059	0.035
28	*0.007*	0.009	0.061	0.743	0.169	0.081	0.017	0.004	0.006	0.075	0.055	0.031
29	0.007	NA	0.548	0.488	0.104	0.052	0.019	0.005	0.007	0.164	0.054	0.032
30	0.005	NA	0.178	0.270	0.077	0.037	0.067	0.006	0.007	0.362	0.048	0.036
31	0.006	NA	0.071	NA	0.067	NA	0.086	0.006	NA	0.587	NA	0.029

Flow Rate

Average	0.012	0.009	0.034	0.697	0.157	0.220	0.039	0.009	0.007	0.051	0.093	0.041
Maximum	0.027	0.013	0.548	7.055	1.272	1.444	0.170	0.038	0.011	0.587	0.374	0.080
Minimum	0.005	0.005	0.005	0.019	0.024	0.037	0.010	0.004	0.005	0.007	0.037	0.029

Discharge

Cubic Feet	32638	21273	90950	1805603	419482	570319	104235	24882	18016	135827	241103	111095
Gallons	244150	159136	680353	13506849	3137946	4266285	779731	186128	134766	1016055	1803578	831048
Acre-Feet	0.75	0.49	2.09	41.45	9.63	13.09	2.39	0.57	0.41	3.12	5.53	2.55

Annual Summaries for CY09

Ft^3/Sec	0.113
GPM	50.9
Cubic Feet	3575423
Gallons	26746026
Acre-Feet	82.08

KEY: WR: No data or unacceptable data due to winter icing conditions
BD: Bad data due to equipment failures
ITALICS: Italic values contain data estimated from field observations and electronic record at adjacent or comparable gages

A.2 Precipitation Data

This section includes total daily precipitation tables and hyetographs by precipitation gage and calendar year.

A.2.1 PG58: Gaging Station GS01

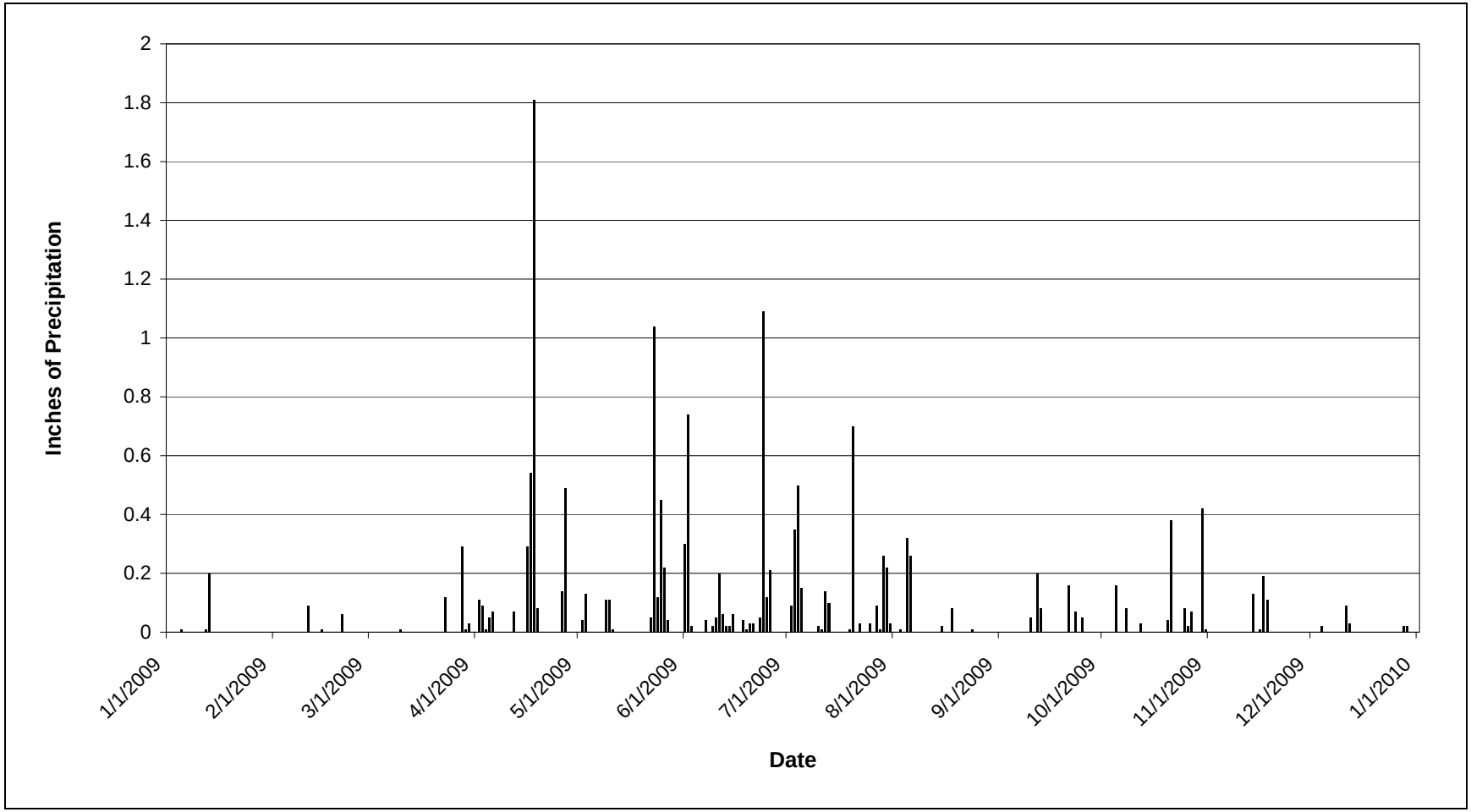

Figure A−1. CY 2009 Annual Hyetograph at PG58: Gaging Station GS01

Table A–16. CY 2009 Precipitation Summary for PG58: Gaging Station GS01

Calendar Year 2009: Daily Total Precipitation Values in Inches

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.11	0.04	0.74	0.09	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.09	0.13	0.02	0.35	0.01	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.01	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.02
5	0.01	0.00	0.00	0.05	0.00	0.00	0.15	0.32	0.00	0.16	0.00	0.00
6	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00
9	0.00	0.00	0.00	0.00	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.01	0.00	0.11	0.05	0.02	0.00	0.05	0.00	0.00	0.00
11	0.00	0.09	0.00	0.00	0.01	0.20	0.01	0.00	0.00	0.00	0.00	0.09
12	0.01	0.00	0.00	0.07	0.00	0.06	0.14	0.00	0.20	0.03	0.00	0.03
13	0.20	0.00	0.00	0.00	0.00	0.02	0.10	0.00	0.08	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.13	0.00
15	0.00	0.01	0.00	0.00	0.00	0.06	0.00	0.02	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
17	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00
18	0.00	0.00	0.00	1.81	0.00	0.04	0.00	0.08	0.00	0.00	0.11	0.00
19	0.00	0.00	0.00	0.08	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.03	0.70	0.00	0.00	0.04	0.00	0.00
21	0.00	0.06	0.00	0.00	0.00	0.03	0.00	0.00	0.16	0.38	0.00	0.00
22	0.00	0.00	0.00	0.00	0.05	0.00	0.03	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.12	0.00	1.04	0.05	0.00	0.00	0.07	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.12	1.09	0.00	0.01	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.45	0.12	0.03	0.00	0.05	0.08	0.00	0.00
26	0.00	0.00	0.00	0.14	0.22	0.21	0.00	0.00	0.00	0.02	0.00	0.00
27	0.00	0.00	0.00	0.49	0.04	0.00	0.09	0.00	0.00	0.07	0.00	0.00
28	0.00	0.00	0.29	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02
29	0.00	NA	0.01	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.02
30	0.00	NA	0.03	0.00	0.00	0.00	0.22	0.00	0.00	0.42	0.00	0.00
31	0.00	NA	0.00	NA	0.00	NA	0.03	0.00	NA	0.01	NA	0.00

Precipitation

Monthly Total	0.22	0.16	0.46	3.75	2.32	3.11	2.74	0.70	0.61	1.29	0.44	0.18
Daily Maximum	0.20	0.09	0.29	1.81	1.04	1.09	0.70	0.32	0.20	0.42	0.19	0.09

Annual Summaries for CY09

KEY: No Data: Bad or missing data due to equipment failures or discontinued operation

Total Inches 15.98

A.2.2 PG59: Gaging Station GS03

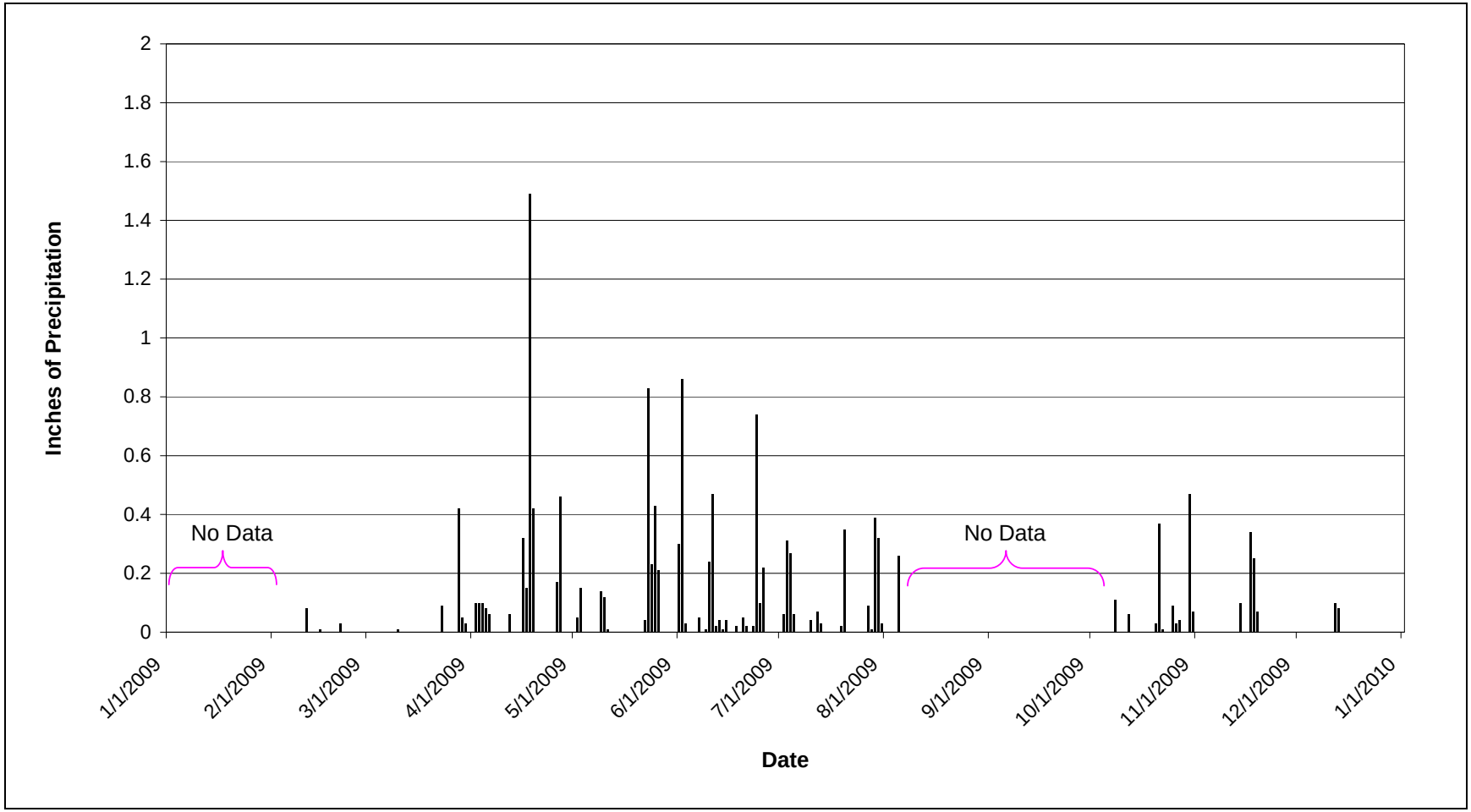

Figure A−2. CY 2009 Annual Hyetograph at PG59: Gaging Station GS03

Table A–17. CY 2009 Precipitation Summary for PG59: Gaging Station GS03

Calendar Year 2009: Daily Total Precipitation Values in Inches

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	No Data	No Data	0.00	0.00	0.00	0.30	0.00	0.00	No Data	No Data	0.00	0.00
2	No Data	No Data	0.00	0.10	0.05	0.86	0.06	0.00	No Data	No Data	0.00	0.00
3	No Data	0.00	0.00	0.10	0.15	0.03	0.31	0.00	No Data	No Data	0.00	0.00
4	No Data	0.00	0.00	0.10	0.00	0.00	0.27	0.00	No Data	No Data	0.00	0.00
5	No Data	0.00	0.00	0.08	0.00	0.00	0.06	0.26	No Data	No Data	0.00	0.00
6	No Data	0.00	0.00	0.06	0.00	0.00	0.00	No Data	No Data	No Data	0.00	0.00
7	No Data	0.00	0.00	0.00	0.00	0.05	0.00	No Data	No Data	0.00	0.00	0.00
8	No Data	0.00	0.00	0.00	0.00	0.00	0.00	No Data	No Data	0.11	0.00	0.00
9	No Data	0.00	0.00	0.00	0.14	0.01	0.00	No Data	No Data	0.00	0.00	0.00
10	No Data	0.00	0.01	0.00	0.12	0.24	0.04	No Data	No Data	0.00	0.00	0.00
11	No Data	0.08	0.00	0.00	0.01	0.47	0.00	No Data	No Data	0.00	0.00	0.00
12	No Data	0.00	0.00	0.06	0.00	0.02	0.07	No Data	No Data	0.06	0.00	0.10
13	No Data	0.00	0.00	0.00	0.00	0.04	0.03	No Data	No Data	0.00	0.00	0.08
14	No Data	0.00	0.00	0.00	0.00	0.01	0.00	No Data	No Data	0.00	0.10	0.00
15	No Data	0.01	0.00	0.00	0.00	0.04	0.00	No Data	No Data	0.00	0.00	0.00
16	No Data	0.00	0.00	0.32	0.00	0.00	0.00	No Data	No Data	0.00	0.00	0.00
17	No Data	0.00	0.00	0.15	0.00	0.00	0.00	No Data	No Data	0.00	0.34	0.00
18	No Data	0.00	0.00	1.49	0.00	0.02	0.00	No Data	No Data	0.00	0.25	0.00
19	No Data	0.00	0.00	0.42	0.00	0.00	0.02	No Data	No Data	0.00	0.07	0.00
20	No Data	0.00	0.00	0.00	0.00	0.05	0.35	No Data	No Data	0.03	0.00	0.00
21	No Data	0.03	0.00	0.00	0.00	0.02	0.00	No Data	No Data	0.37	0.00	0.00
22	No Data	0.00	0.00	0.00	0.04	0.00	0.00	No Data	No Data	0.01	0.00	0.00
23	No Data	0.00	0.09	0.00	0.83	0.02	0.00	No Data	No Data	0.00	0.00	0.00
24	No Data	0.00	0.00	0.00	0.23	0.74	0.00	No Data	No Data	0.00	0.00	0.00
25	No Data	0.00	0.00	0.00	0.43	0.10	0.00	No Data	No Data	0.09	0.00	0.00
26	No Data	0.00	0.00	0.17	0.21	0.22	0.00	No Data	No Data	0.03	0.00	0.00
27	No Data	0.00	0.00	0.46	0.00	0.00	0.09	No Data	No Data	0.04	0.00	0.00
28	No Data	0.00	0.42	0.00	0.00	0.00	0.01	No Data	No Data	0.00	0.00	0.00
29	No Data	NA	0.05	0.00	0.00	0.00	0.39	No Data	No Data	0.00	0.00	0.00
30	No Data	NA	0.03	0.00	0.00	0.00	0.32	No Data	No Data	0.47	0.00	0.00
31	No Data	NA	0.00	NA	0.00	NA	0.03	No Data	NA	0.07	NA	0.00
	No Data	Partial Data						Partial Data	No Data	Partial Data		

Precipitation

Monthly Total	0.00	0.12	0.60	3.51	2.21	3.24	2.05	0.26		1.28	0.76	0.18
Daily Maximum	0.00	0.08	0.42	1.49	0.83	0.86	0.39	0.26		0.47	0.34	0.10
	No Data	Partial Data						Partial Data	No Data	Partial Data		

Annual Summaries for CY09

Total Inches	14.21
	Partial Data

KEY: No Data: Bad or missing data due to equipment failures or discontinued operation

A.2.3 PG61: Gaging Station GS05

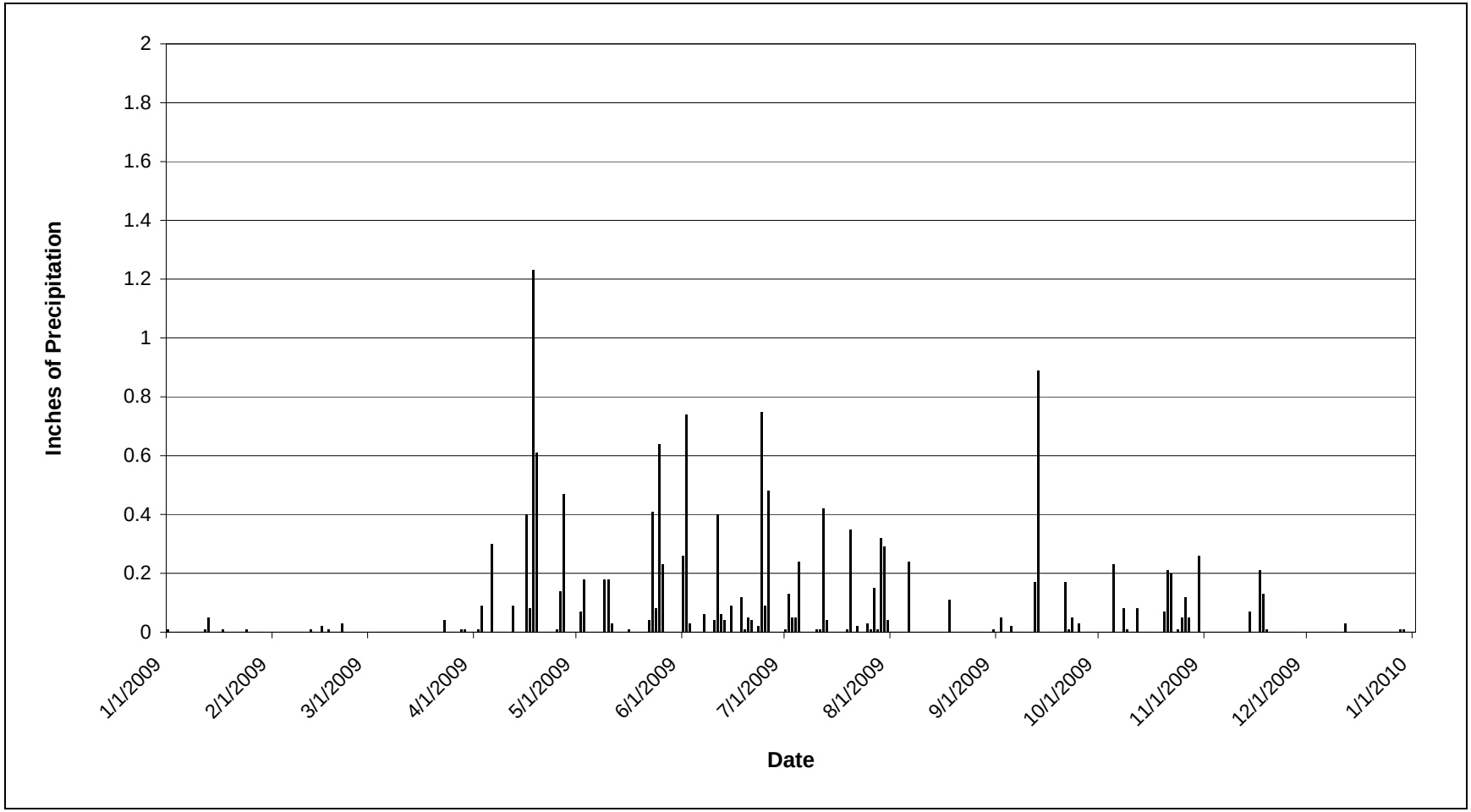

Figure A-3. CY 2009 Annual Hyetograph at PG61: Gaging Station GS05

Table A–18. CY 2009 Precipitation Summary for PG61: Gaging Station GS05

Calendar Year 2009: Daily Total Precipitation Values in Inches

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.01	0.00	0.00	0.00	0.00	0.26	0.01	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.01	0.07	0.74	0.13	0.00	0.05	0.00	0.00	0.00
3	0.00	0.00	0.00	0.09	0.18	0.03	0.05	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.02	0.23	0.00	0.00
6	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00
9	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.01	0.00	0.00
10	0.00	0.00	0.00	0.00	0.18	0.04	0.01	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.03	0.40	0.01	0.00	0.00	0.00	0.00	0.00
12	0.01	0.01	0.00	0.09	0.00	0.06	0.42	0.00	0.17	0.08	0.00	0.03
13	0.05	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.89	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00
15	0.00	0.02	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.40	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.01	0.01	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00
18	0.00	0.00	0.00	1.23	0.00	0.12	0.00	0.11	0.00	0.00	0.13	0.00
19	0.00	0.00	0.00	0.61	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00
20	0.00	0.00	0.00	0.00	0.00	0.05	0.35	0.00	0.00	0.07	0.00	0.00
21	0.00	0.03	0.00	0.00	0.00	0.04	0.00	0.00	0.17	0.21	0.00	0.00
22	0.00	0.00	0.00	0.00	0.04	0.00	0.02	0.00	0.01	0.20	0.00	0.00
23	0.00	0.00	0.04	0.00	0.41	0.02	0.00	0.00	0.05	0.00	0.00	0.00
24	0.01	0.00	0.00	0.00	0.08	0.75	0.00	0.00	0.00	0.01	0.00	0.00
25	0.00	0.00	0.00	0.01	0.64	0.09	0.03	0.00	0.03	0.05	0.00	0.00
26	0.00	0.00	0.00	0.14	0.23	0.48	0.01	0.00	0.00	0.12	0.00	0.00
27	0.00	0.00	0.00	0.47	0.00	0.00	0.15	0.00	0.00	0.05	0.00	0.00
28	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
29	0.00	NA	0.01	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.01
30	0.00	NA	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.26	0.00	0.00
31	0.00	NA	0.00	NA	0.00	NA	0.04	0.01	NA	0.00	NA	0.00

Precipitation

Monthly Total	0.09	0.07	0.06	3.43	2.05	3.28	2.19	0.36	1.39	1.37	0.42	0.05
Daily Maximum	0.05	0.03	0.04	1.23	0.64	0.75	0.42	0.24	0.89	0.26	0.21	0.03

Annual Summaries for CY09

Total Inches	14.76

KEY: No Data: Bad or missing data due to equipment failures or discontinued operation

A.2.4 PG73: Gaging Station GS13

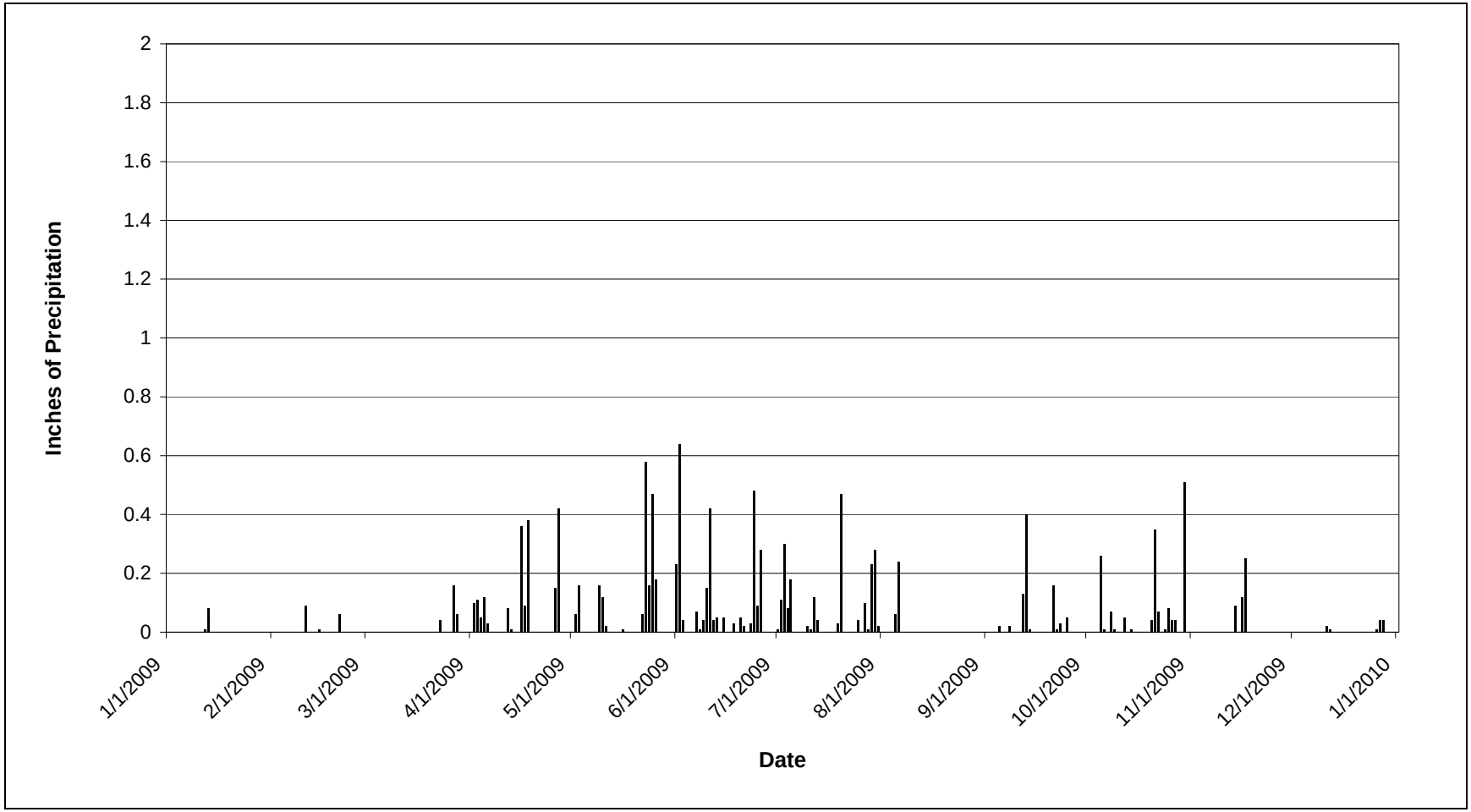

Figure A-4. CY 2009 Annual Hyetograph at PG73: Gaging Station GS13

Table A–19. CY 2009 Precipitation Summary for PG73: Gaging Station GS13

Calendar Year 2009: Daily Total Precipitation Values in Inches

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.00	0.00	0.00	0.00	0.00	0.23	0.01	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.10	0.06	0.64	0.11	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.11	0.16	0.04	0.30	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.05	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.12	0.00	0.00	0.18	0.06	0.02	0.26	0.00	0.00
6	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.24	0.00	0.01	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.07	0.00	0.00
9	0.00	0.00	0.00	0.00	0.16	0.04	0.00	0.00	0.00	0.01	0.00	0.00
10	0.00	0.00	0.00	0.00	0.12	0.15	0.02	0.00	0.00	0.00	0.00	0.00
11	0.00	0.09	0.00	0.00	0.02	0.42	0.01	0.00	0.00	0.00	0.00	0.02
12	0.01	0.00	0.00	0.08	0.00	0.04	0.12	0.00	0.13	0.05	0.00	0.01
13	0.08	0.00	0.00	0.01	0.00	0.05	0.04	0.00	0.40	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.09	0.00
15	0.00	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.36	0.01	0.00	0.00	0.00	0.00	0.00	0.12	0.00
17	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00
18	0.00	0.00	0.00	0.38	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.05	0.47	0.00	0.00	0.04	0.00	0.00
21	0.00	0.06	0.00	0.00	0.00	0.02	0.00	0.00	0.16	0.35	0.00	0.00
22	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.07	0.00	0.00
23	0.00	0.00	0.04	0.00	0.58	0.03	0.00	0.00	0.03	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.16	0.48	0.00	0.00	0.00	0.01	0.00	0.00
25	0.00	0.00	0.00	0.00	0.47	0.09	0.04	0.00	0.05	0.08	0.00	0.00
26	0.00	0.00	0.00	0.15	0.18	0.28	0.00	0.00	0.00	0.04	0.00	0.01
27	0.00	0.00	0.16	0.42	0.00	0.00	0.10	0.00	0.00	0.04	0.00	0.04
28	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.04
29	0.00	NA	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00
30	0.00	NA	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.51	0.00	0.00
31	0.00	NA	0.00	NA	0.00	NA	0.02	0.00	NA	0.00	NA	0.00

Precipitation

Monthly Total	0.09	0.16	0.26	1.90	1.98	2.72	2.05	0.30	0.83	1.55	0.46	0.12
Daily Maximum	0.08	0.09	0.16	0.42	0.58	0.64	0.47	0.24	0.40	0.51	0.25	0.04

Annual Summaries for CY09

Total Inches 12.42

KEY: No Data: Bad or missing data due to equipment failures or discontinued operation

A.2.5 PG74: Gaging Station GS59

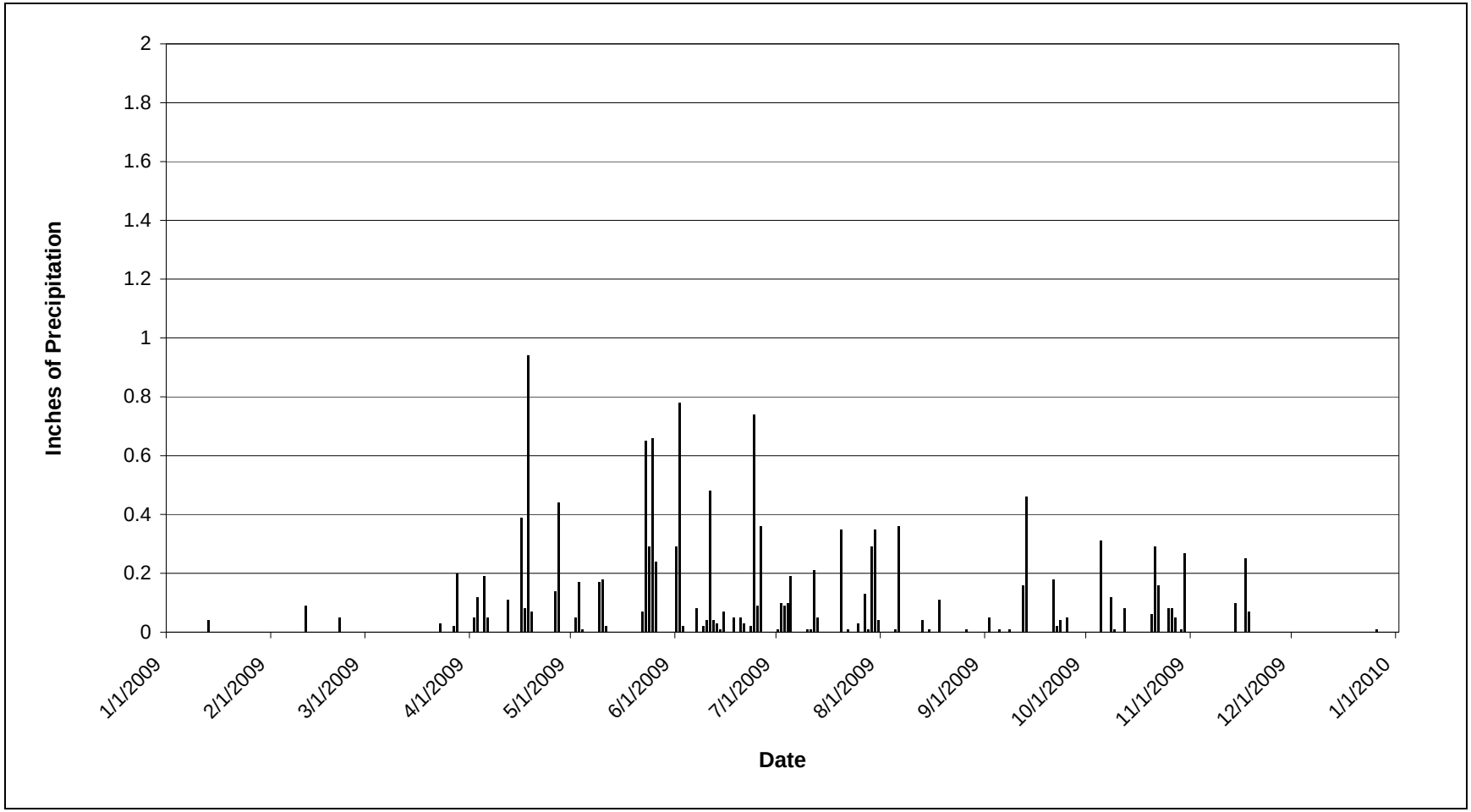

Figure A-5. CY 2009 Annual Hyetograph at PG74: Gaging Station GS59

Table A–20. CY 2009 Precipitation Summary for PG74: Gaging Station GS59

Calendar Year 2009: Daily Total Precipitation Values in Inches

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.00	0.00	0.00	0.00	0.00	0.29	0.01	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.05	0.05	0.78	0.10	0.00	0.05	0.00	0.00	0.00
3	0.00	0.00	0.00	0.12	0.17	0.02	0.09	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.01	0.00	0.10	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.19	0.00	0.00	0.19	0.01	0.01	0.31	0.00	0.00
6	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.12	0.00	0.00
9	0.00	0.00	0.00	0.00	0.17	0.02	0.00	0.00	0.00	0.01	0.00	0.00
10	0.00	0.00	0.00	0.00	0.18	0.04	0.01	0.00	0.00	0.00	0.00	0.00
11	0.00	0.09	0.00	0.00	0.02	0.48	0.01	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.11	0.00	0.04	0.21	0.00	0.16	0.08	0.00	0.00
13	0.04	0.00	0.00	0.00	0.00	0.03	0.05	0.04	0.46	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.00
15	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.01	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00
18	0.00	0.00	0.00	0.94	0.00	0.05	0.00	0.11	0.00	0.00	0.07	0.00
19	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.05	0.35	0.00	0.00	0.06	0.00	0.00
21	0.00	0.05	0.00	0.00	0.00	0.03	0.00	0.00	0.18	0.29	0.00	0.00
22	0.00	0.00	0.00	0.00	0.07	0.00	0.01	0.00	0.02	0.16	0.00	0.00
23	0.00	0.00	0.03	0.00	0.65	0.02	0.00	0.00	0.04	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.29	0.74	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.66	0.09	0.03	0.00	0.05	0.08	0.00	0.00
26	0.00	0.00	0.00	0.14	0.24	0.36	0.00	0.01	0.00	0.08	0.00	0.01
27	0.00	0.00	0.02	0.44	0.00	0.00	0.13	0.00	0.00	0.05	0.00	0.00
28	0.00	0.00	0.20	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
29	0.00	NA	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.01	0.00	0.00
30	0.00	NA	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.27	0.00	0.00
31	0.00	NA	0.00	NA	0.00	NA	0.04	0.00	NA	0.00	NA	0.00

Precipitation

Monthly Total	0.04	0.14	0.25	2.58	2.51	3.20	1.98	0.54	0.98	1.52	0.42	0.01
Daily Maximum	0.04	0.09	0.20	0.94	0.66	0.78	0.35	0.36	0.46	0.31	0.25	0.01

Annual Summaries for CY09

Total Inches 14.17

KEY: No Data: Bad or missing data due to equipment failures or discontinued operation

A.2.6 PG75: Gaging Station SW018

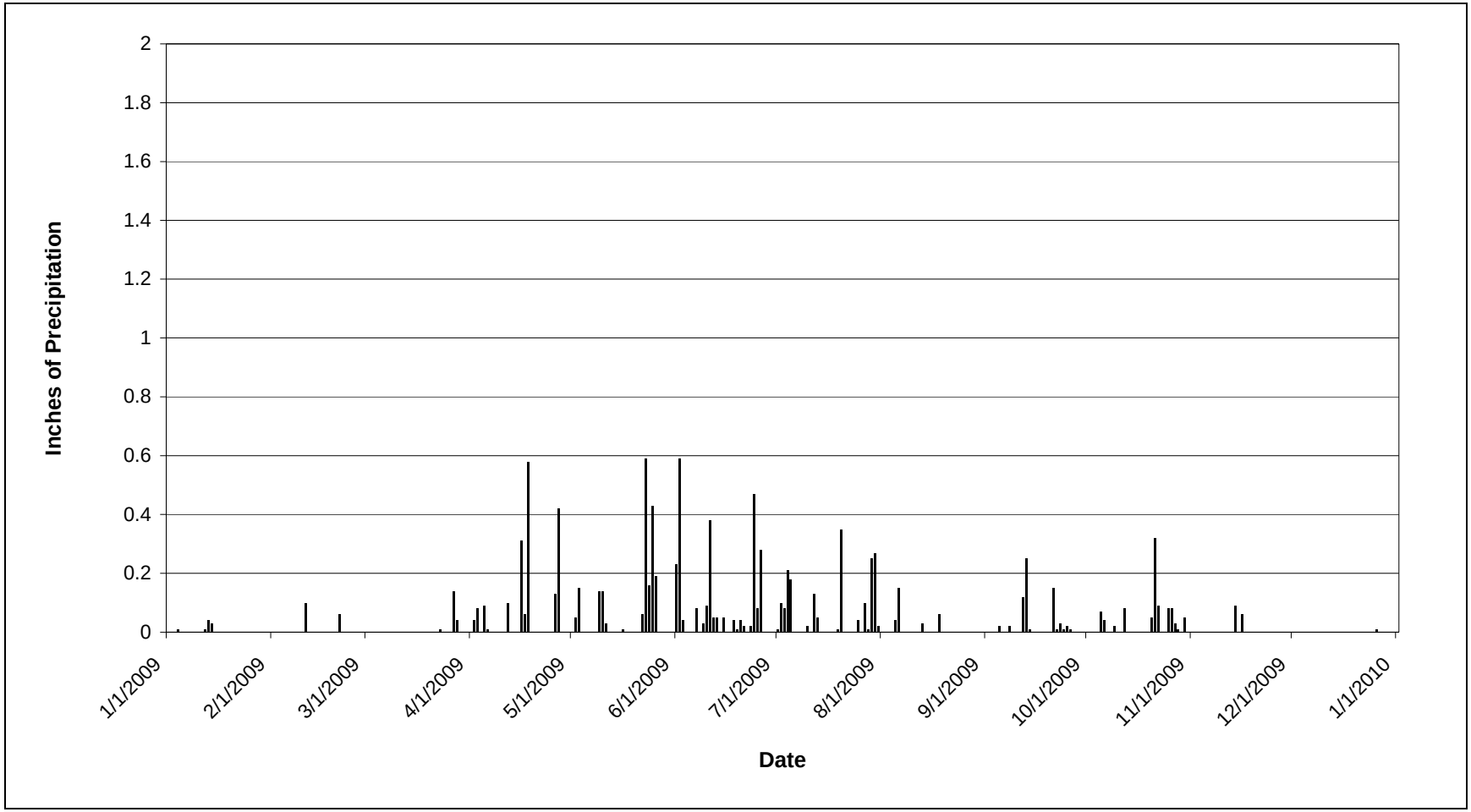

Figure A-6. CY 2009 Annual Hyetograph at PG75: Gaging Station SW018

Table A–21. CY 2009 Precipitation Summary for PG75: Gaging Station SW018

Calendar Year 2009: Daily Total Precipitation Values in Inches

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.00	0.00	0.00	0.00	0.00	0.23	0.01	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.04	0.05	0.59	0.10	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.08	0.15	0.04	0.08	0.00	0.00	0.00	0.00	0.00
4	0.01	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.09	0.00	0.00	0.18	0.04	0.02	0.07	0.00	0.00
6	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.15	0.00	0.04	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	No Data	0.00	0.00
9	0.00	0.00	0.00	0.00	0.14	0.03	0.00	0.00	0.00	0.02	0.00	0.00
10	0.00	0.00	0.00	0.00	0.14	0.09	0.02	0.00	0.00	0.00	0.00	0.00
11	0.00	0.10	0.00	0.00	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00
12	0.01	0.00	0.00	0.10	0.00	0.05	0.13	0.00	0.12	0.08	0.00	0.00
13	0.04	0.00	0.00	0.00	0.00	0.05	0.05	0.03	0.25	0.00	0.00	0.00
14	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.09	0.00
15	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.31	0.01	0.00	0.00	0.00	0.00	0.00	0.06	0.00
17	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.58	0.00	0.04	0.00	0.06	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.04	0.35	0.00	0.00	0.05	0.00	0.00
21	0.00	0.06	0.00	0.00	0.00	0.02	0.00	0.00	0.15	0.32	0.00	0.00
22	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.09	0.00	0.00
23	0.00	0.00	0.01	0.00	0.59	0.02	0.00	0.00	0.03	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.16	0.47	0.00	0.00	0.01	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.43	0.08	0.04	0.00	0.02	0.08	0.00	0.00
26	0.00	0.00	0.00	0.13	0.19	0.28	0.00	0.00	0.01	0.08	0.00	0.01
27	0.00	0.00	0.14	0.42	0.00	0.00	0.10	0.00	0.00	0.03	0.00	0.00
28	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
29	0.00	NA	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00
30	0.00	NA	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.05	0.00	0.00
31	0.00	NA	0.00	NA	0.00	NA	0.02	0.00	NA	0.00	NA	0.00
										Partial Data		

Precipitation

Monthly Total	0.09	0.16	0.19	1.82	1.95	2.55	1.83	0.28	0.65	0.92	0.15	0.01
Daily Maximum	0.04	0.10	0.14	0.58	0.59	0.59	0.35	0.15	0.25	0.32	0.09	0.01
										Partial Data		

Annual Summaries for CY09

KEY: No Data: Bad or missing data due to equipment failures or discontinued operation

Total Inches 10.60

Partial Data

A.2.7 PG76: Telemetry Repeater Node RTU3

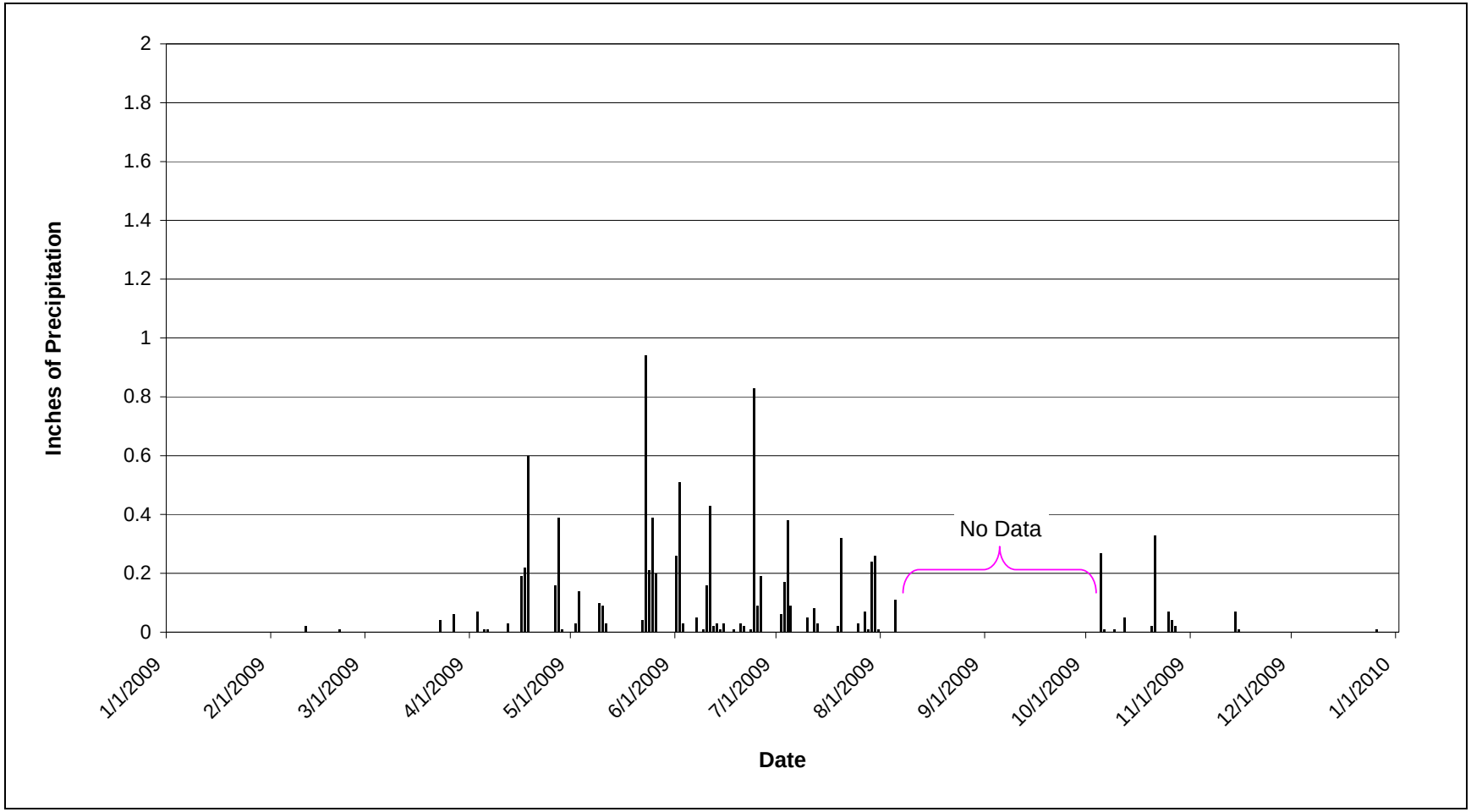

Figure A-7. CY 2009 Annual Hyetograph at PG76: Telemetry Repeater Node RTU3

Table A–22. CY 2009 Precipitation Summary for PG76: Telemetry Repeater Node RTU3

Calendar Year 2009: Daily Total Precipitation Values in Inches

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	No Data	No Data	0.00	0.00
2	0.00	0.00	0.00	0.00	0.03	0.51	0.06	0.00	No Data	No Data	0.00	0.00
3	0.00	0.00	0.00	0.07	0.14	0.03	0.17	0.00	No Data	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00	No Data	0.00	0.00	0.00
5	0.00	0.00	0.00	0.01	0.00	0.00	0.09	0.11	No Data	0.27	0.00	0.00
6	0.00	0.00	0.00	0.01	0.00	0.00	0.00	No Data	No Data	0.01	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.05	0.00	No Data	No Data	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	No Data	No Data	No Data	0.00	0.00
9	0.00	0.00	0.00	0.00	0.10	0.01	0.00	No Data	No Data	0.01	0.00	0.00
10	0.00	0.00	0.00	0.00	0.09	0.16	0.05	No Data	No Data	0.00	0.00	0.00
11	0.00	0.02	0.00	0.00	0.03	0.43	0.00	No Data	No Data	0.00	0.00	0.00
12	0.00	0.00	0.00	0.03	0.00	0.02	0.08	No Data	No Data	0.05	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.03	0.03	No Data	No Data	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.01	0.00	No Data	No Data	0.00	0.07	0.00
15	0.00	0.00	0.00	0.00	0.00	0.03	0.00	No Data	No Data	0.00	0.01	0.00
16	0.00	0.00	0.00	0.19	0.00	0.00	0.00	No Data	No Data	0.00	0.00	0.00
17	0.00	0.00	0.00	0.22	0.00	0.00	0.00	No Data	No Data	0.00	0.00	0.00
18	0.00	0.00	0.00	0.60	0.00	0.01	0.00	No Data	No Data	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.02	No Data	No Data	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.03	0.32	No Data	No Data	0.02	0.00	0.00
21	0.00	0.01	0.00	0.00	0.00	0.02	0.00	No Data	No Data	0.33	0.00	0.00
22	0.00	0.00	0.00	0.00	0.04	0.00	0.00	No Data	No Data	0.00	0.00	0.00
23	0.00	0.00	0.04	0.00	0.94	0.01	0.00	No Data	No Data	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.21	0.83	0.00	No Data	No Data	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.39	0.09	0.03	No Data	No Data	0.07	0.00	0.00
26	0.00	0.00	0.00	0.16	0.20	0.19	0.00	No Data	No Data	0.04	0.00	0.01
27	0.00	0.00	0.06	0.39	0.00	0.00	0.07	No Data	No Data	0.02	0.00	0.00
28	0.00	0.00	0.00	0.01	0.00	0.00	0.01	No Data	No Data	0.00	0.00	0.00
29	0.00	NA	0.00	0.00	0.00	0.00	0.24	No Data	No Data	0.00	0.00	0.00
30	0.00	NA	0.00	0.00	0.00	0.00	0.26	No Data	No Data	0.00	0.00	0.00
31	0.00	NA	0.00	NA	0.00	NA	0.01	No Data	NA	0.00	NA	0.00
								Partial Data	No Data	Partial Data		

Precipitation

Monthly Total	0.00	0.03	0.10	1.69	2.17	2.72	1.82	0.11		0.82	0.08	0.01
Daily Maximum	0.00	0.02	0.06	0.60	0.94	0.83	0.38	0.11		0.33	0.07	0.01
								Partial Data	No Data	Partial Data		

Annual Summaries for CY09

Total Inches 9.55

Partial Data

KEY: No Data: Bad or missing data due to equipment failures or discontinued operation

A.2.8 PG77: Telemetry Repeater Node RTU2

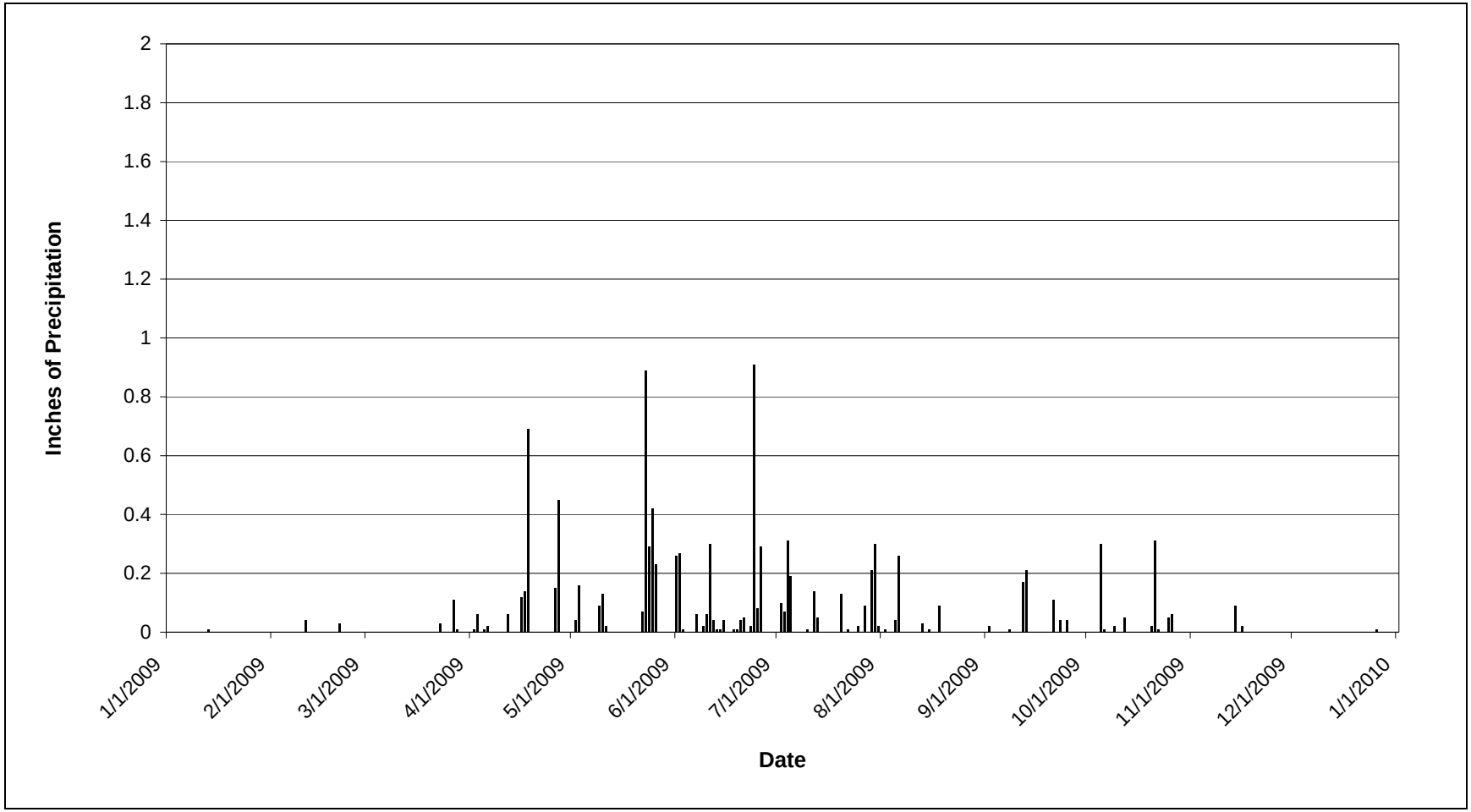

Figure A-8. CY 2009 Annual Hyetograph at PG77: Telemetry Repeater Node RTU2

Table A–23. CY 2009 Precipitation Summary for PG77: Telemetry Repeater Node RTU2

Calendar Year 2009: Daily Total Precipitation Values in Inches

Day	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.01	0.04	0.27	0.10	0.01	0.02	0.00	0.00	0.00
3	0.00	0.00	0.00	0.06	0.16	0.01	0.07	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.01	0.00	0.00	0.19	0.04	0.00	0.30	0.00	0.00
6	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.26	0.00	0.01	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	No Data	0.00	0.00
9	0.00	0.00	0.00	0.00	0.09	0.02	0.00	0.00	0.00	0.02	0.00	0.00
10	0.00	0.00	0.00	0.00	0.13	0.06	0.01	0.00	0.00	0.00	0.00	0.00
11	0.00	0.04	0.00	0.00	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.06	0.00	0.04	0.14	0.00	0.17	0.05	0.00	0.00
13	0.01	0.00	0.00	0.00	0.00	0.01	0.05	0.03	0.21	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.09	0.00
15	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
17	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.69	0.00	0.01	0.00	0.09	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.04	0.13	0.00	0.00	0.02	0.00	0.00
21	0.00	0.03	0.00	0.00	0.00	0.05	0.00	0.00	0.11	0.31	0.00	0.00
22	0.00	0.00	0.00	0.00	0.07	0.00	0.01	0.00	0.00	0.01	0.00	0.00
23	0.00	0.00	0.03	0.00	0.89	0.02	0.00	0.00	0.04	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.29	0.91	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.42	0.08	0.02	0.00	0.04	0.05	0.00	0.00
26	0.00	0.00	0.00	0.15	0.23	0.29	0.00	0.00	0.00	0.06	0.00	0.01
27	0.00	0.00	0.11	0.45	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	NA	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00
30	0.00	NA	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00
31	0.00	NA	0.00	NA	0.00	NA	0.02	0.00	NA	0.00	NA	0.00
										Partial Data		

Precipitation

Monthly Total	0.01	0.07	0.15	1.71	2.34	2.49	1.65	0.44	0.60	0.83	0.11	0.01
Daily Maximum	0.01	0.04	0.11	0.69	0.89	0.91	0.31	0.26	0.21	0.31	0.09	0.01
										Partial Data		

Annual Summaries for CY09

Total Inches 10.41

Partial Data

KEY: No Data: Bad or missing data due to equipment failures or discontinued operation

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A.3 Groundwater Level Data for CY 2009

Water level data for 2009 are included for all wells at which manual measurements were collected.

Table A–24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
00191	1/15/2009	5947.54	22.94
00191	3/13/2009	5947.36	23.12
00191	4/9/2009	5947.8	22.68
00191	7/14/2009	5956.51	13.97
00191	10/1/2009	5951.16	19.32
00193	1/21/2009	5756.2	11.41
00193	4/8/2009	5755.96	11.65
00193	4/30/2009	5756.51	11.1
00193	10/1/2009	5759.8	7.81
00193	10/27/2009	5759.61	8
00203	1/8/2009	5963.4	10.76
00203	4/9/2009	5962.71	11.45
00203	7/14/2009	5967.51	6.65
00203	10/7/2009	5965.54	8.62
00491	1/14/2009	5886.3	18.97
00491	4/8/2009	5886.3	18.97
00491	10/1/2009	5889.66	15.61
00491	7/15/2009	5905.27	14.42
00797	1/21/2009	5922.74	17.94
00797	4/9/2009	5923.76	16.92
00797	5/28/2009	5924.7	15.98
00797	10/1/2009	5924.48	16.2
00797	10/27/2009	5924.54	16.14
00897	1/15/2009	5940.65	26.25
00897	4/9/2009	5939.65	27.25
00897	7/14/2009	5946.69	20.21
00897	10/6/2009	5944.96	21.94
00997	1/21/2009	5793.08	8.03
00997	4/9/2009	5794.29	6.82
00997	6/11/2009	5794.6	6.51
00997	10/6/2009	5791.22	9.89
00997	10/14/2009	5791.7	9.41
1786	1/13/2009	5862.88	6.48
1786	4/8/2009	5863.18	6.18
1786	6/16/2009	5863.04	6.32
1786	10/7/2009	5862.95	6.41
3687	1/15/2009	5909.83	41.4
3687	4/9/2009	5909.86	41.37
3687	7/14/2009	5910.92	40.31
3687	10/6/2009	5912.88	38.35
03991	1/15/2009	5899.88	36.81
03991	4/9/2009	5899.83	36.86

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
03991	7/14/2009	5900.04	36.65
03991	10/1/2009	5900.28	36.41
4087	1/15/2009	5882.1	2.2
4087	4/8/2009	5882.14	2.16
4087	4/21/2009	5882.3	2
4087	7/7/2009	5881.71	2.59
4087	10/7/2009	5877.44	6.86
4087	11/10/2009	5881.99	2.31
04091	1/15/2009	5892.23	37.71
04091	4/9/2009	5892.23	37.71
04091	4/23/2009	5892.34	37.6
04091	5/19/2009	5892.14	37.8
04091	7/15/2009	5892.69	37.25
04091	10/1/2009	5892.55	37.39
04091	10/26/2009	5892.03	37.91
05691	1/15/2009	5913.56	35.15
05691	4/9/2009	5913.26	35.45
05691	7/14/2009	5916	32.71
05691	10/6/2009	5918.74	29.97
07391	1/14/2009	5941.02	9.71
07391	4/9/2009	5941.26	9.47
07391	6/16/2009	5944.41	6.32
07391	6/25/2009	5942.92	7.81
07391	10/1/2009	5941.92	8.81
07391	7/15/2009	5950.73	7.58
10304	1/21/2009	5810.81	5.99
10304	4/8/2009	5810.79	6.01
10304	5/28/2009	5810.54	6.26
10304	10/1/2009	5809.29	7.51
10304	11/4/2009	5811.62	5.18
10394	1/6/2009	5627.07	6.11
10394	4/8/2009	5628.43	4.75
10394	4/13/2009	5628.31	4.87
10394	10/7/2009	5623.93	9.25
10394	7/15/2009	5633.18	6.05
10594	1/13/2009	5808.45	12.64
10594	4/8/2009	5814.88	6.21
10594	6/9/2009	5814.86	6.23
10594	10/7/2009	5812.08	9.01
10594	10/15/2009	5812.28	8.81
11104	1/14/2009	5915.53	7.86
11104	4/8/2009	5915.61	7.78
11104	5/21/2009	5915.04	8.35
11104	10/1/2009	5913.98	9.41
11104	11/11/2009	5915.58	7.81
11104	7/15/2009	5923.39	8.72
11502	1/8/2009	5996.57	19.62

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
11502	4/8/2009	6002.1	14.09
11502	4/29/2009	6005.79	10.4
11502	10/6/2009	5996.5	19.69
11502	11/4/2009	5996.08	20.11
11502	7/15/2009	6016.19	15.75
15699	1/6/2009	5909.58	10.72
15699	4/9/2009	5910.68	9.62
15699	4/20/2009	5916.65	3.65
15699	7/14/2009	5913.19	7.11
15699	10/6/2009	5912.17	8.13
15699	10/20/2009	5912.64	7.66
16299	1/6/2009	5912.08	12.82
16299	7/7/2009	5913.54	11.36
16399	1/6/2009	5912.26	10.17
16399	7/7/2009	5913.75	8.68
16499	1/6/2009	5912.17	9.64
16499	7/7/2009	5913.68	8.13
16599	1/6/2009	5911.54	10.61
16599	7/7/2009	5916.09	6.06
18199	1/8/2009	5970.64	16.95
18199	4/9/2009	5970.06	17.53
18199	5/1/2009	5977.82	9.77
18199	6/18/2009	5977.38	10.21
18199	7/14/2009	5976.48	11.11
18199	10/7/2009	5973.7	13.89
20205	1/21/2009	5926.4	13.11
20205	4/9/2009	5927.44	12.07
20205	5/1/2009	5930.31	9.2
20205	5/5/2009	5930.46	9.05
20205	7/13/2009	5930.42	9.09
20205	10/7/2009	5929.54	9.97
20205	10/13/2009	5929.52	9.99
20505	1/8/2009	5919.12	22.42
20505	4/9/2009	5920.68	20.86
20505	5/1/2009	5921.4	20.14
20505	5/7/2009	5922.21	19.33
20505	7/13/2009	5931.49	10.05
20505	10/7/2009	5932.96	8.58
20505	10/13/2009	5932.55	8.99
20705	1/8/2009	5924.45	18.75
20705	4/9/2009	5924.61	18.59
20705	5/1/2009	5934.19	9.01
20705	5/5/2009	5933.55	9.65
20705	7/13/2009	5933.15	10.05
20705	10/7/2009	5930.35	12.85
20705	10/13/2009	5930.22	12.98
20902	1/21/2009	5939.33	10.05

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
20902	4/9/2009	5939.03	10.35
20902	5/1/2009	5939.52	9.86
20902	7/13/2009	5945.23	4.15
20902	10/7/2009	5942.76	6.62
21002	1/8/2009	5944.45	16.55
21002	4/9/2009	5944.78	16.22
21002	5/1/2009	5950.6	10.4
21002	7/13/2009	5950.06	10.94
21002	10/7/2009	5946.47	14.53
21305	1/9/2009	5950.85	15.81
21305	4/9/2009	5950.96	15.7
21305	5/1/2009	5960.05	6.61
21305	7/13/2009	5957.5	9.16
21305	10/7/2009	5952.81	13.85
21505	1/8/2009	5966.04	7.51
21505	4/9/2009	5967.26	6.29
21505	5/1/2009	5969.31	4.24
21505	5/1/2009	5969.31	4.24
21505	7/13/2009	5967.31	6.24
21505	10/7/2009	5963.33	10.22
21505	7/15/2009	5973.55	6.24
21605	1/8/2009	5965.29	10.97
21605	4/9/2009	5965.65	10.61
21605	5/1/2009	5972.79	3.47
21605	7/13/2009	5971.16	5.1
21605	10/7/2009	5967.25	9.01
21605	7/15/2009	5976.26	5.1
22205	1/9/2009	5914.65	19.75
22205	4/9/2009	5914.47	19.93
22205	7/13/2009	5914.67	19.73
22205	10/7/2009	5916.12	18.28
22996	1/21/2009	5975.83	11.13
22996	4/13/2009	5979.71	7.25
22996	10/7/2009	5976.19	10.77
23296	1/22/2009	5854.96	2.53
23296	4/9/2009	5855.42	2.07
23296	4/29/2009	5856.08	1.41
23296	7/14/2009	5855.84	1.65
23296	10/6/2009	5855.94	1.55
23296	10/26/2009	5856.28	1.21
30002	1/8/2009	5913.03	16.81
30002	4/9/2009	5913.43	16.41
30002	5/13/2009	5920.31	9.53
30002	7/13/2009	5927.19	2.65
30002	10/7/2009	5922.95	6.89
30002	10/13/2009	5922.72	7.12
30900	1/6/2009	5990.31	16.84

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
30900	4/8/2009	5994.1	13.05
30900	7/7/2009	6002.76	4.39
30900	10/7/2009	5993.94	13.21
33502	1/8/2009	6012.71	9.45
33502	4/13/2009	6014.6	7.56
33502	6/24/2009	6017.54	4.62
33502	10/7/2009	6013.3	8.86
33502	7/15/2009	6022.16	5.28
33604	1/8/2009	6008.97	9.85
33604	4/13/2009	6009	9.82
33604	6/24/2009	6013.73	5.09
33604	10/7/2009	6010.2	8.62
33604	7/15/2009	6018.82	5.66
33703	1/21/2009	5995.01	21.7
33703	4/13/2009	5994.58	22.13
33703	5/1/2009	5997.3	19.41
33703	5/13/2009	6003.54	13.17
33703	10/7/2009	5999.11	17.6
33703	10/12/2009	5998.96	17.75
33905	1/21/2009	5986.24	21.18
33905	4/13/2009	5990.91	16.51
33905	5/1/2009	5998.64	8.78
33905	10/7/2009	5988.47	18.95
37105	1/8/2009	6002.23	11.91
37105	4/13/2009	6002.35	11.79
37105	10/7/2009	6003.38	10.76
37105	7/15/2009	6014.14	6.66
37405	1/8/2009	5983.69	26.02
37405	4/13/2009	5983.4	26.31
37405	5/6/2009	5988.45	21.26
37405	10/7/2009	5985.76	23.95
37405	10/12/2009	5985.76	23.95
37405	7/15/2009	6009.71	20.36
37505	1/8/2009	5990.05	21.77
37505	4/13/2009	5989.26	22.56
37505	5/7/2009	5993.34	18.48
37505	10/7/2009	5996.92	14.9
37505	10/12/2009	5996.9	14.92
37505	7/15/2009	6011.82	11.92
37591	1/14/2009	5979.4	14.14
37591	4/9/2009	5978.41	15.13
37591	10/1/2009	5980.72	12.82
37591	7/15/2009	5993.54	7.82
37691	1/14/2009	5967.42	18.89
37691	4/9/2009	5967.4	18.91
37691	10/1/2009	5967.98	18.33
37691	7/15/2009	5986.31	17.12

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
37705	1/21/2009	5967.09	42.25
37705	4/13/2009	5967.77	41.57
37705	5/6/2009	5967.87	41.47
37705	10/7/2009	5970.93	38.41
37705	10/14/2009	5971.24	38.1
39605	1/14/2009	5991.78	16.75
39605	4/9/2009	5991.43	17.1
39605	10/1/2009	5996.18	12.35
39605	7/15/2009	6008.53	10.85
40005	1/21/2009	6005.26	33.07
40005	4/8/2009	6005.73	32.6
40005	10/6/2009	6006.63	31.7
40005	7/15/2009	6038.33	27.42
40205	1/8/2009	6003.44	32.32
40205	4/8/2009	6004.22	31.54
40205	10/6/2009	6003.95	31.81
40205	7/15/2009	6035.76	30.15
40305	1/8/2009	6003.04	21.51
40305	4/8/2009	6006.62	17.93
40305	5/27/2009	6010	14.55
40305	10/6/2009	6004.27	20.28
40305	11/4/2009	6006.25	18.3
40305	7/15/2009	6024.55	15.24
41691	1/6/2009	5631.72	14.06
41691	4/13/2009	5632.08	13.7
41691	4/13/2009	5632.08	13.7
41691	10/9/2009	5633.06	12.72
41691	7/15/2009	5645.78	9.05
42505	1/21/2009	5928.54	11.35
42505	4/9/2009	5928.86	11.03
42505	5/13/2009	5929.18	10.71
42505	7/13/2009	5930.47	9.42
42505	10/7/2009	5930.15	9.74
42505	10/13/2009	5930.09	9.8
45608	1/15/2009	5952.29	0
45608	4/9/2009	5952.29	0
45608	5/11/2009	5952.29	0
45608	7/14/2009	5952.29	0
45608	10/6/2009	5952.29	0
45608	11/3/2009	5952.29	0
50299	1/14/2009	5913.5	12.41
50299	3/13/2009	5913.22	12.69
50299	4/8/2009	5913.54	12.37
50299	10/1/2009	5921.62	4.29
50299	7/15/2009	5925.91	4.11
51605	1/13/2009	5835.06	7.05
51605	4/8/2009	5836.87	5.24

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
51605	10/7/2009	5834.38	7.73
52505	1/21/2009	5941.38	4.41
52505	4/9/2009	5942.02	3.77
52505	5/4/2009	5943.04	2.75
52505	7/13/2009	5941.07	4.72
52505	10/7/2009	5940.85	4.94
52505	10/13/2009	5940.99	4.8
55905	1/8/2009	5981.35	16.1
55905	4/9/2009	5983.48	13.97
55905	5/1/2009	5986.44	11.01
55905	7/14/2009	5983.94	13.51
55905	10/7/2009	5982.34	15.11
56305	1/8/2009	5985.6	14.59
56305	4/9/2009	5988.22	11.97
56305	5/1/2009	5992.57	7.62
56305	7/14/2009	5990.48	9.71
56305	10/7/2009	5987.25	12.94
70099	1/21/2009	5875.65	23.87
70099	4/8/2009	5876.17	23.35
70099	6/4/2009	5876.37	23.15
70099	10/7/2009	5876.88	22.64
70099	10/14/2009	5877.01	22.51
70193	1/6/2009	5975.7	16.51
70193	2/24/2009	5975.5	16.71
70193	4/8/2009	5977.36	14.85
70193	4/14/2009	5977.14	15.07
70193	7/7/2009	5980.65	11.56
70193	9/10/2009	5978.28	13.93
70193	10/7/2009	5976.26	15.95
70193	11/5/2009	5975.3	16.91
70393	1/15/2009	5984.75	15.34
70393	3/3/2009	5984.59	15.5
70393	4/8/2009	5986.35	13.74
70393	4/14/2009	5986.79	13.3
70393	9/10/2009	5989.14	10.95
70393	10/7/2009	5987.98	12.11
70393	11/9/2009	5987.64	12.45
70693	1/6/2009	5970.52	22.1
70693	3/3/2009	5970.19	22.43
70693	4/8/2009	5978.12	14.5
70693	4/15/2009	5975.11	17.51
70693	7/7/2009	5980.71	11.91
70693	9/9/2009	5974.71	17.91
70693	10/7/2009	5973.82	18.8
70693	11/9/2009	5975.33	17.29
70705	1/21/2009	5981.53	12.01
70705	4/9/2009	5982.87	10.67

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
70705	5/1/2009	5985.93	7.61
70705	7/14/2009	5984.73	8.81
70705	10/7/2009	5982.59	10.95
71099	1/13/2009	5875.27	25.68
73005	1/6/2009	5915.7	24.41
73005	2/26/2009	5916.7	23.41
73005	4/8/2009	5914.91	25.2
73005	4/15/2009	5915.21	24.9
73005	7/7/2009	5917.73	22.38
73005	10/7/2009	5915.47	24.64
73005	11/10/2009	5916.5	23.61
73105	1/15/2009	5917.9	10.65
73105	2/25/2009	5917.56	10.99
73105	4/8/2009	5915.53	13.02
73105	4/14/2009	5916.01	12.54
73105	10/7/2009	5914.66	13.89
73105	11/10/2009	5916.83	11.72
73205	1/6/2009	5922.1	17.81
73205	3/2/2009	5921.78	18.13
73205	4/8/2009	5919.26	20.65
73205	4/15/2009	5919.68	20.23
73205	7/7/2009	5923.62	16.29
73205	8/27/2009	5923.67	16.24
73205	9/9/2009	5926.81	13.1
73205	10/7/2009	5923.33	16.58
73205	11/10/2009	5923.3	16.61
79102	1/21/2009	5947.93	20.95
79102	4/8/2009	5947.98	20.9
79102	7/14/2009	5949.68	19.2
79102	10/7/2009	5948.37	20.51
79202	1/8/2009	5942.59	28.1
79202	4/8/2009	5942.29	28.4
79202	7/14/2009	5945.49	25.2
79202	10/7/2009	5943.87	26.82
79302	1/21/2009	5941.22	18.59
79302	4/8/2009	5940.39	19.42
79302	7/14/2009	5943.75	16.06
79302	10/7/2009	5943.4	16.41
79402	1/8/2009	5953.19	8.42
79402	4/8/2009	5955.93	5.68
79402	7/14/2009	5956.12	5.49
79402	10/7/2009	5953.41	8.2
79502	1/8/2009	5960.75	9.51
79502	4/9/2009	5961.56	8.7
79502	7/14/2009	5962.21	8.05
79502	10/7/2009	5960.72	9.54
79605	1/21/2009	5947.58	17.09

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
79605	4/9/2009	5948.63	16.04
79605	7/14/2009	5957.83	6.84
79605	10/7/2009	5954.71	9.96
80005	1/14/2009	5950.99	9.2
80005	3/2/2009	5950.98	9.21
80005	4/8/2009	5952.89	7.3
80005	5/19/2009	5952.87	7.32
80005	7/7/2009	5953.04	7.15
80005	8/12/2009	5952.25	7.94
80005	10/1/2009	5951.7	8.49
80005	11/11/2009	5952.55	7.64
80105	1/14/2009	5938.96	3.01
80105	3/3/2009	5937.32	4.65
80105	4/8/2009	5936.76	5.21
80105	5/19/2009	5936.76	5.21
80105	7/7/2009	5937.92	4.05
80105	8/13/2009	5938.81	3.16
80105	10/1/2009	5940	1.97
80105	11/11/2009	5940.32	1.65
80205	1/21/2009	5931.49	10.18
80205	3/2/2009	5931.68	9.99
80205	4/8/2009	5932.22	9.45
80205	5/20/2009	5932.98	8.69
80205	8/11/2009	5932.7	8.97
80205	10/1/2009	5932	9.67
80205	11/11/2009	5931.95	9.72
80205	11/24/2009	5931.98	9.69
88104	1/21/2009	5941.41	20.68
88104	4/9/2009	5943.26	18.83
88104	6/1/2009	5944.22	17.87
88104	10/1/2009	5943.68	18.41
88104	10/27/2009	5944.28	17.81
88205	1/21/2009	5966.72	9.13
88205	4/9/2009	5969.04	6.81
88205	10/1/2009	5970.12	5.73
89104	1/21/2009	5851.82	6.39
89104	4/8/2009	5852.14	6.07
89104	5/27/2009	5852.79	5.42
89104	10/1/2009	5851.6	6.61
89104	10/27/2009	5851.9	6.31
90299	1/13/2009	Dry	Dry
90299	4/8/2009	Dry	Dry
90299	4/30/2009	Dry	Dry
90299	10/1/2009	Dry	Dry
90299	7/15/2009	Dry	Dry
90399	1/13/2009	5819.37	20.53
90399	4/8/2009	5819.15	20.75

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
90399	4/30/2009	5824.1	15.8
90399	10/1/2009	5819.68	20.22
90399	10/27/2009	5819.68	20.22
90399	7/15/2009	5839.9	17.91
90402	1/14/2009	5936.94	16.26
90402	4/9/2009	5937.19	16.01
90402	10/1/2009	5937.05	16.15
90402	7/15/2009	5953.2	5.01
90804	1/21/2009	5851.07	44.02
90804	4/8/2009	5850.84	44.25
90804	10/1/2009	5851.24	43.85
91105	1/15/2009	5942.81	12.32
91105	4/9/2009	5942.91	12.22
91105	7/14/2009	5948.29	6.84
91105	10/6/2009	5947.38	7.75
91203	1/15/2009	5929.43	8.71
91203	4/9/2009	5929.74	8.4
91203	5/11/2009	5933.97	4.17
91203	7/14/2009	5934.47	3.67
91203	10/6/2009	5933.06	5.08
91203	11/3/2009	5932.83	5.31
91305	1/15/2009	5925.29	6.23
91305	4/9/2009	5925.96	5.56
91305	5/12/2009	5926.47	5.05
91305	7/14/2009	5928.47	3.05
91305	10/6/2009	5927.86	3.66
91305	11/3/2009	5927.91	3.61
95099	1/15/2009	5848.46	14.92
95099	4/9/2009	5849.13	14.25
95099	4/22/2009	5849.28	14.1
95099	7/7/2009	5849.34	14.04
95099	10/6/2009	5849.72	13.66
95099	10/26/2009	5849.8	13.58
95199	1/22/2009	5870.35	10.9
95199	4/9/2009	5869.1	12.15
95199	4/28/2009	5869.47	11.78
95199	7/7/2009	5869.95	11.3
95199	10/6/2009	5869.66	11.59
95199	10/20/2009	5869.9	11.35
95299	1/15/2009	Dry	Dry
95299	4/9/2009	Dry	Dry
95299	4/22/2009	Dry	Dry
95299	7/7/2009	Dry	Dry
95299	10/6/2009	Dry	Dry
95799	7/7/2009	5881.2	9.2
95899	1/15/2009	5886.91	21.4
99305	1/21/2009	5927.09	12.45

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
99305	4/9/2009	5926.92	12.62
99305	5/12/2009	5928.83	10.71
99305	7/14/2009	5929.49	10.05
99305	10/7/2009	5929.63	9.91
99305	10/15/2009	5929.58	9.96
99405	1/21/2009	5927.71	7.45
99405	4/9/2009	5928.19	6.97
99405	5/18/2009	5928.61	6.55
99405	7/14/2009	5928.35	6.81
99405	10/7/2009	5929.53	5.63
99405	10/15/2009	5929.25	5.91
891WEL	1/21/2009	5913.56	13.24
891WEL	4/9/2009	5913.78	13.02
891WEL	10/1/2009	5914.13	12.67
891WEL	7/15/2009	5926.8	11.14
B206989	1/15/2009	5863.57	20.61
B206989	4/8/2009	5865.9	18.28
B206989	4/22/2009	5866.33	17.85
B206989	10/7/2009	5865.93	18.25
B206989	11/10/2009	5866.9	17.28
B210489	1/21/2009	5854.77	3.9
B210489	4/8/2009	5855.16	3.51
B210489	6/16/2009	5856.23	2.44
B210489	10/7/2009	5856.28	2.39
P114389	1/8/2009	5984.6	8.46
P114389	4/13/2009	5985.16	7.9
P114389	10/7/2009	5984.97	8.09
P114389	7/15/2009	5993.06	7.45
P114689	1/8/2009	5992.92	12.61
P114689	4/9/2009	5996.92	8.61
P114689	5/1/2009	6000.98	4.55
P114689	7/13/2009	5999.27	6.26
P114689	10/7/2009	5995.17	10.36
P115589	1/21/2009	6002.43	11.35
P115589	4/13/2009	6006.23	7.55
P115589	5/1/2009	6010.91	2.87
P115589	7/14/2009	6010.01	3.77
P115589	10/7/2009	6004.73	9.05
P208989	1/21/2009	5947.98	16.32
P208989	4/8/2009	5948.8	15.5
P208989	7/14/2009	5951.56	12.74
P208989	10/7/2009	5949.16	15.14
P210089	1/21/2009	5889.32	14.87
P210089	4/8/2009	5891.52	12.67
P210089	6/11/2009	5898.32	5.87
P210089	10/7/2009	5895.99	8.2
P210089	10/14/2009	5897.64	6.55

Table A−24. Groundwater Elevation Data: CY 2009

Location Code	Log Date	Water Elevation (feet)	Depth from TOC (feet)
P210189	1/8/2009	5965.71	16.45
P210189	4/9/2009	5964.47	17.69
P210189	5/1/2009	5968.85	13.31
P210189	7/14/2009	5970.95	11.21
P210189	10/7/2009	5968.27	13.89
P416589	1/8/2009	6010.51	32.16
P416589	3/3/2009	6010.18	32.49
P416589	4/8/2009	6010.2	32.47
P416589	5/21/2009	6016.12	26.55
P416589	10/6/2009	6013.03	29.64
P416589	11/11/2009	6012.52	30.15
P416589	7/15/2009	6042.67	23.63
P416889	1/8/2009	5998.55	20.37
P416889	4/8/2009	5998.94	19.98
P416889	10/6/2009	6000.06	18.86
P416889	7/15/2009	6018.92	14.74
P419689	1/21/2009	6001.19	22.05
P419689	4/8/2009	6002.53	20.71
P419689	10/6/2009	6002.41	20.83
P419689	7/15/2009	6023.24	16.61

A.4 Groundwater Hydrographs

Hydrographs were constructed by first assembling all 2009 water level data for the RFLMA wells (DOE 2008d) and other groundwater locations existing through 2009. These data were then reviewed and prepared for display by merging them with water level data compiled for the 2008 Annual Report (DOE 2008b). The resulting hydrographs show water levels for current wells together with historic water levels for their predecessors, as applicable. (A separate set of hydrographs were prepared that include automated water level data; see separate description preceding those files.)

Data were adjusted as described in Table A–25 below.

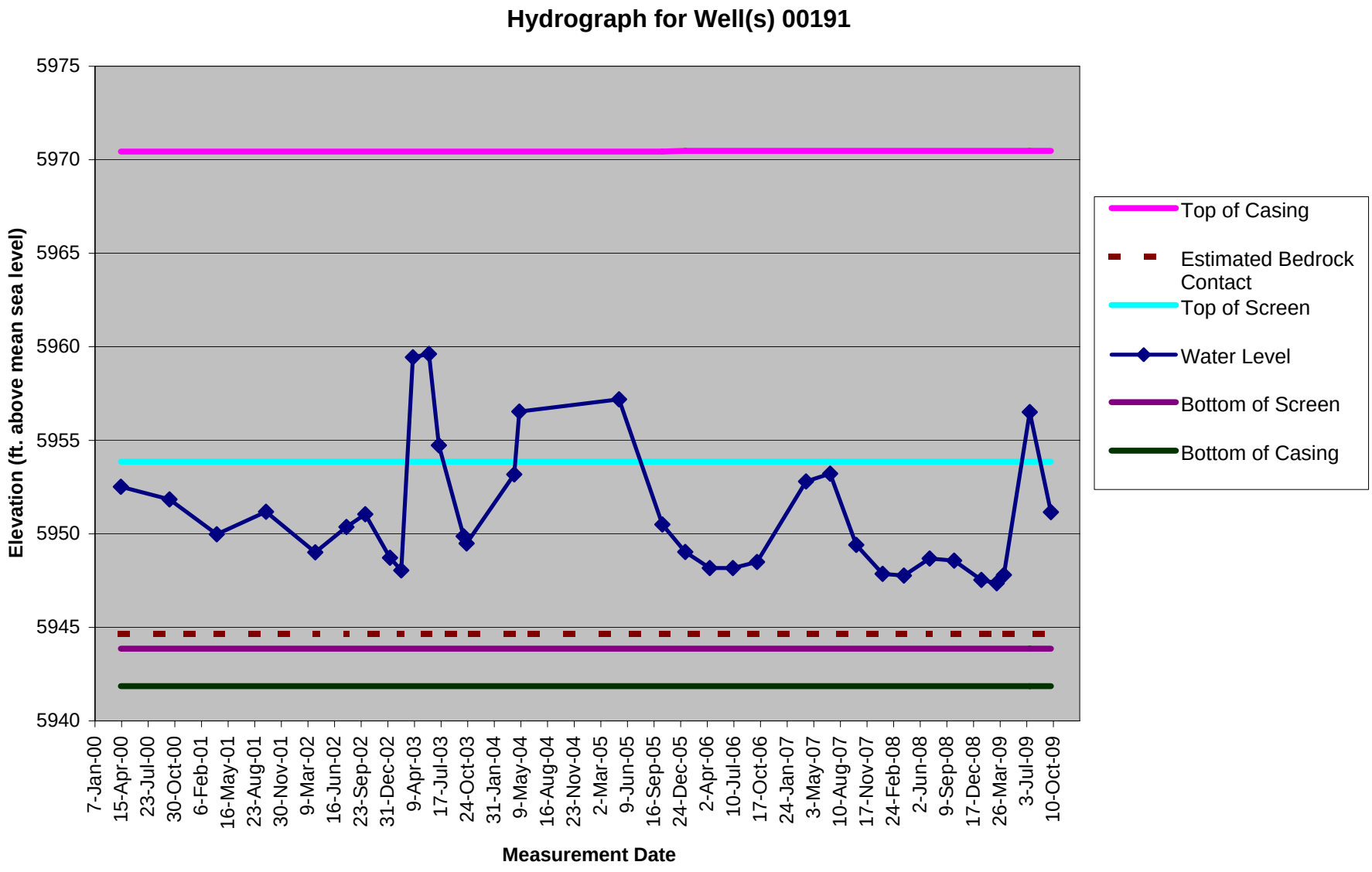
Table A–25. Adjustments to Groundwater Level Data for Hydrograph Generation

Original Entry	Converted To	Rationale
"D" or "Dry"	Calculated well TD	The actual water level may be as shallow as the bottom of the screened interval, but equating it to the bottom of the well is standard practice.
"Technically dry", or water level equivalent to technically dry	Calculated well TD	The actual water level may be as shallow as the bottom of the screened interval, but considering "technically dry" to be equivalent to "dry" is standard practice.
"Dry to the top of the pump"*	Calculated well TD	The actual water level may have been within the screened interval, but there is no way of determining the actual level based on the water level data recorded. Therefore, because wells that were dry to the top of the pump were often shown to be truly dry during later sampling, by convention the well was considered "dry".
Blank or N/A*	Record deleted	Non-entries and entries of "N/A" often referred to instances in which performing the water level measurement was not possible because of downhole tooling in the well, inaccessibility of the well, etc.
Water level below calculated TD*	Record deleted	Calculated TDs are based on measurements made during well construction, which may not be as accurate as those made during water level measurement. However, the latter show variability from one measurement to another. Calculated TDs were therefore selected to represent the bottom of the well. Because some water level records indicated a water level significantly deeper than the calculated TD, all were considered spurious data and were removed from the dataset.
Data for wells that had already been replaced*	Record deleted	Several wells replacements were installed before the original wells were abandoned. As soon as the replacement was deemed appropriate for use, the original well was removed from the program. Any water level measurements collected from the original on or after that date were removed from the hydrograph dataset.
Multiple entries on same day*	Redundant records deleted	On occasion, the water level in a well was measured more than once in the same day. Although usually the water levels were identical or within a few hundredths of a foot, the later water level measurements were deleted to clean up the dataset and resulting hydrographs.

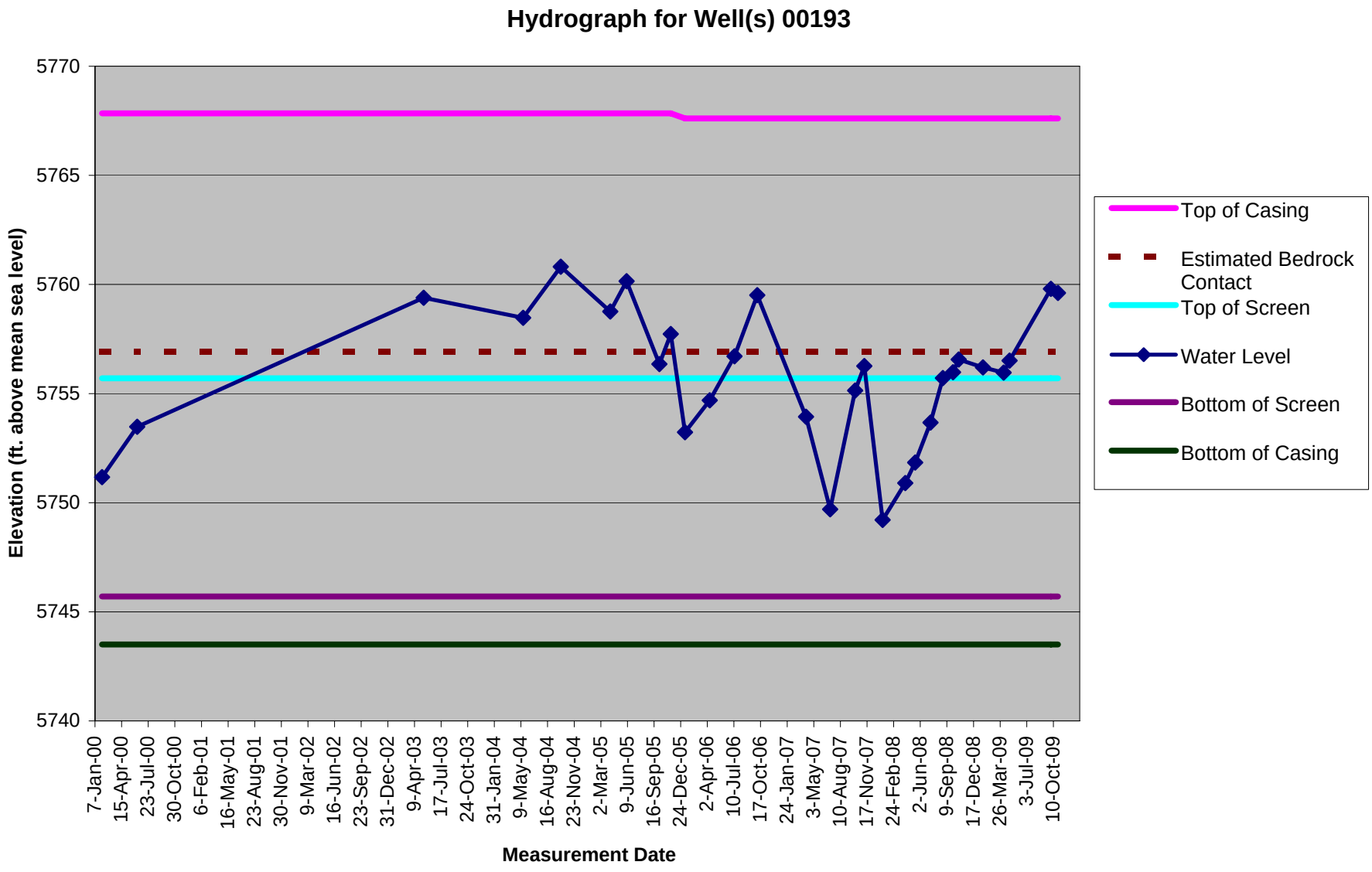
TD = total depth of well.
"Technically dry" is the condition in which all water within a well is within the (non-perforated) sump below the base of the screened interval, and therefore does not reflect and is isolated from the local groundwater.
* = results were adjusted for the 2005 Annual Report (DOE 2006e) and needed no additional adjustment for the current report. See the 2005 report for additional explanation.

A.4.1 Hydrographs for Manually Collected Water Level Data

The following hydrographs were generated using 2009 water level data collected manually.



From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)



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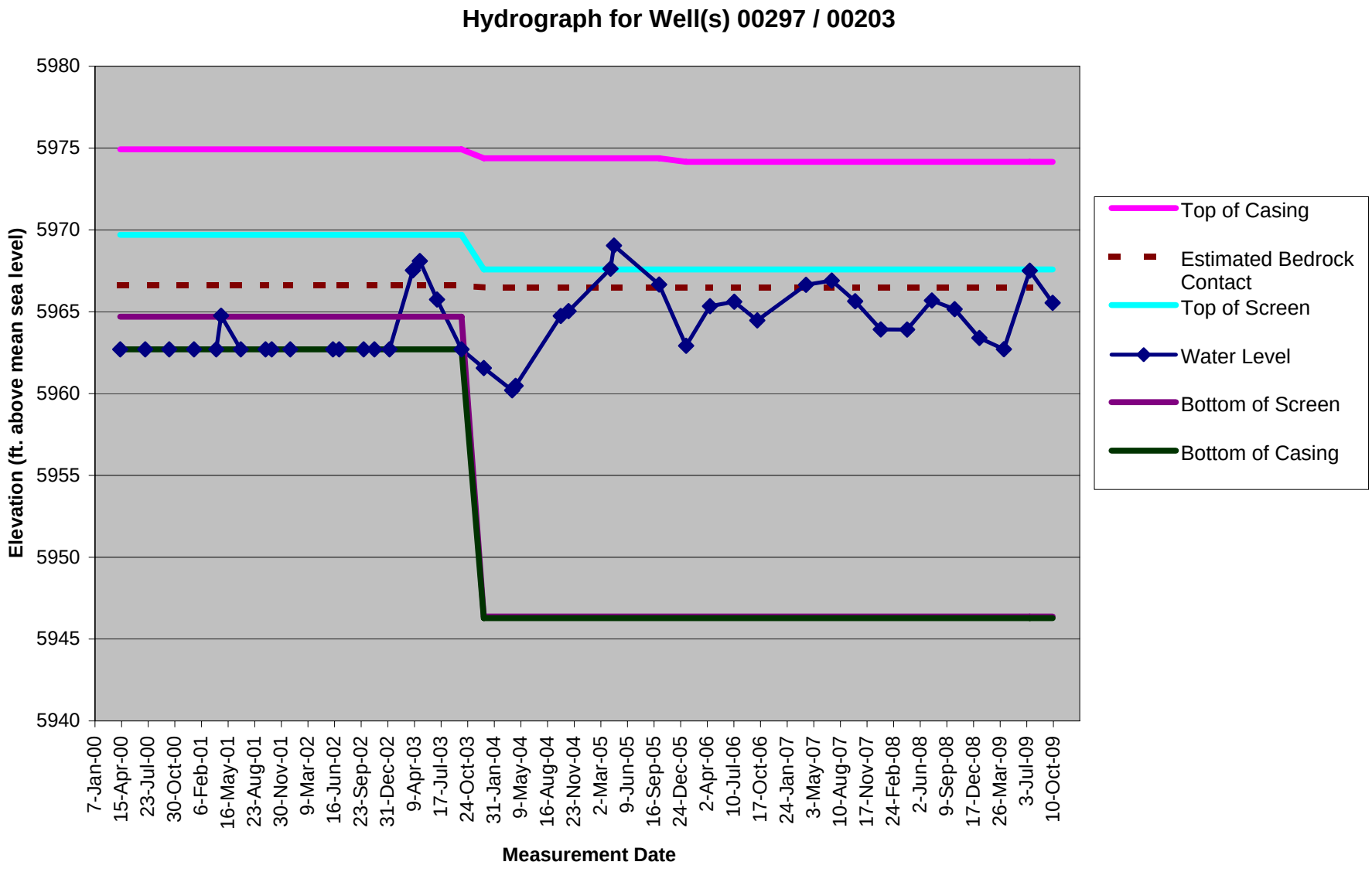

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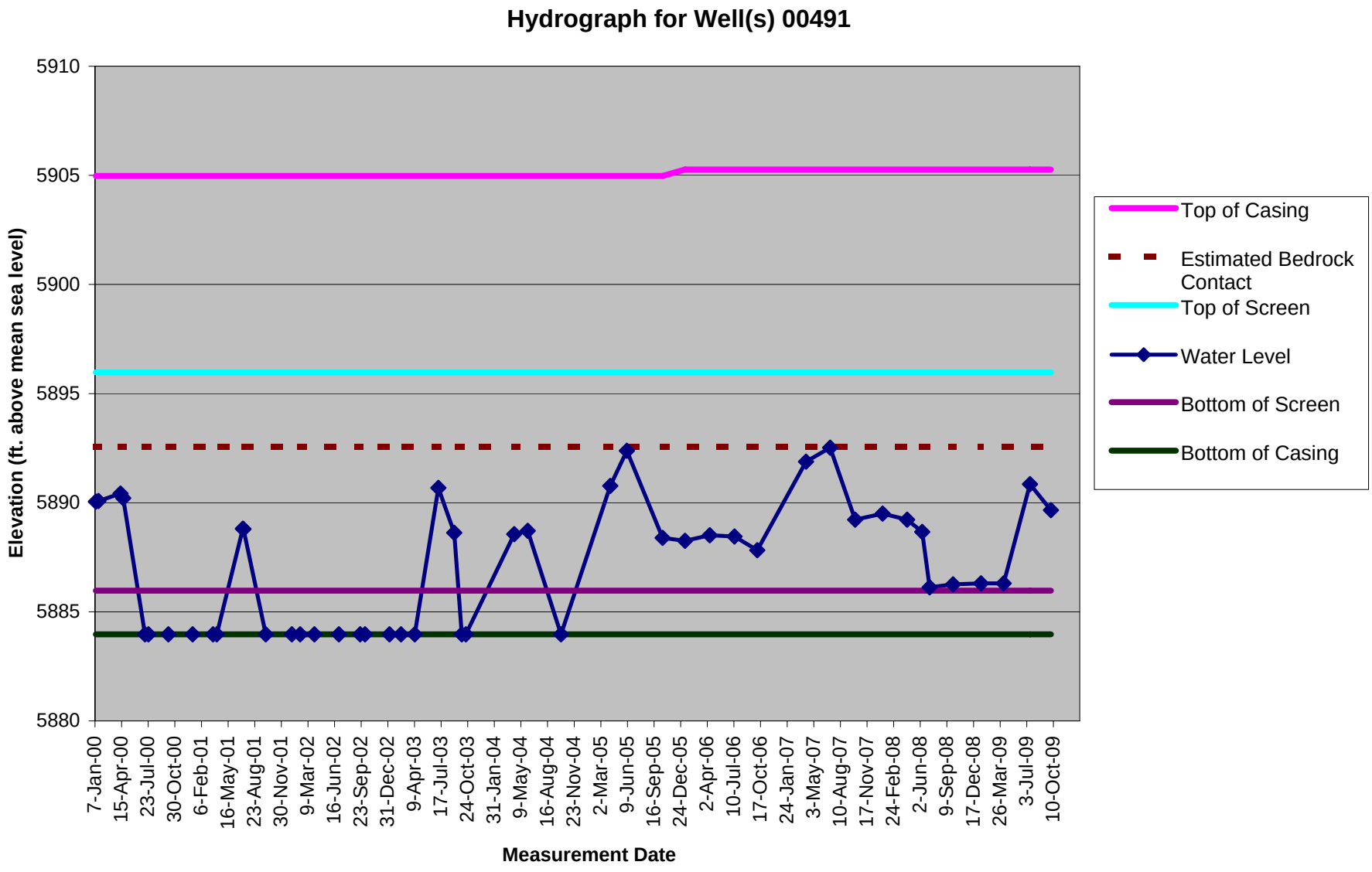

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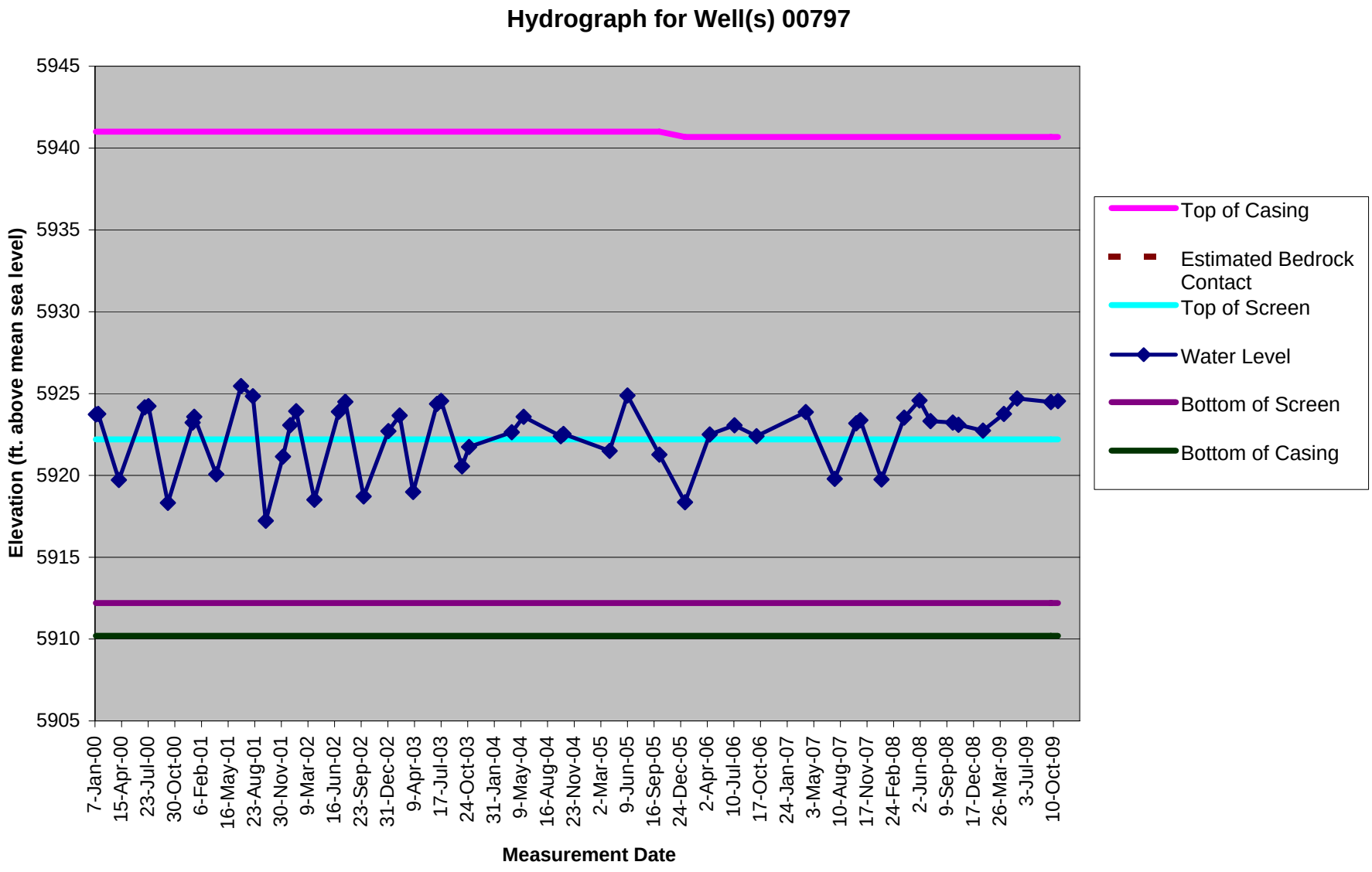

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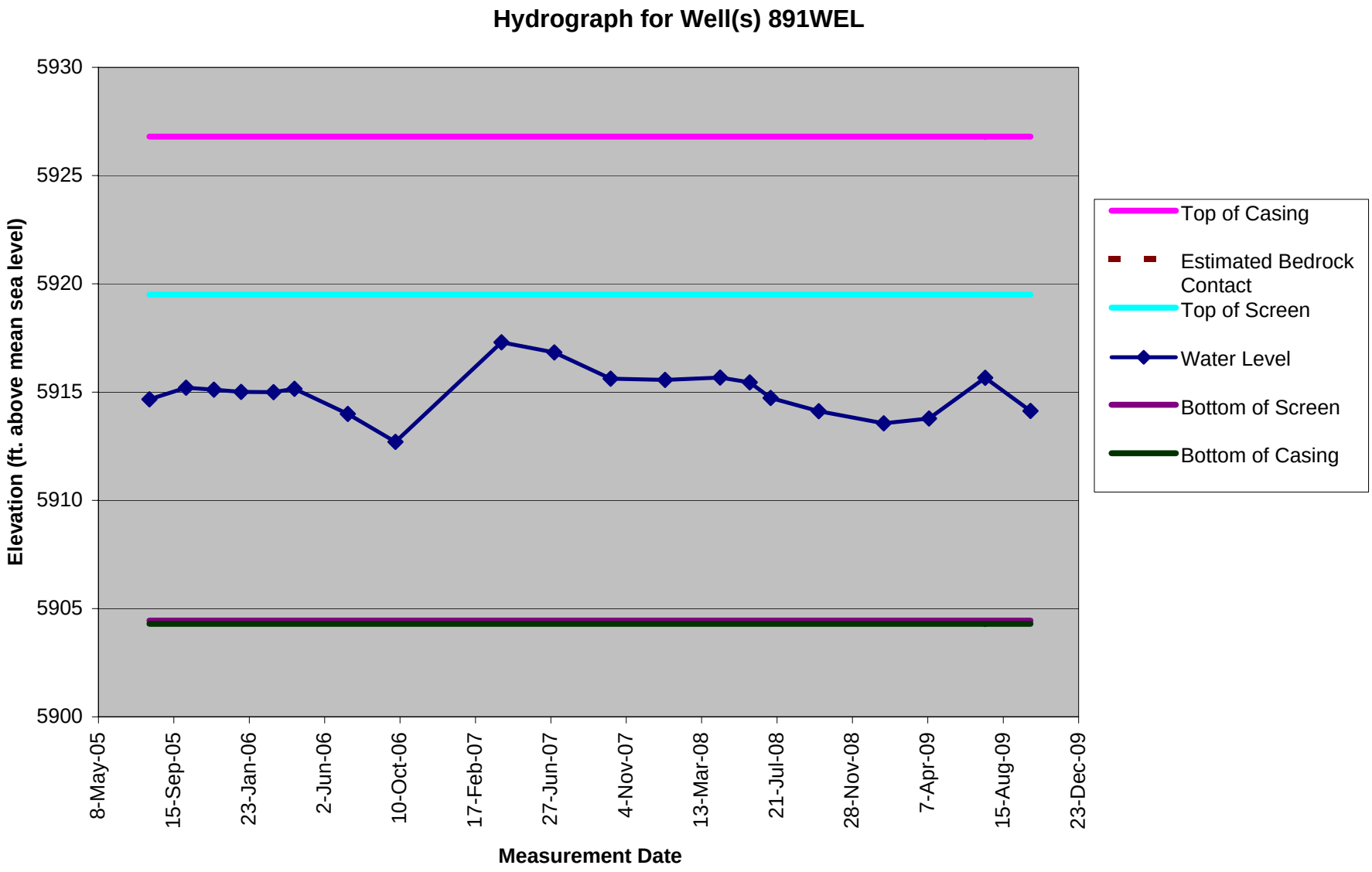

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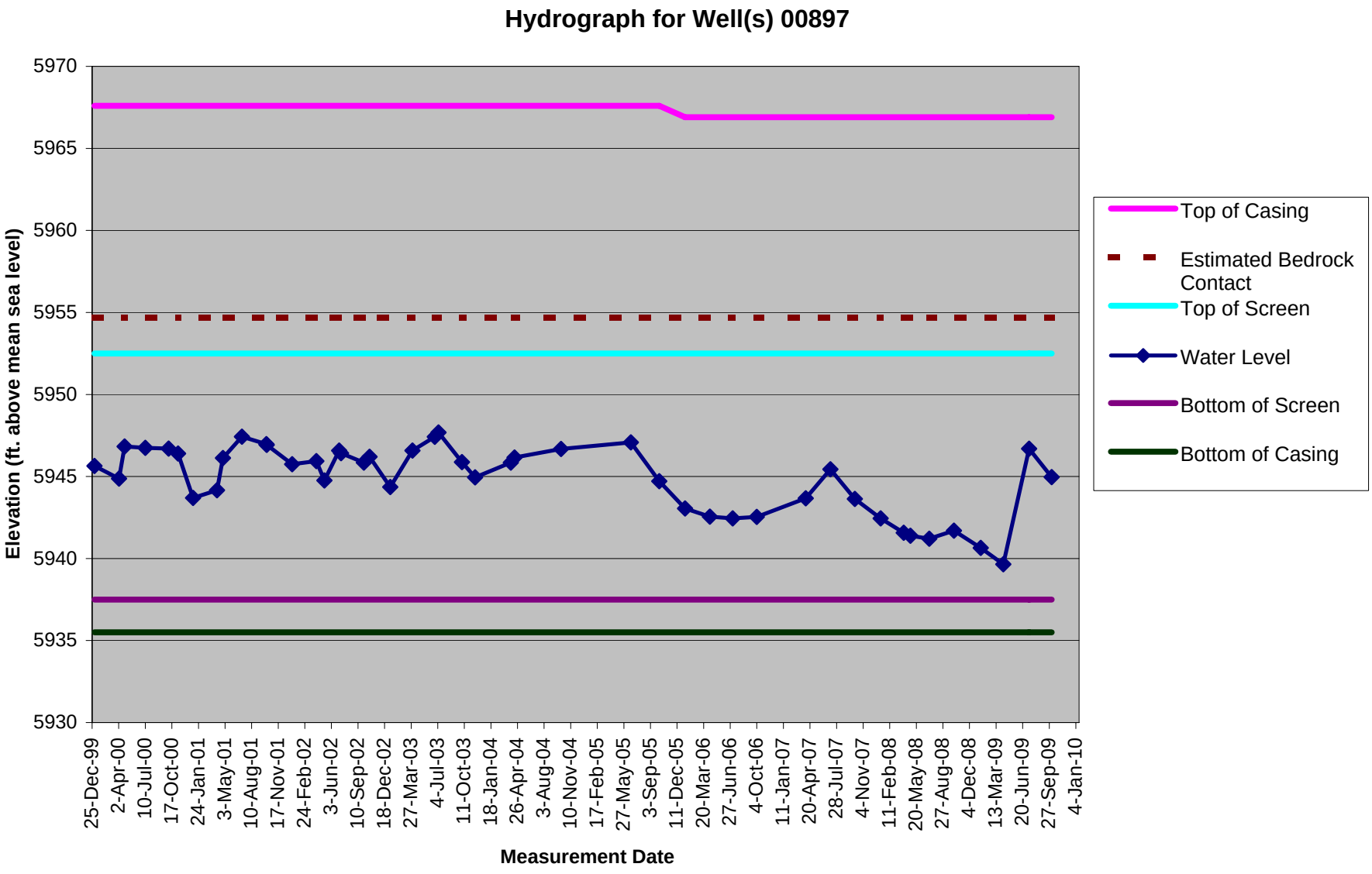

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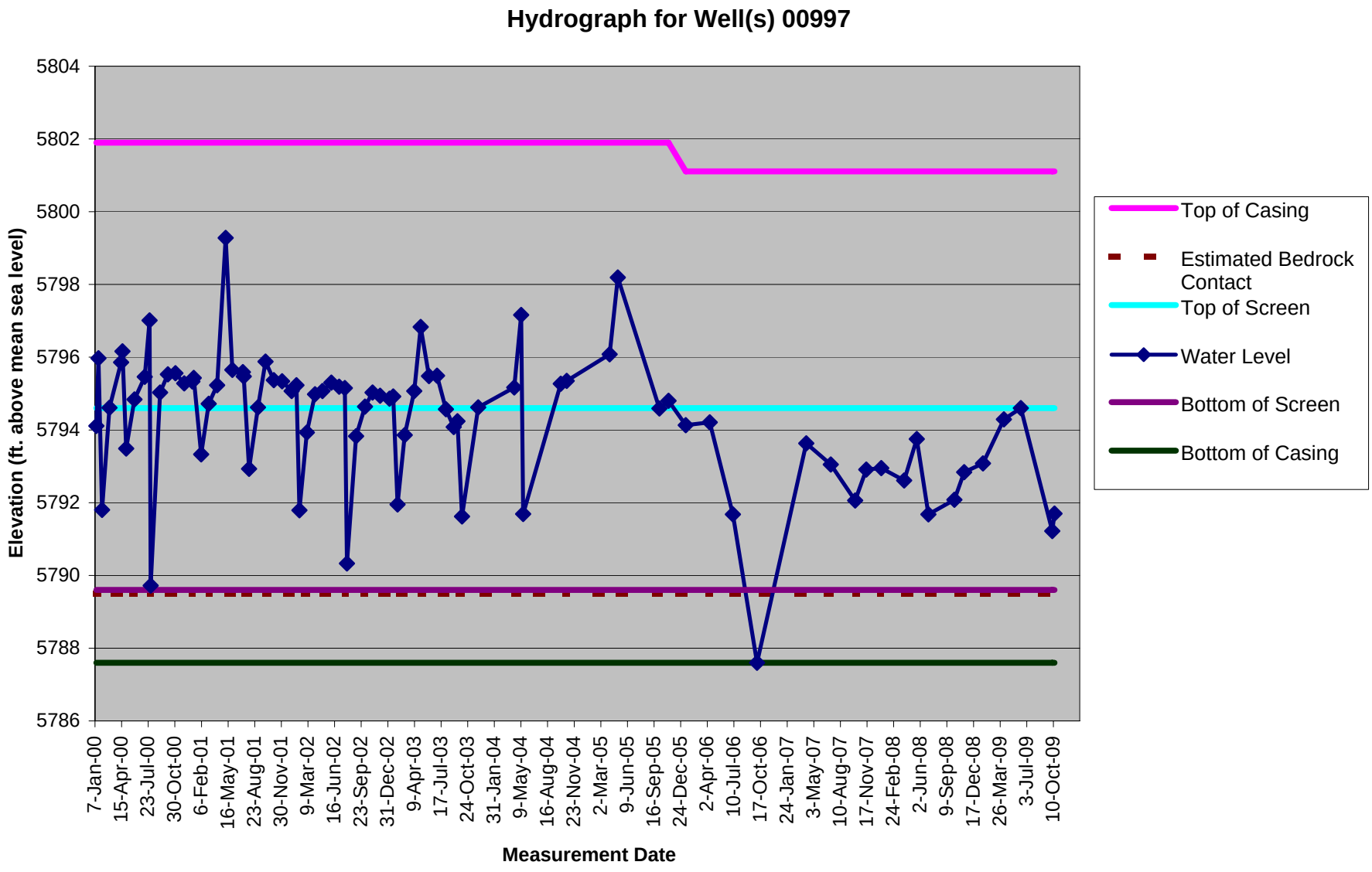

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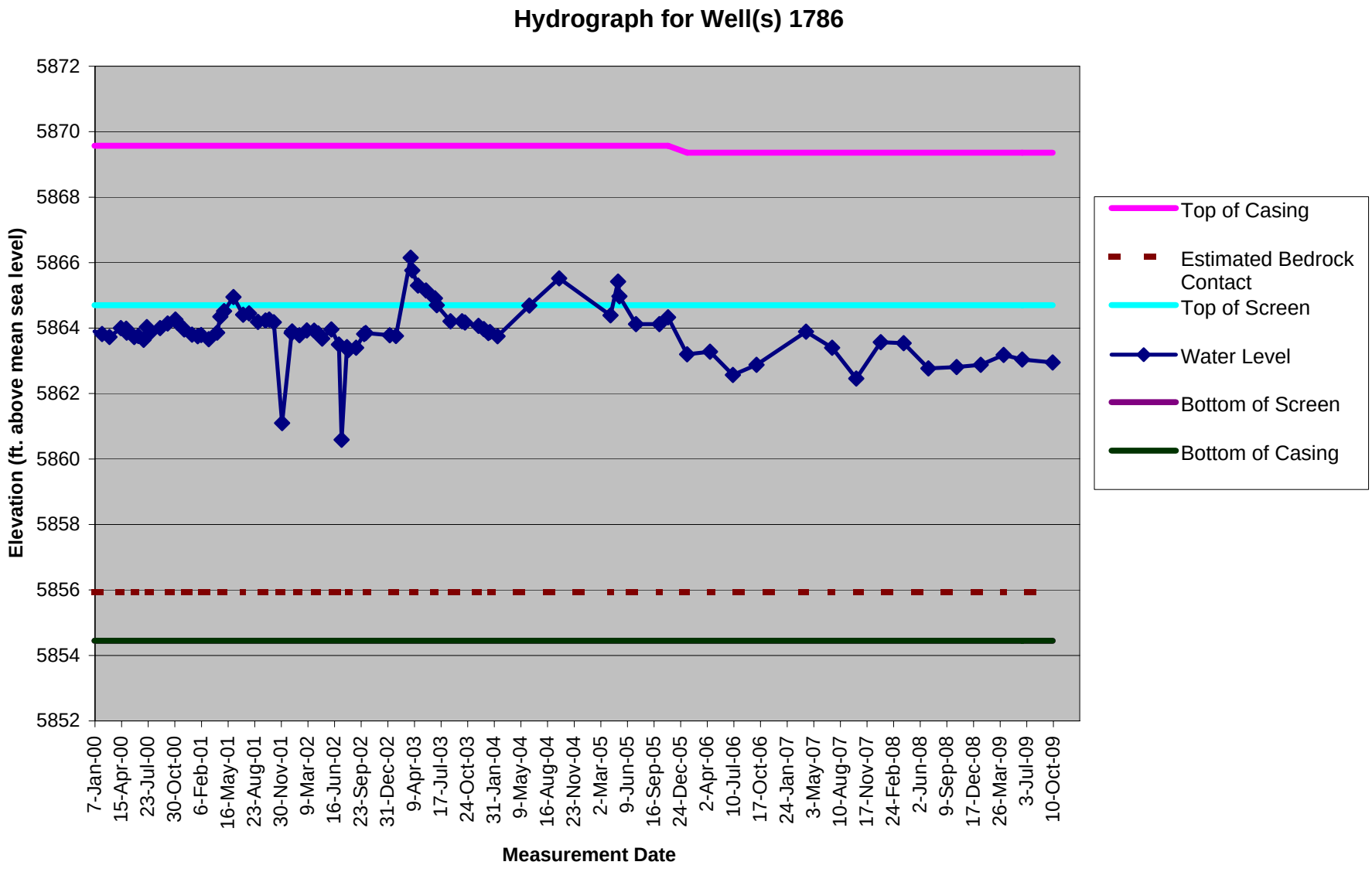

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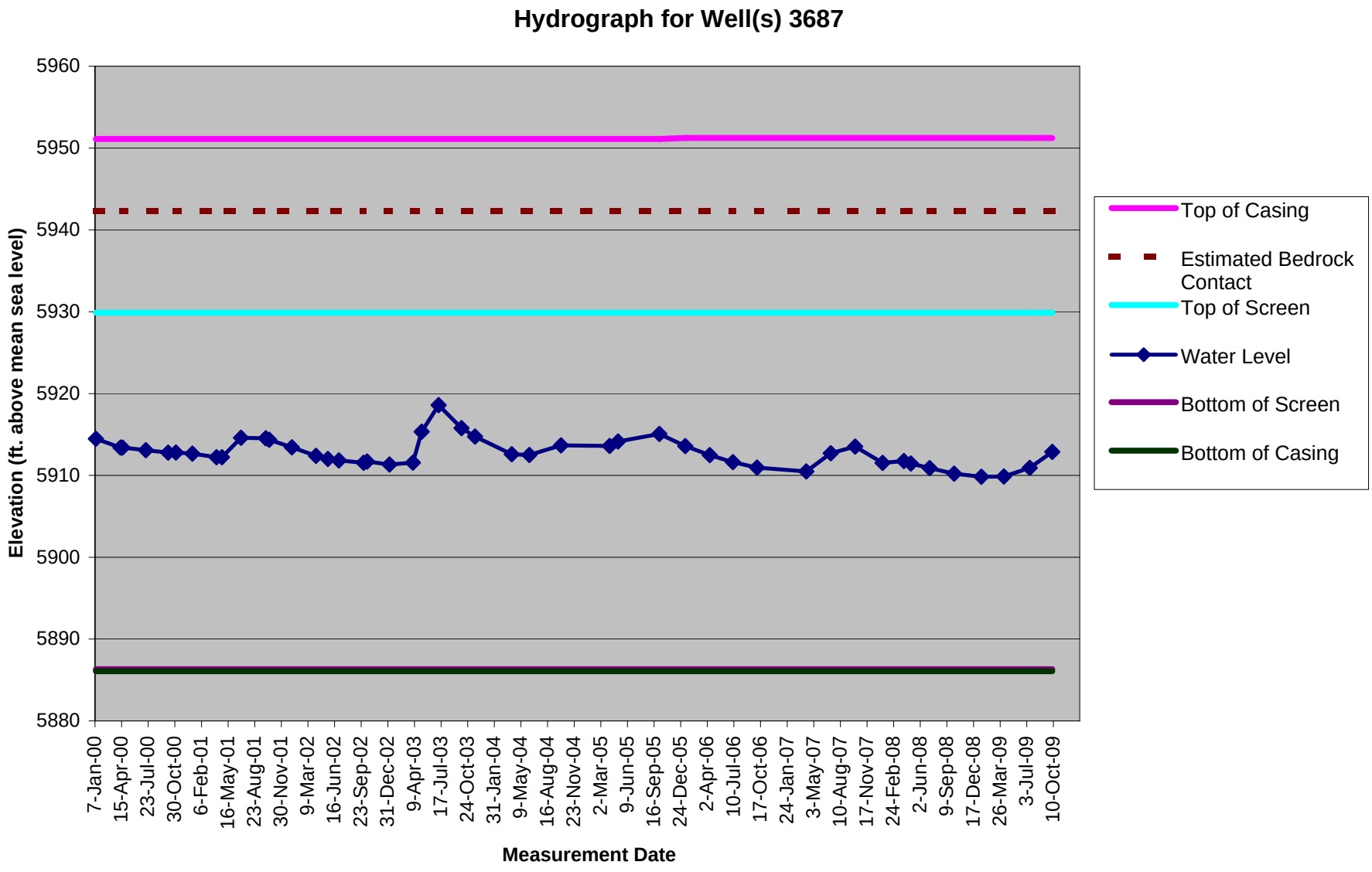

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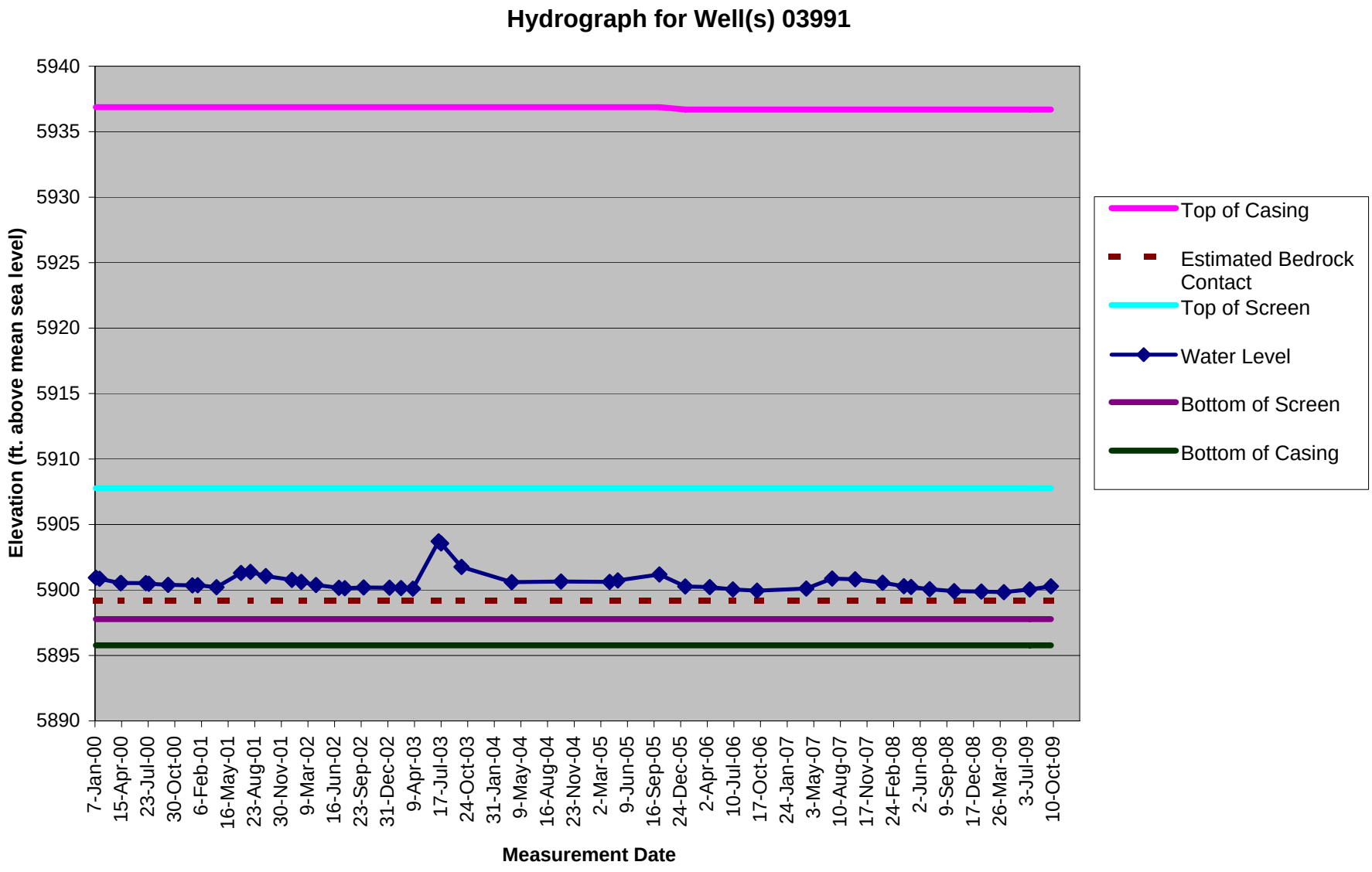

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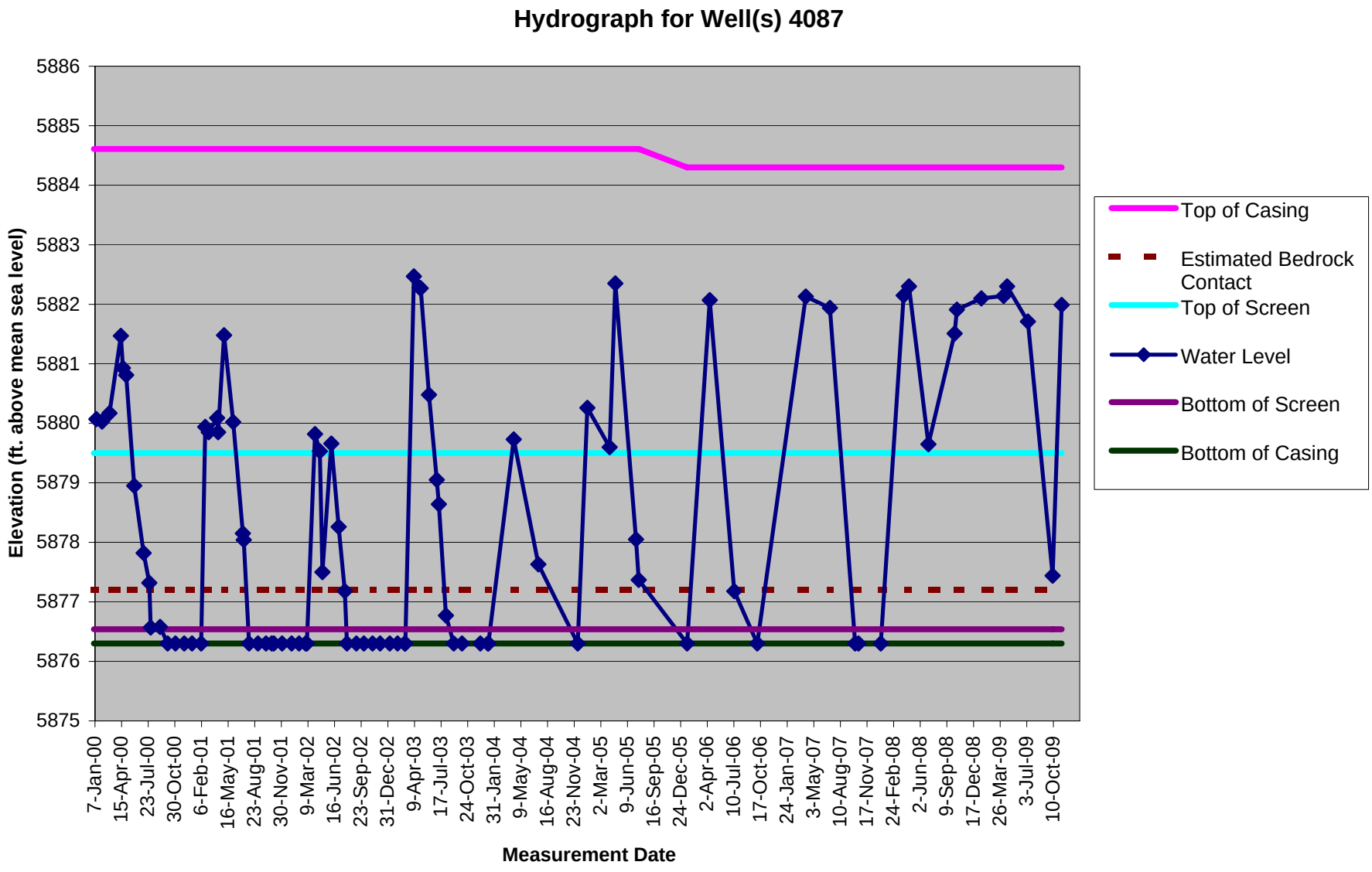

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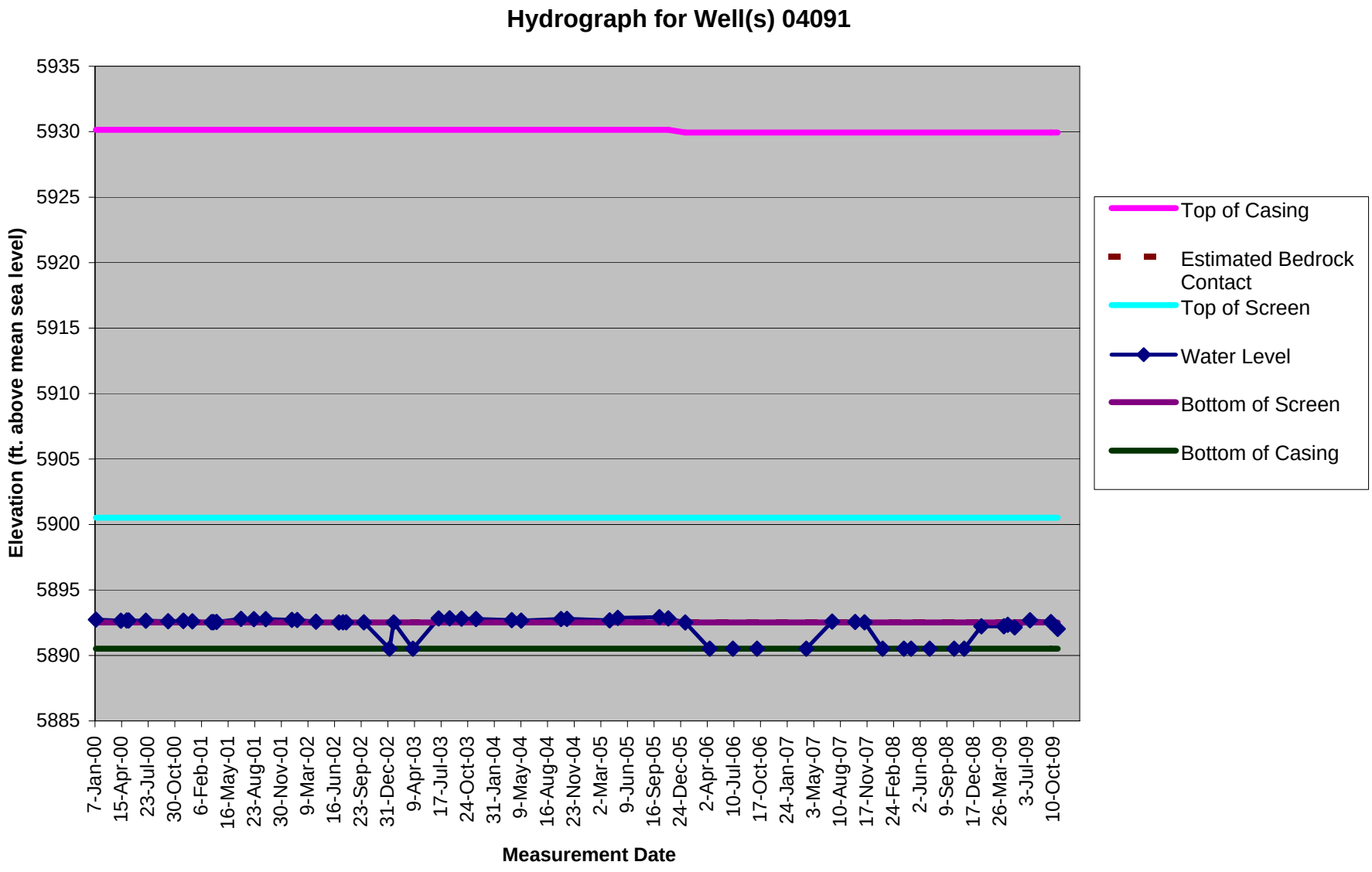

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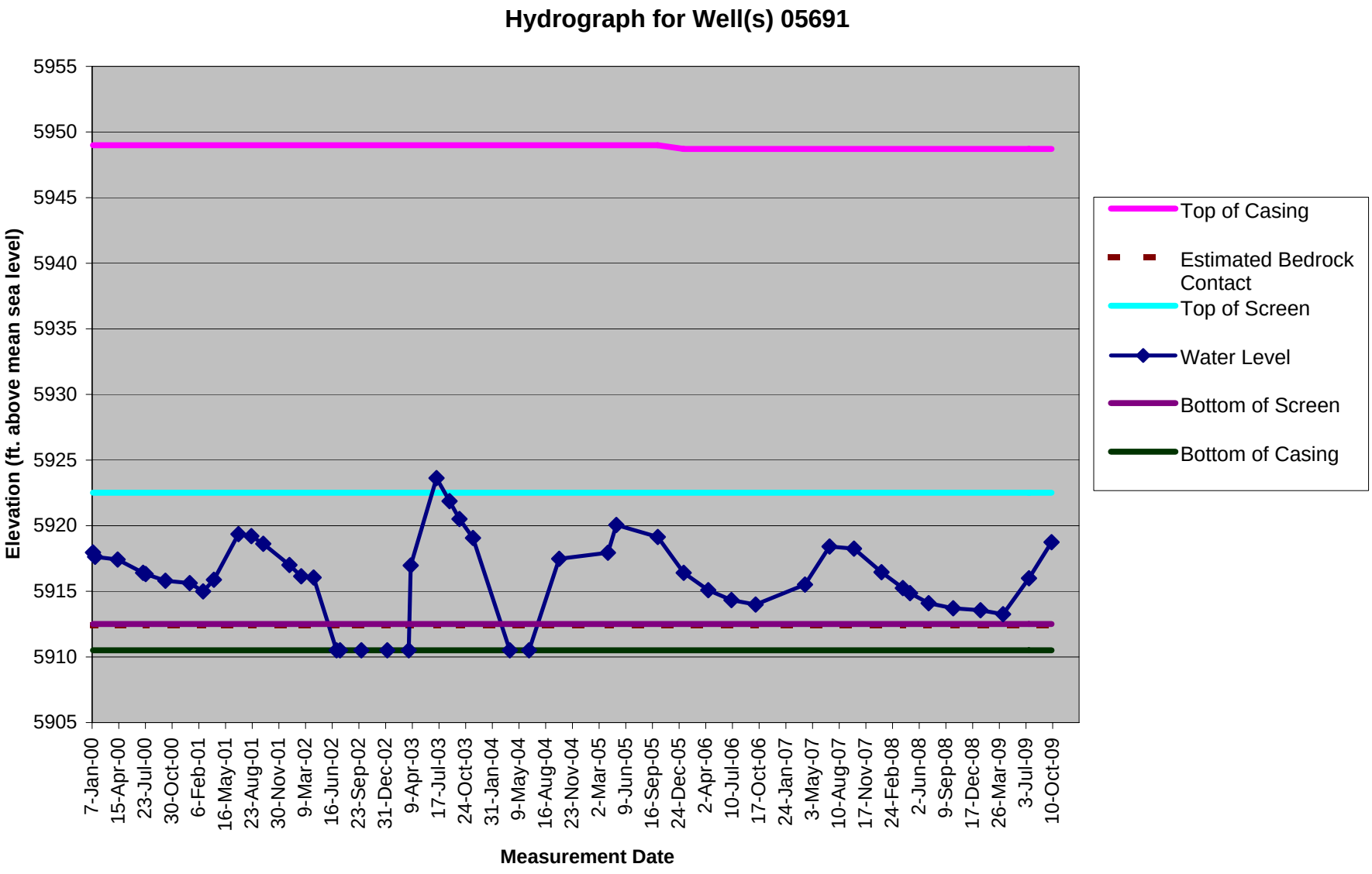

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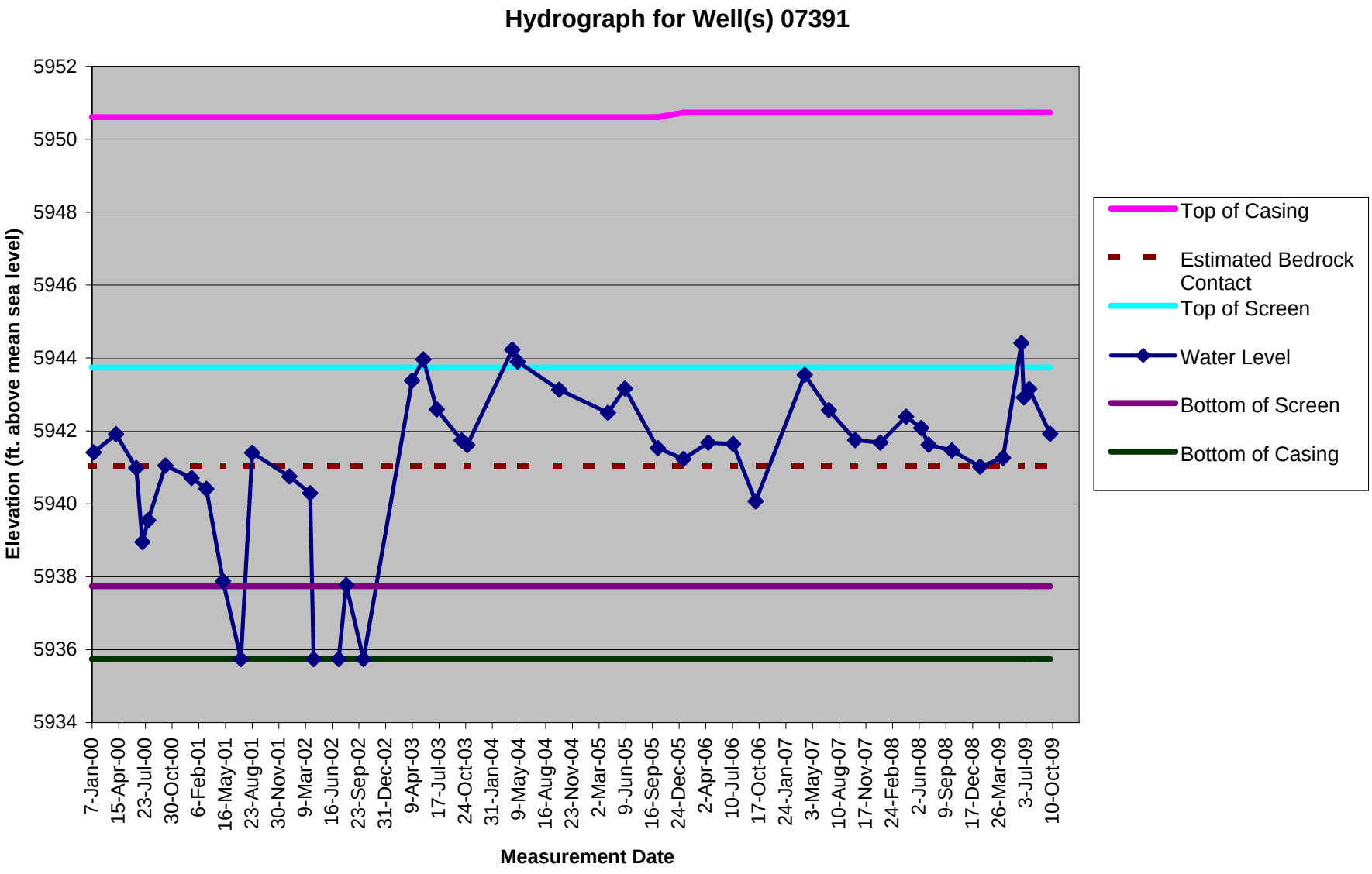

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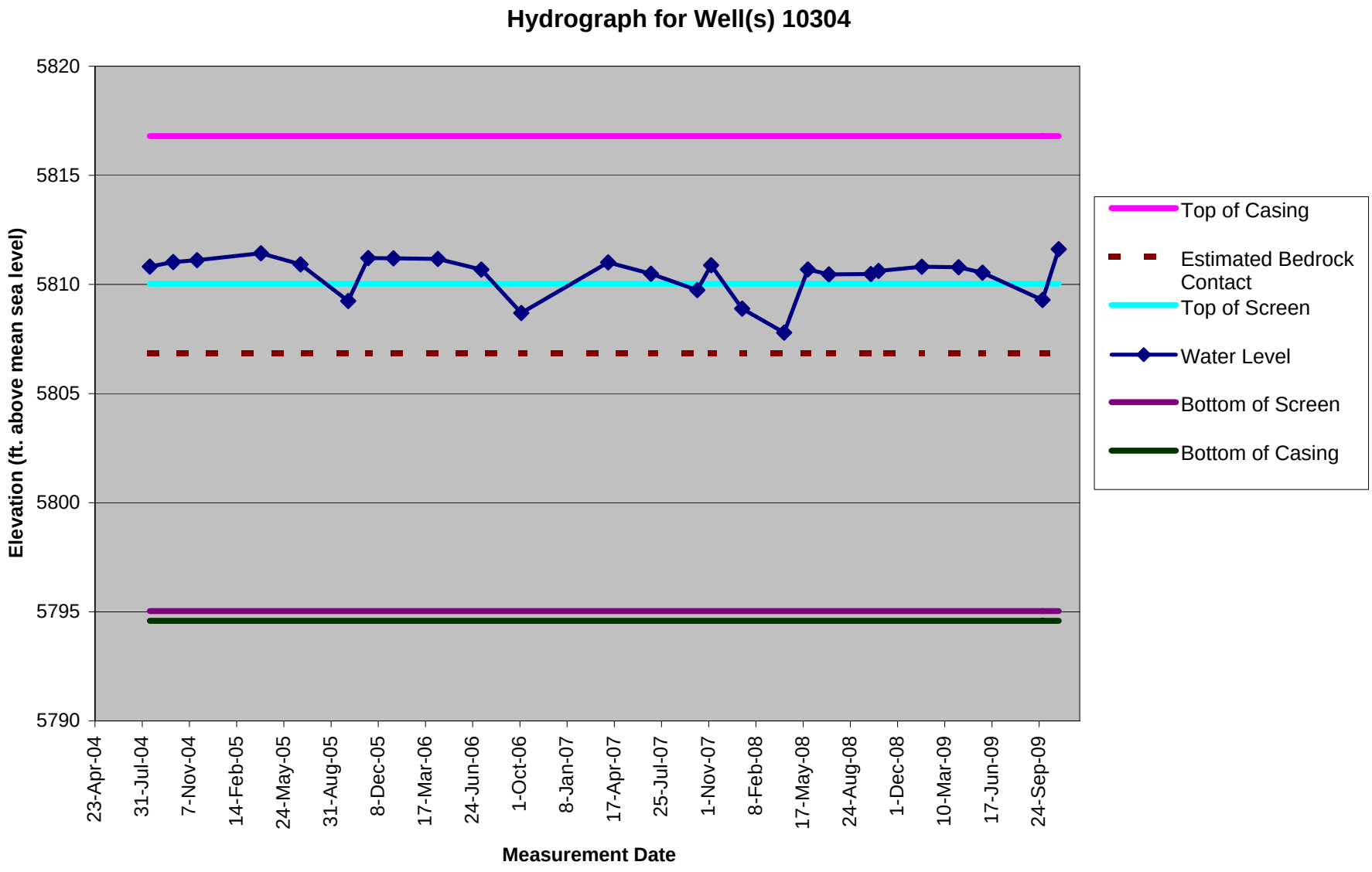

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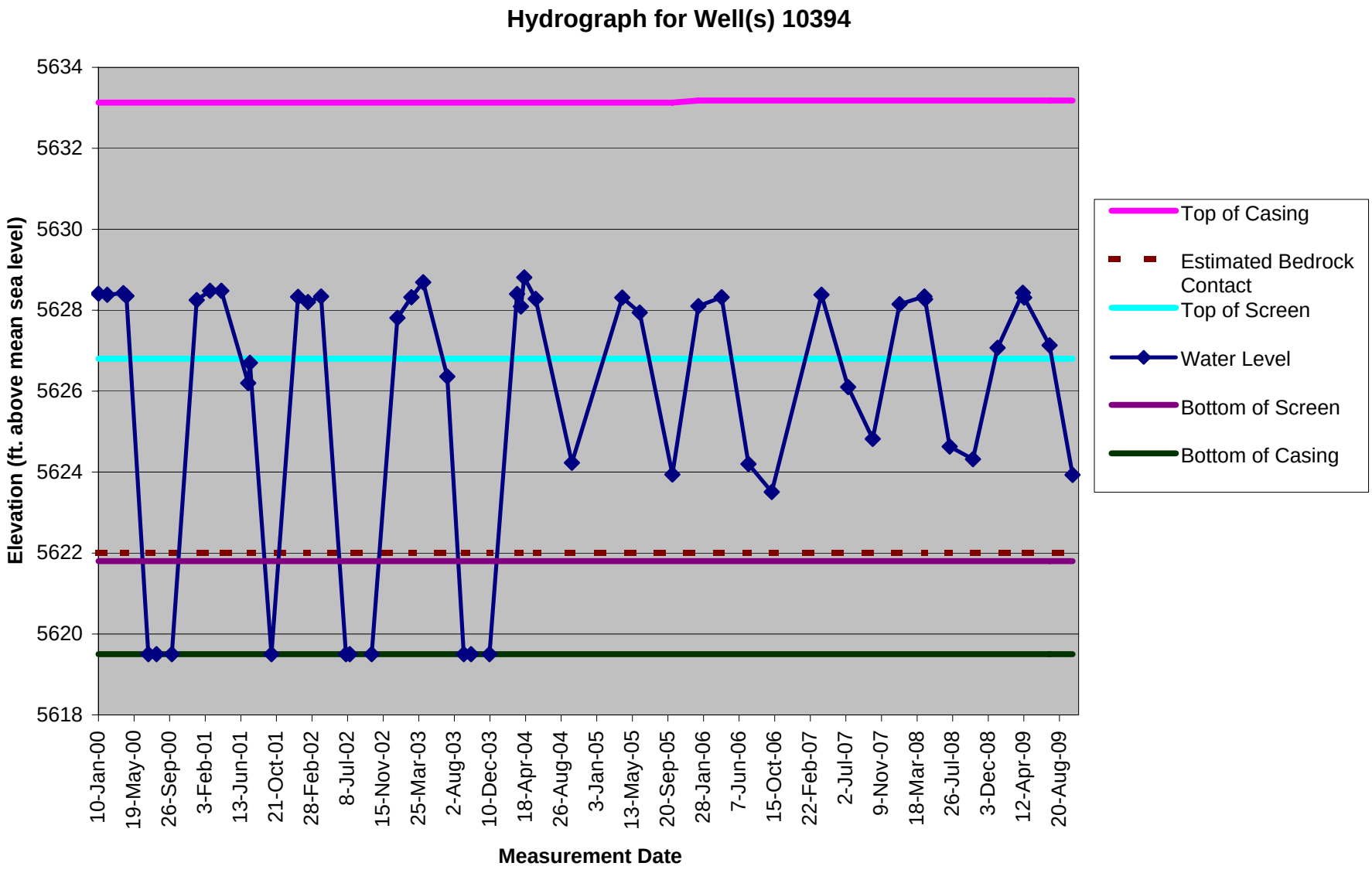

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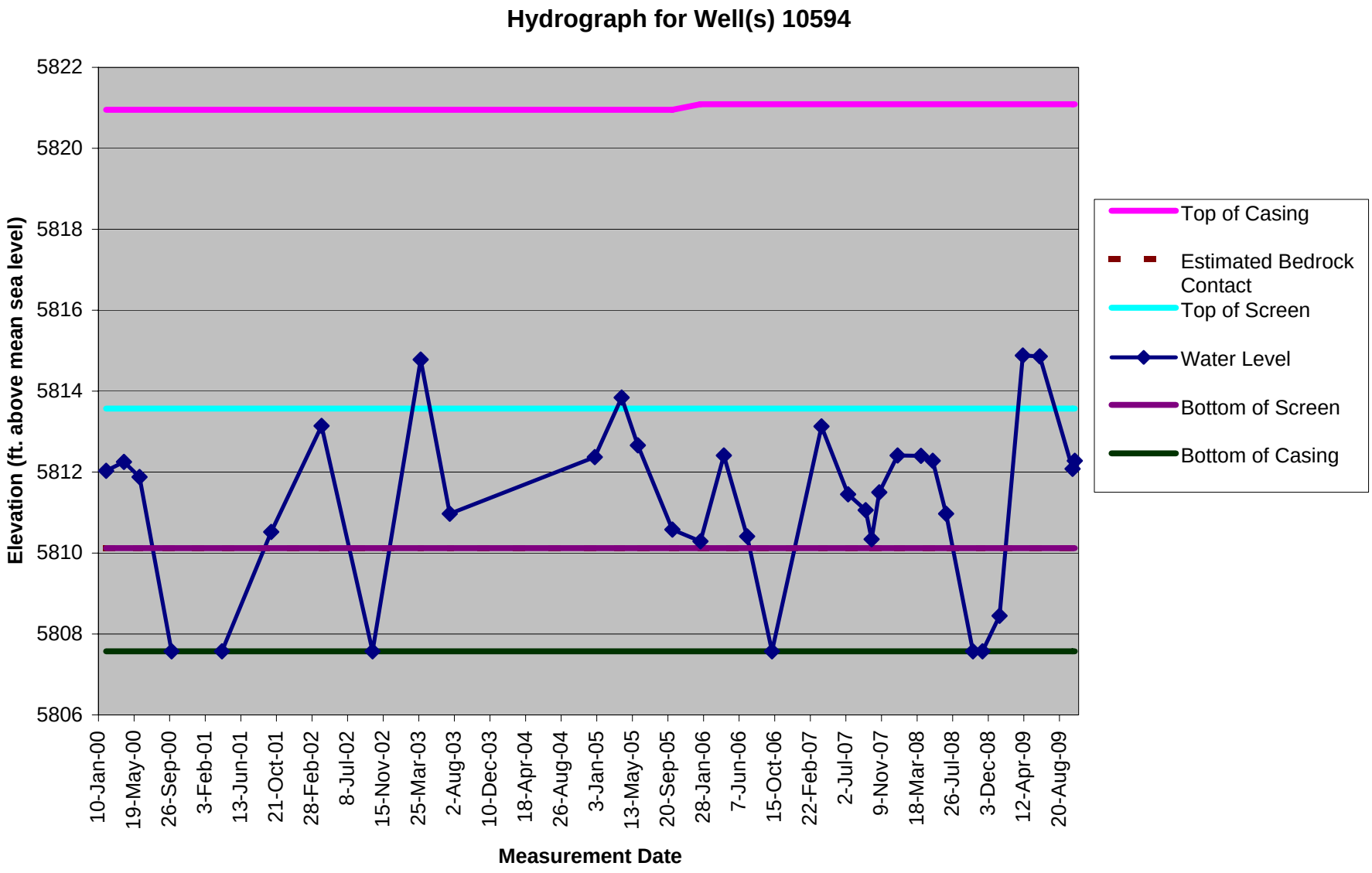

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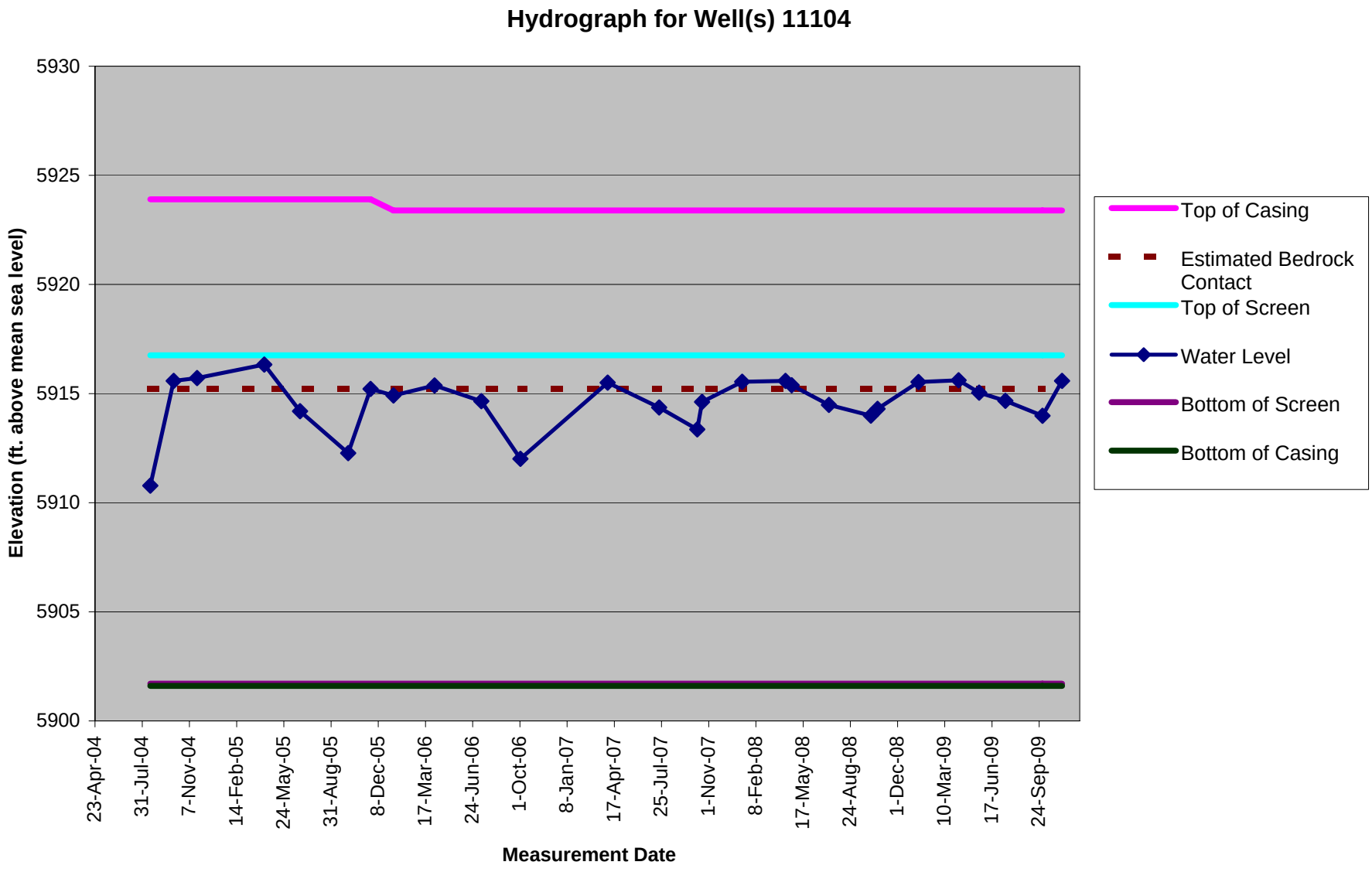

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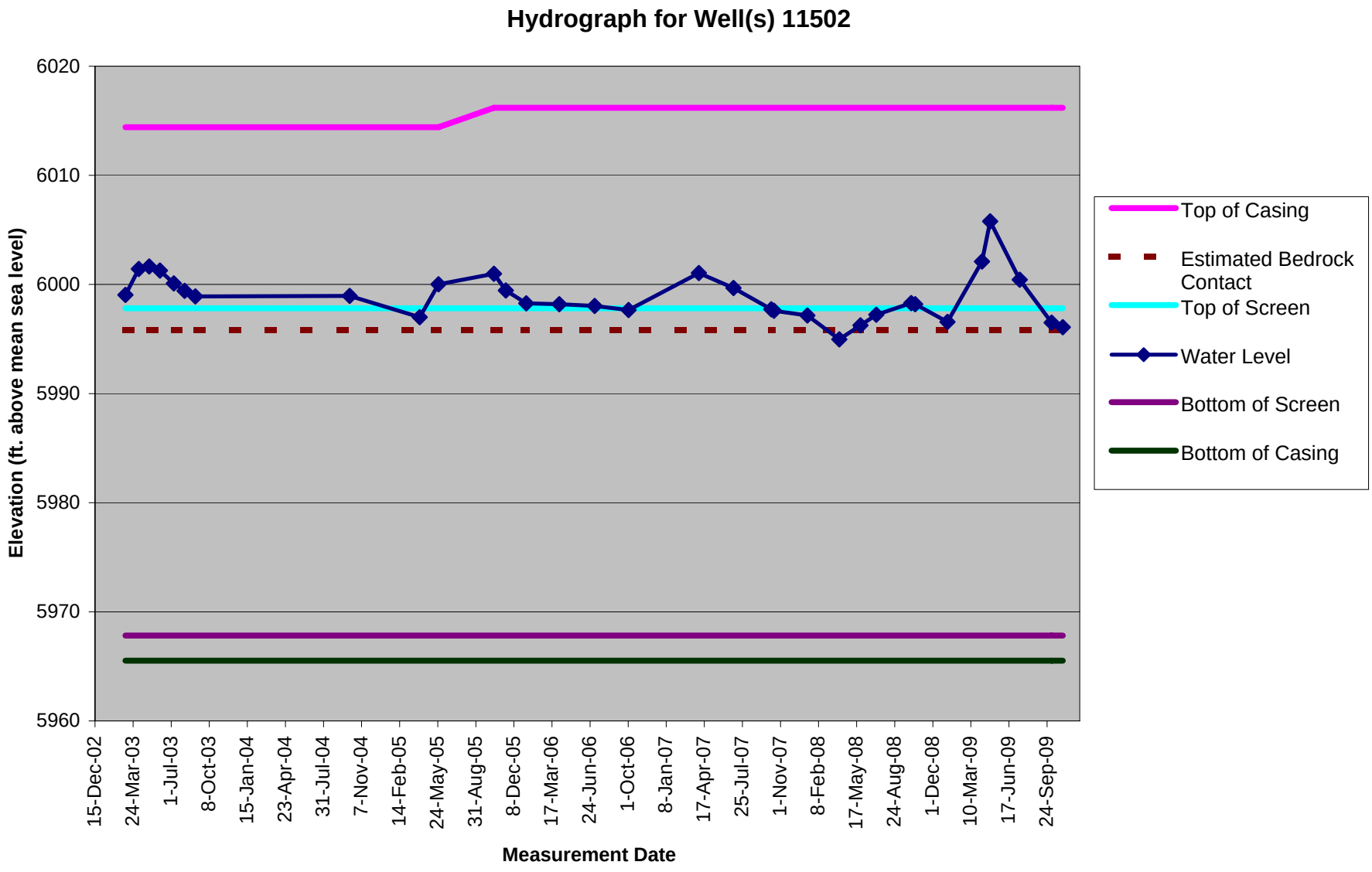

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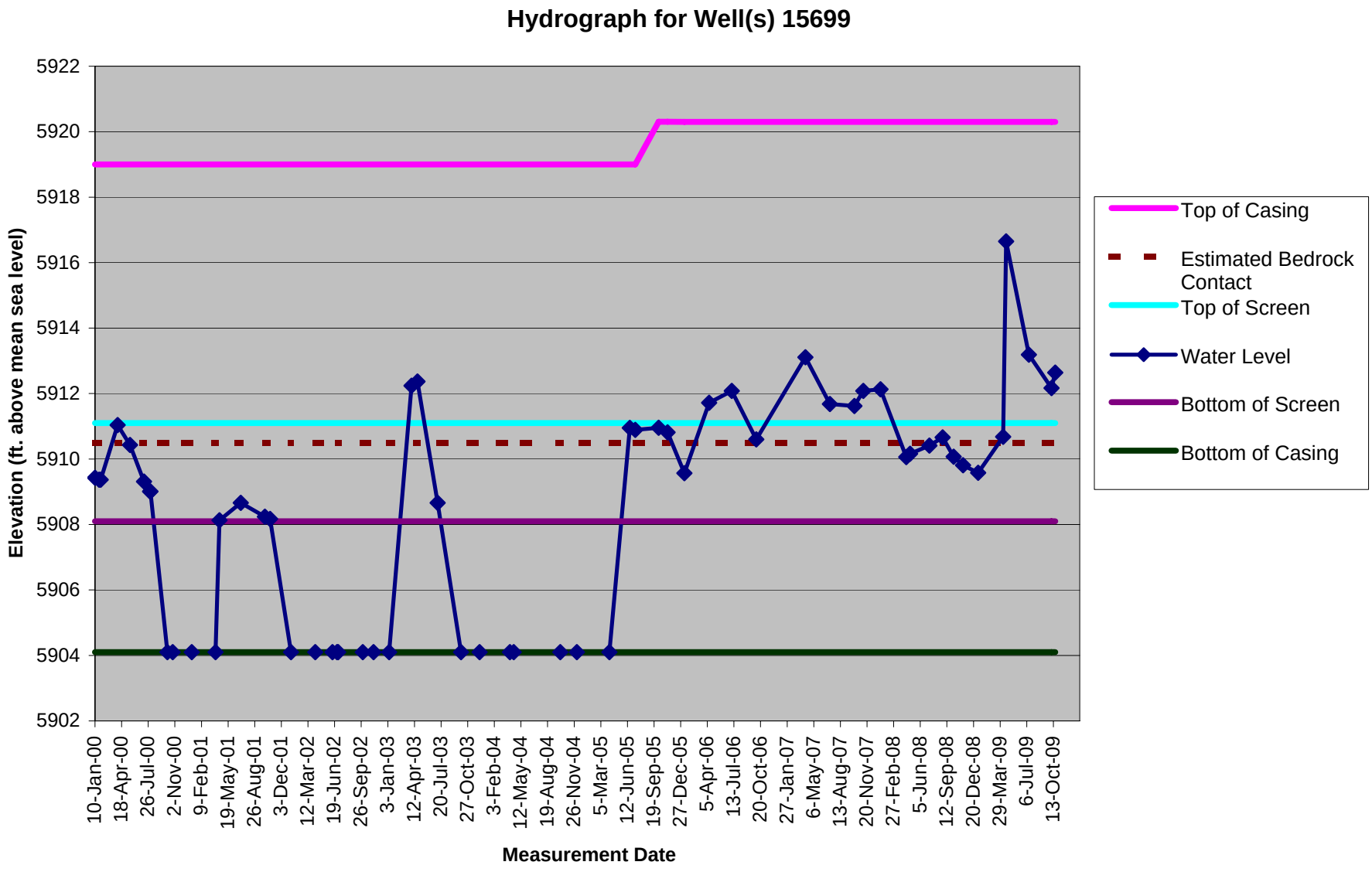

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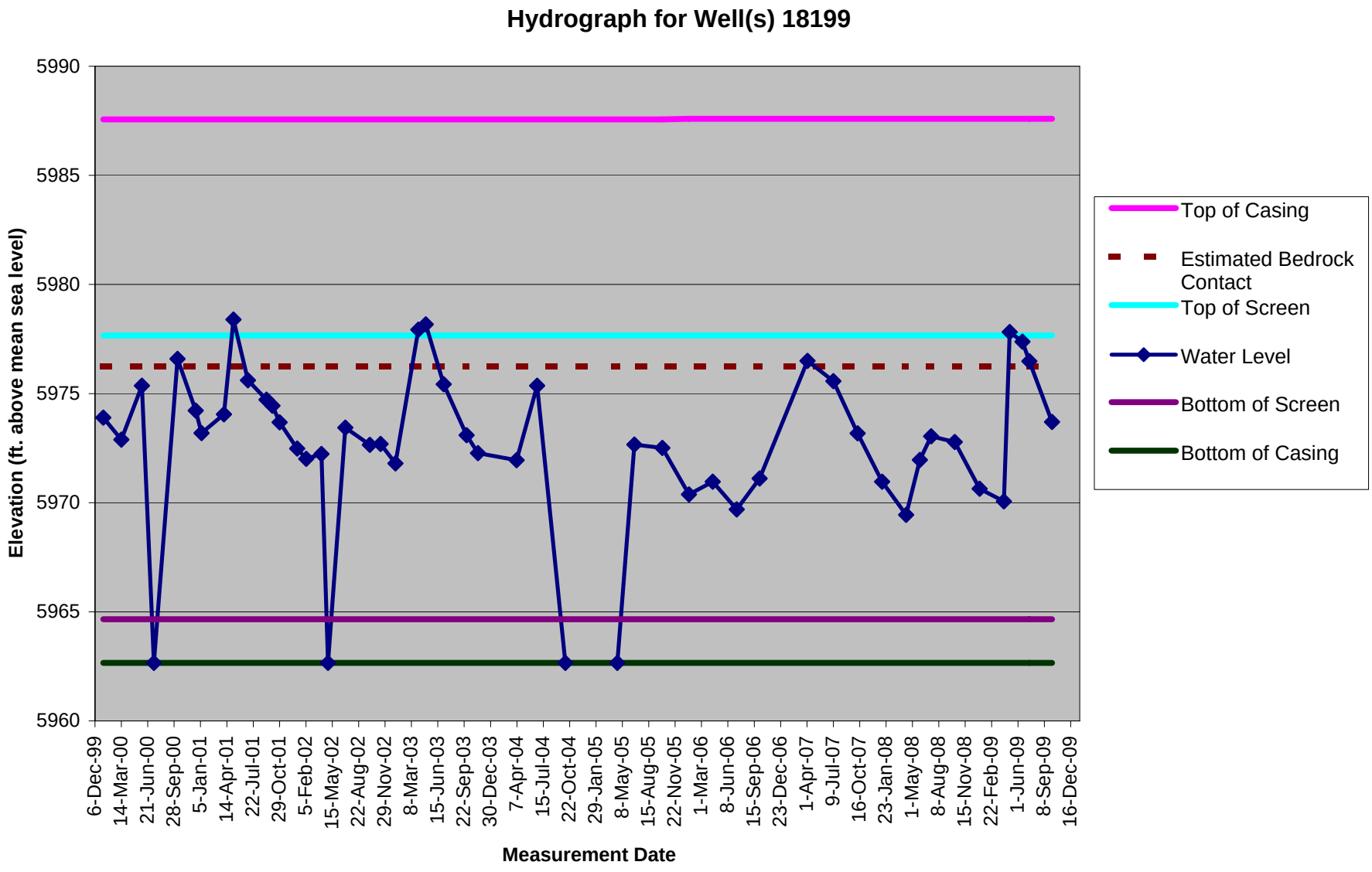

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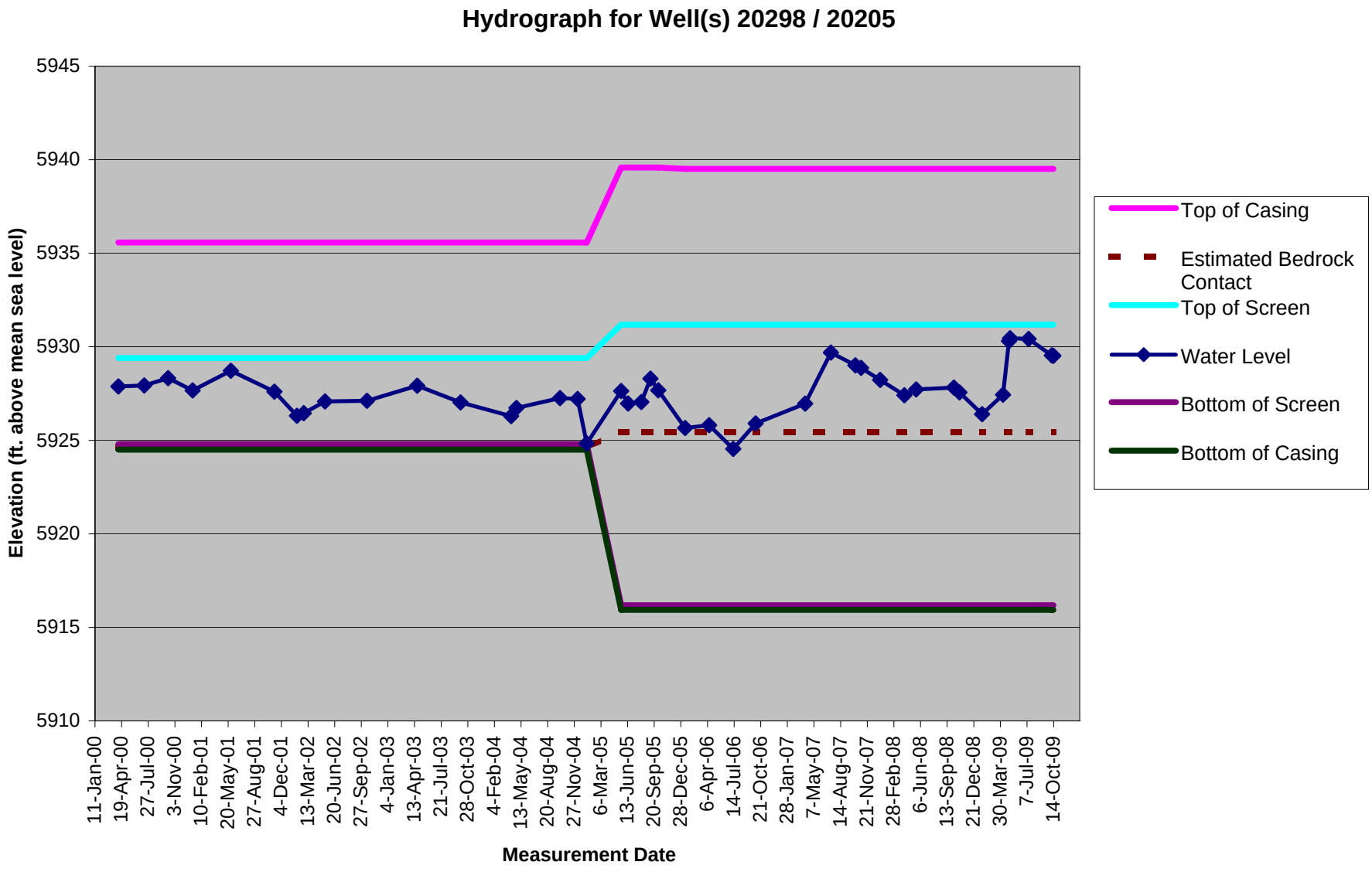

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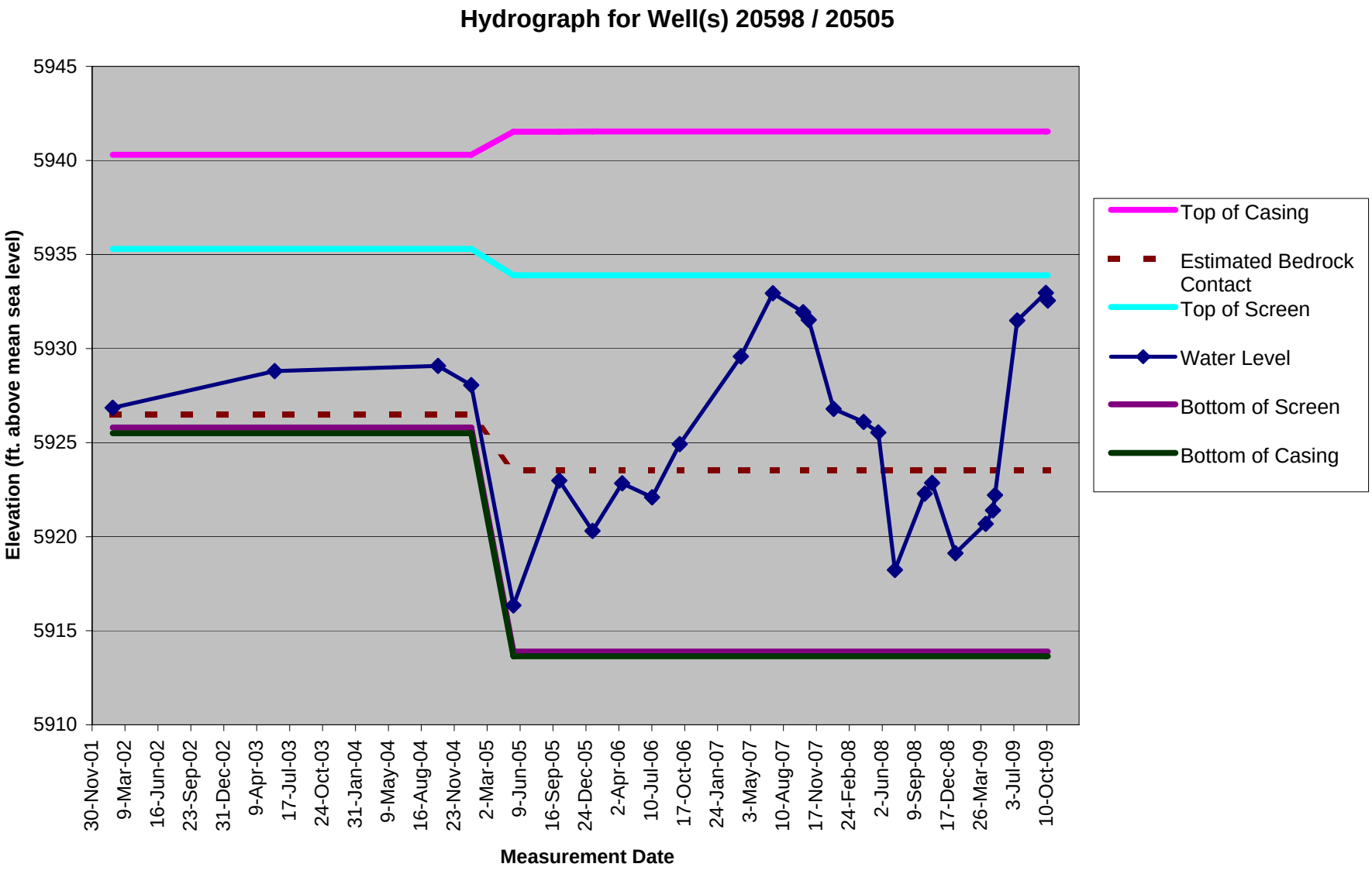

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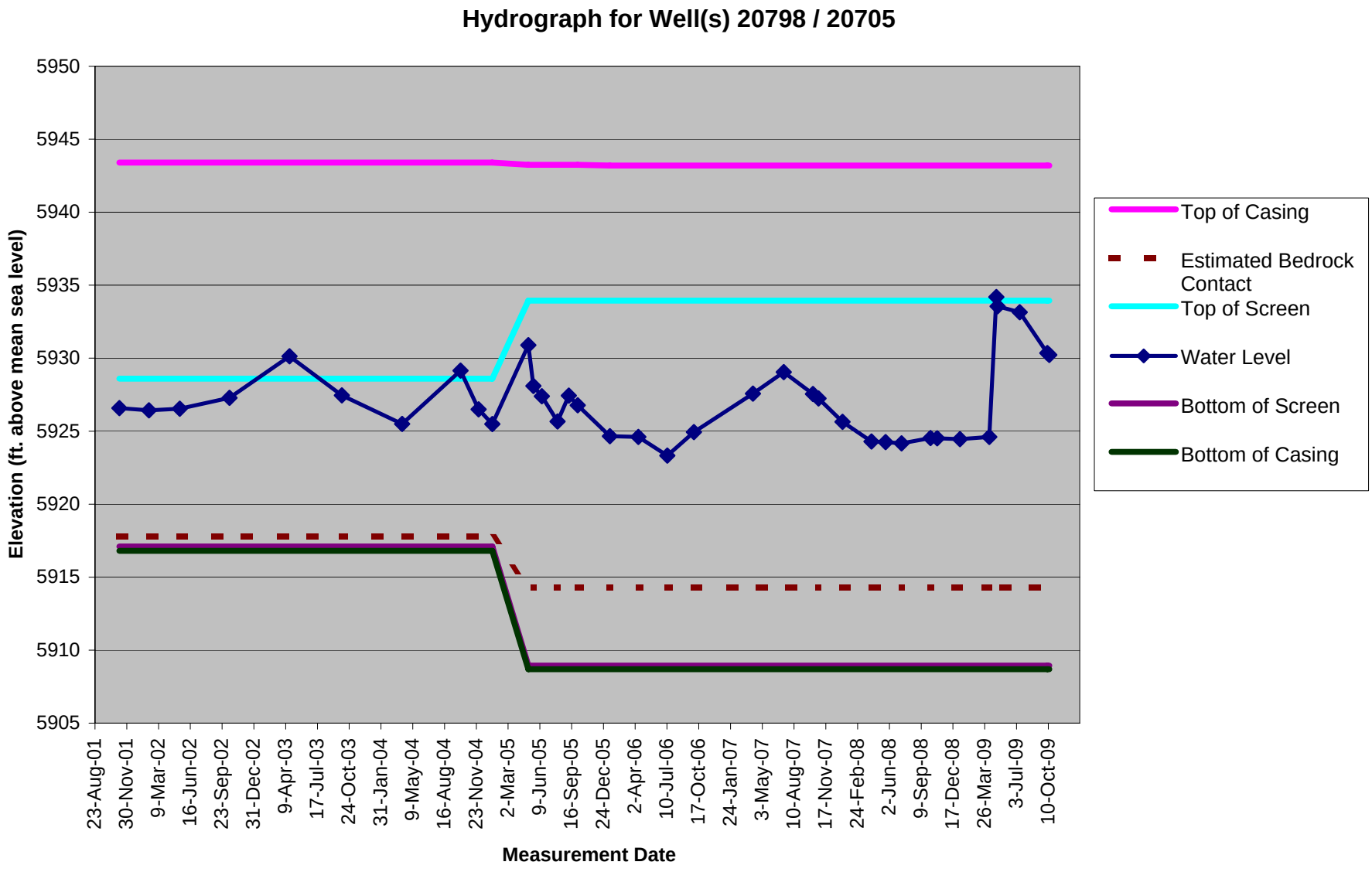

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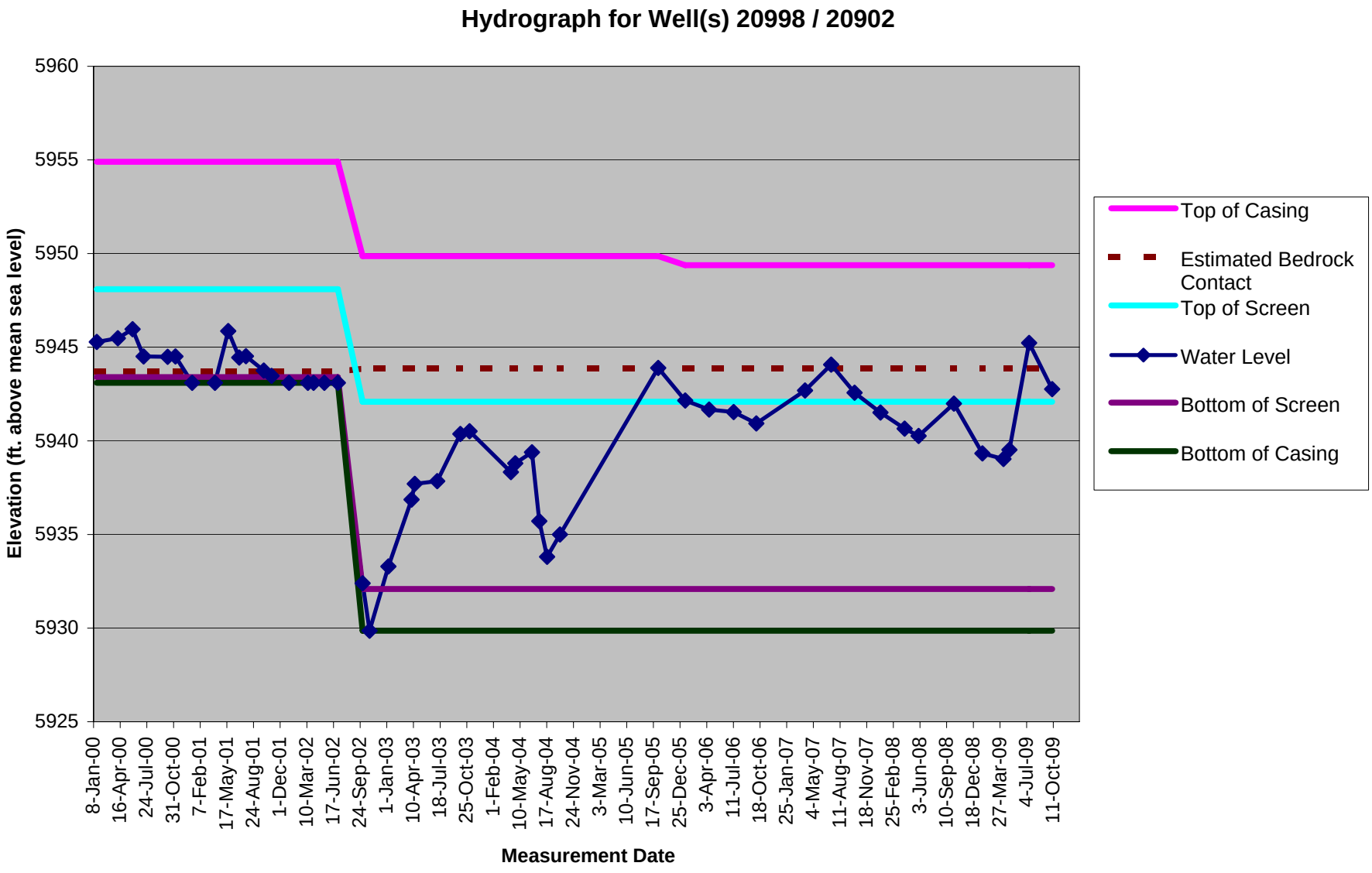

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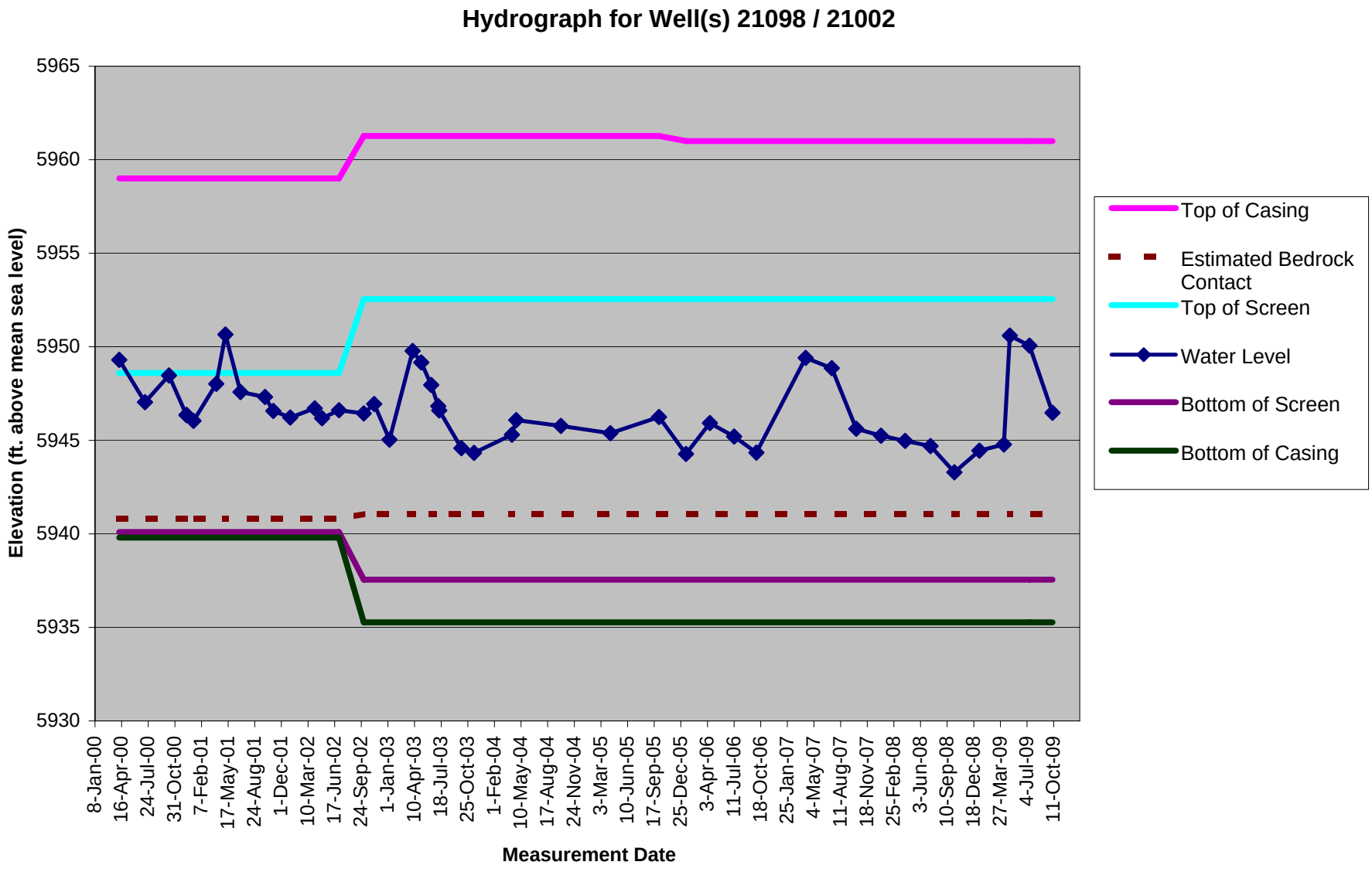

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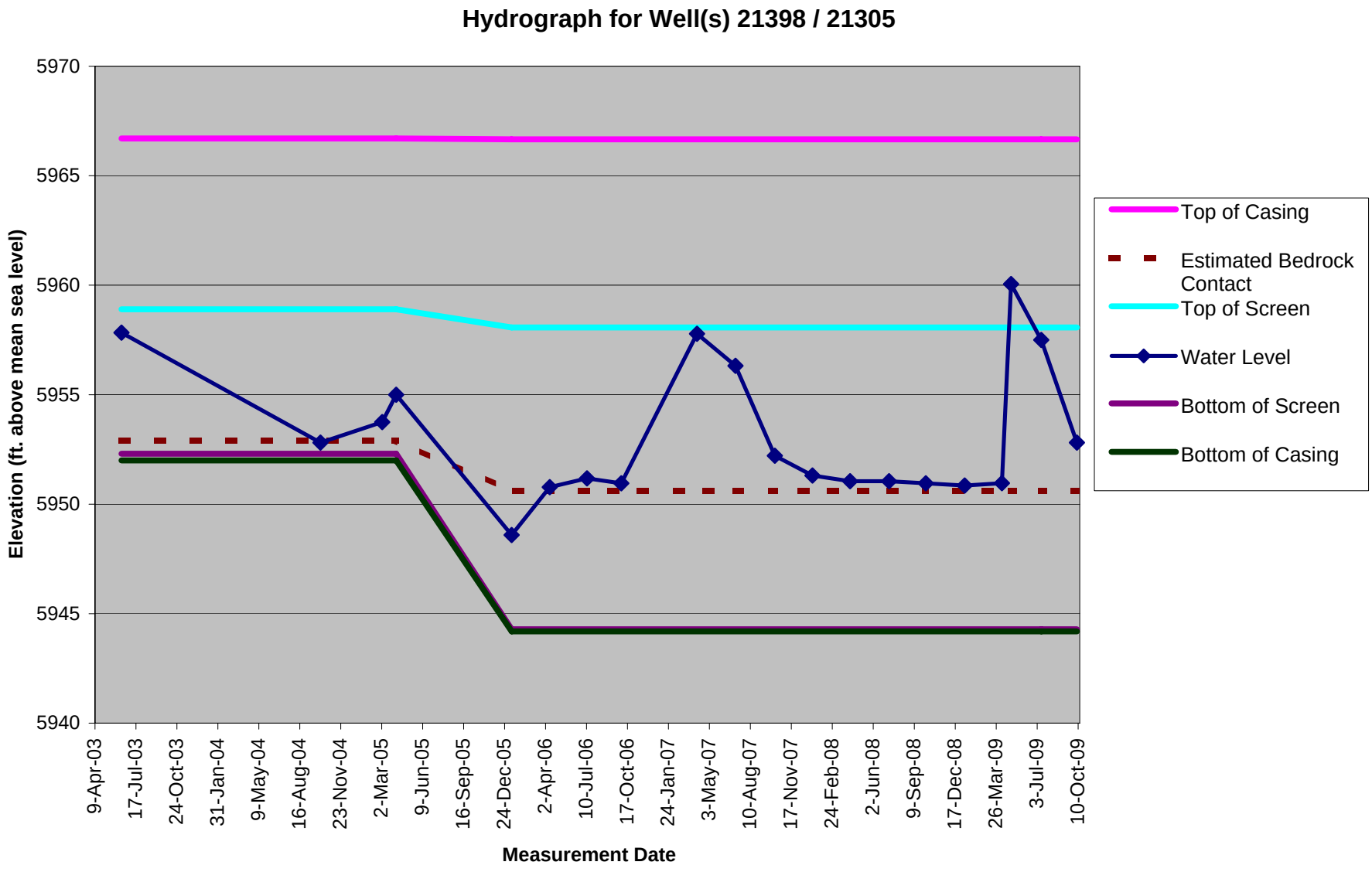

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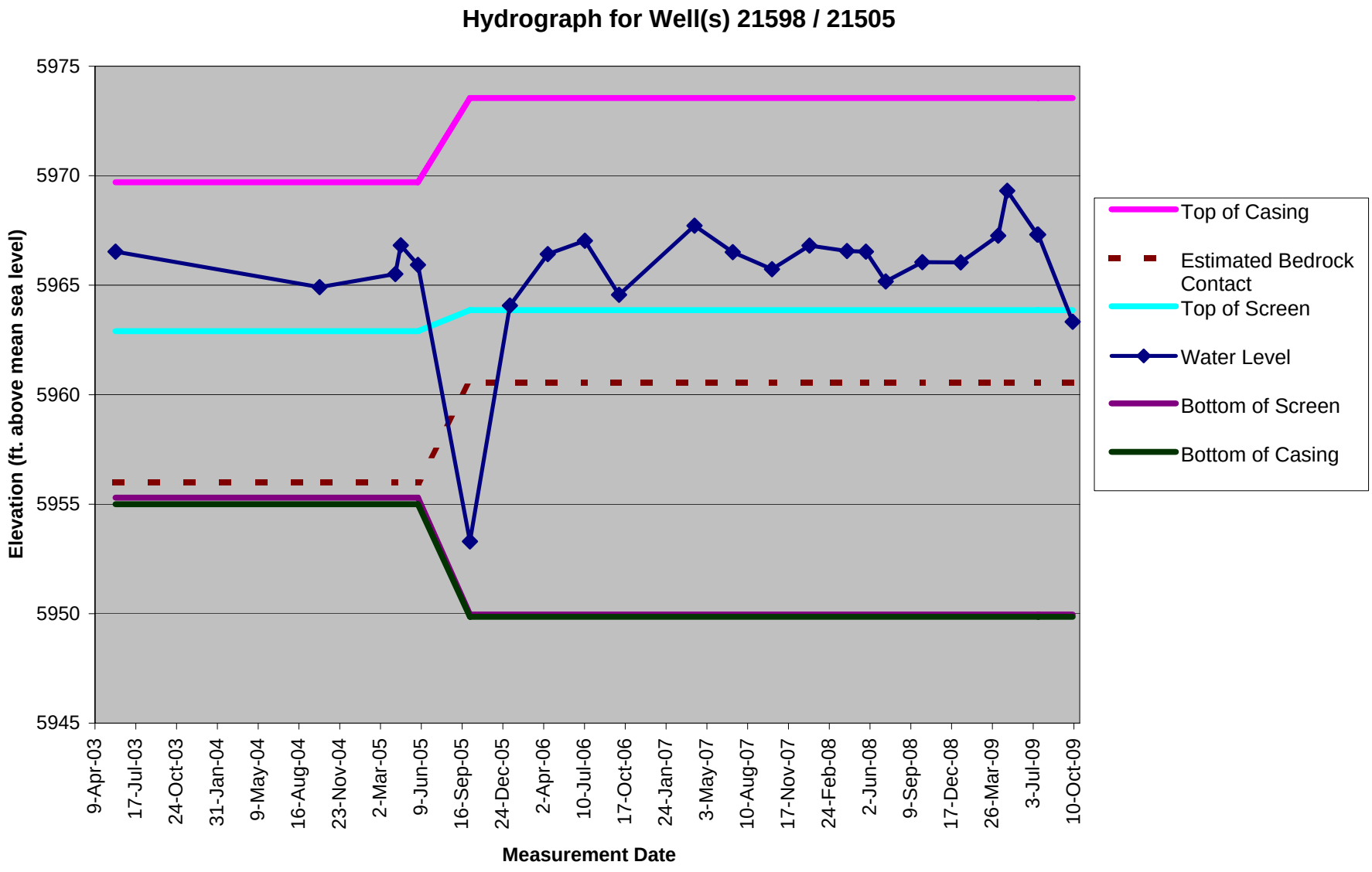

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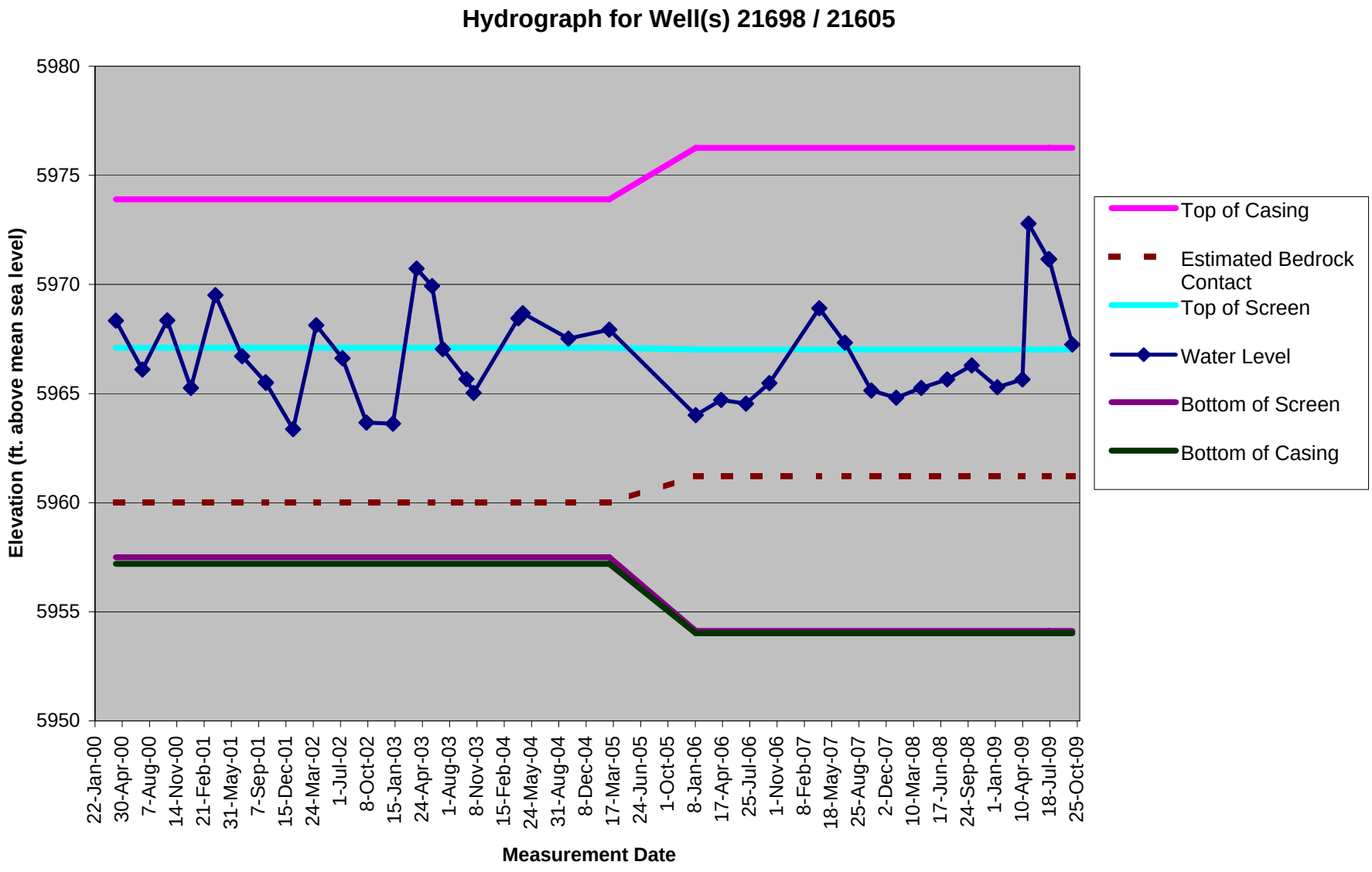

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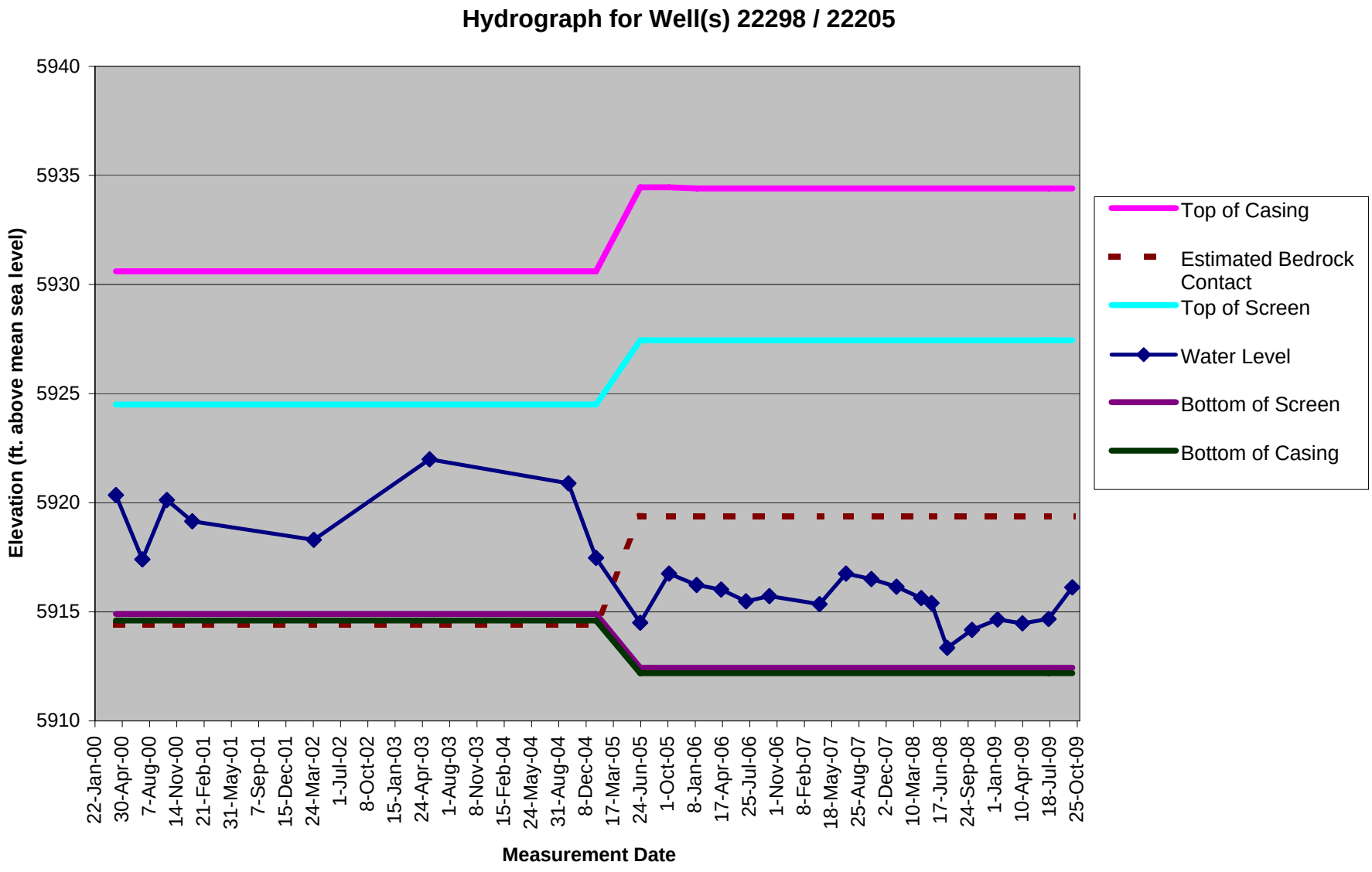

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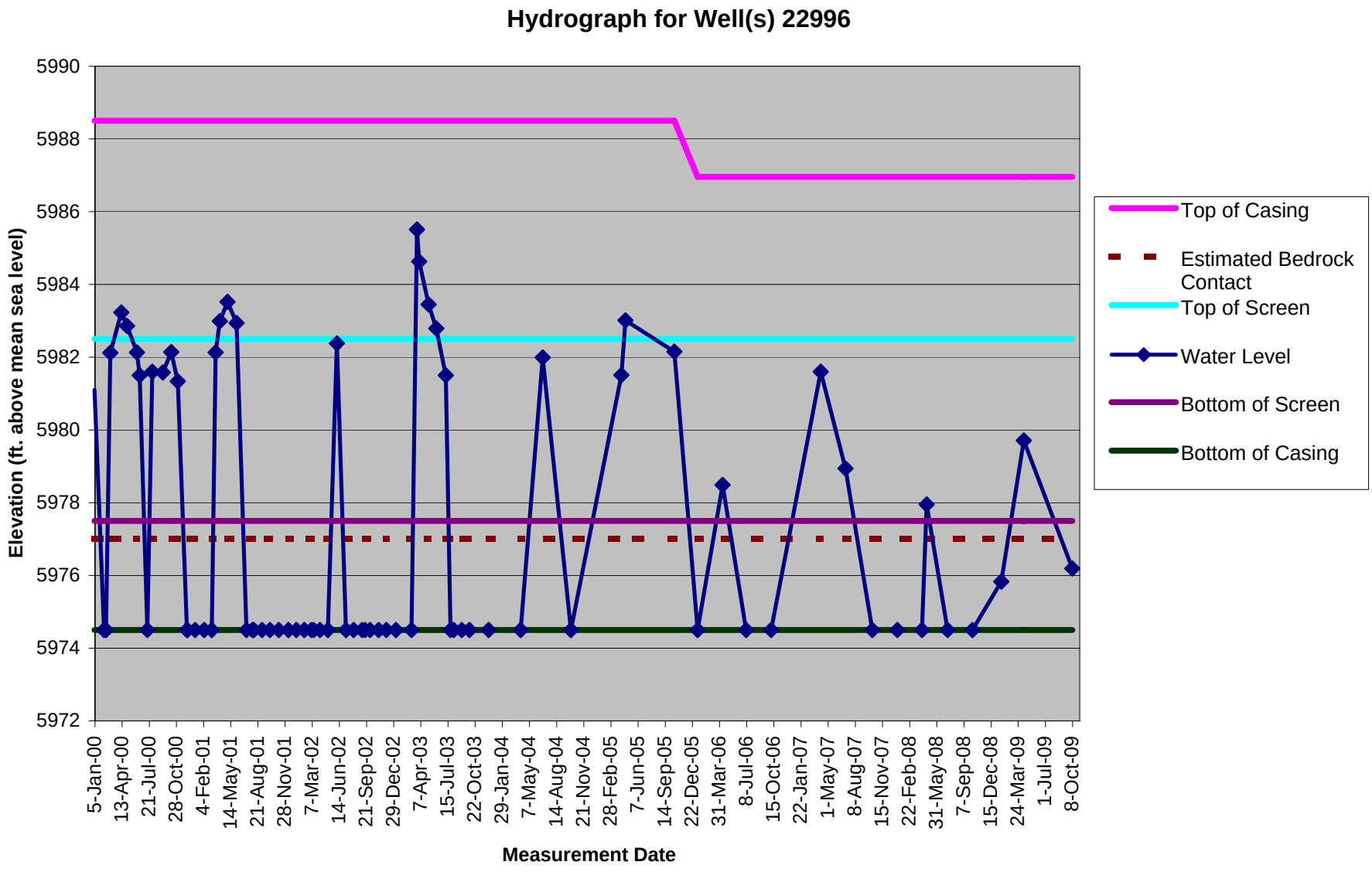

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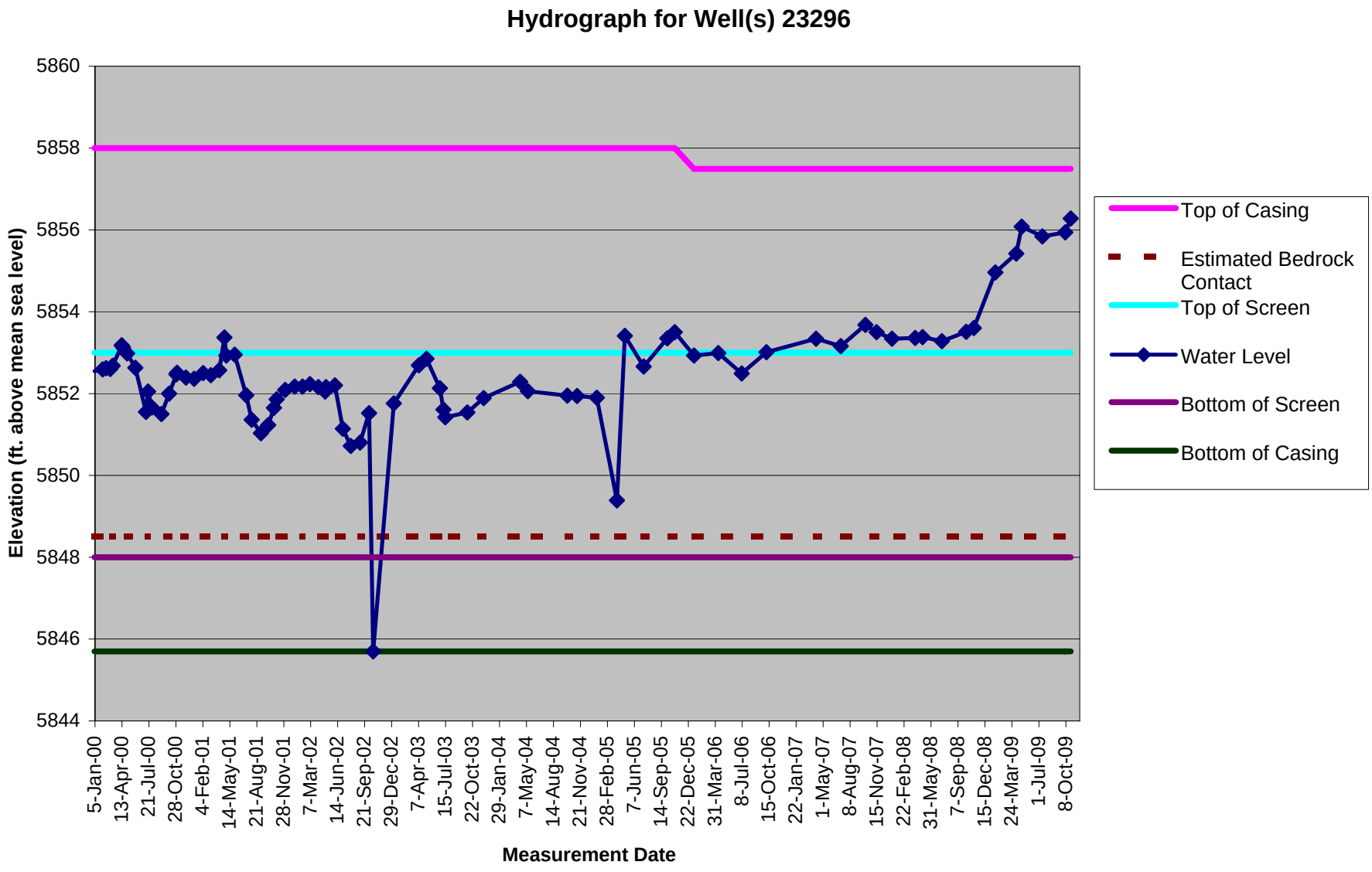

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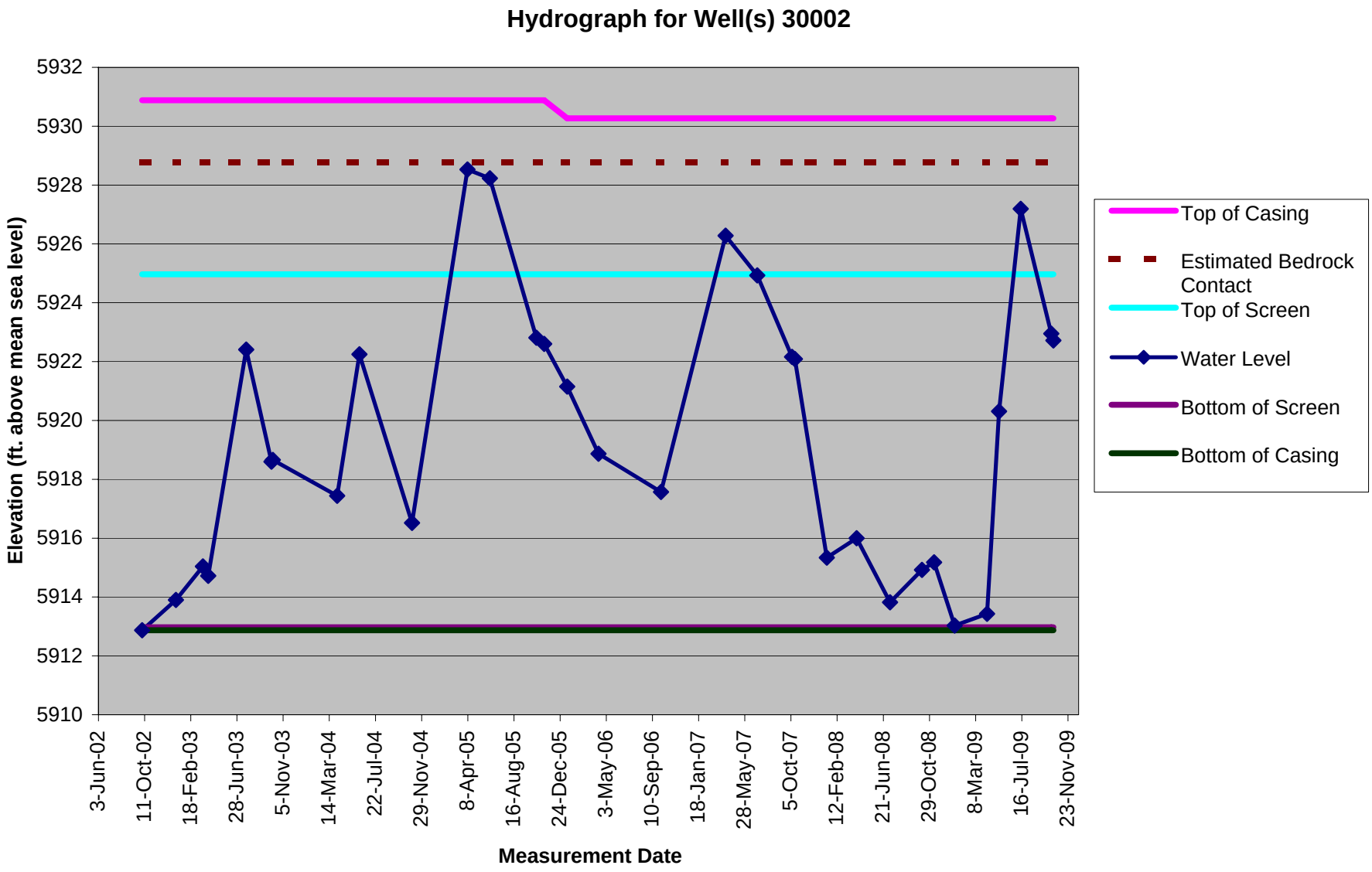

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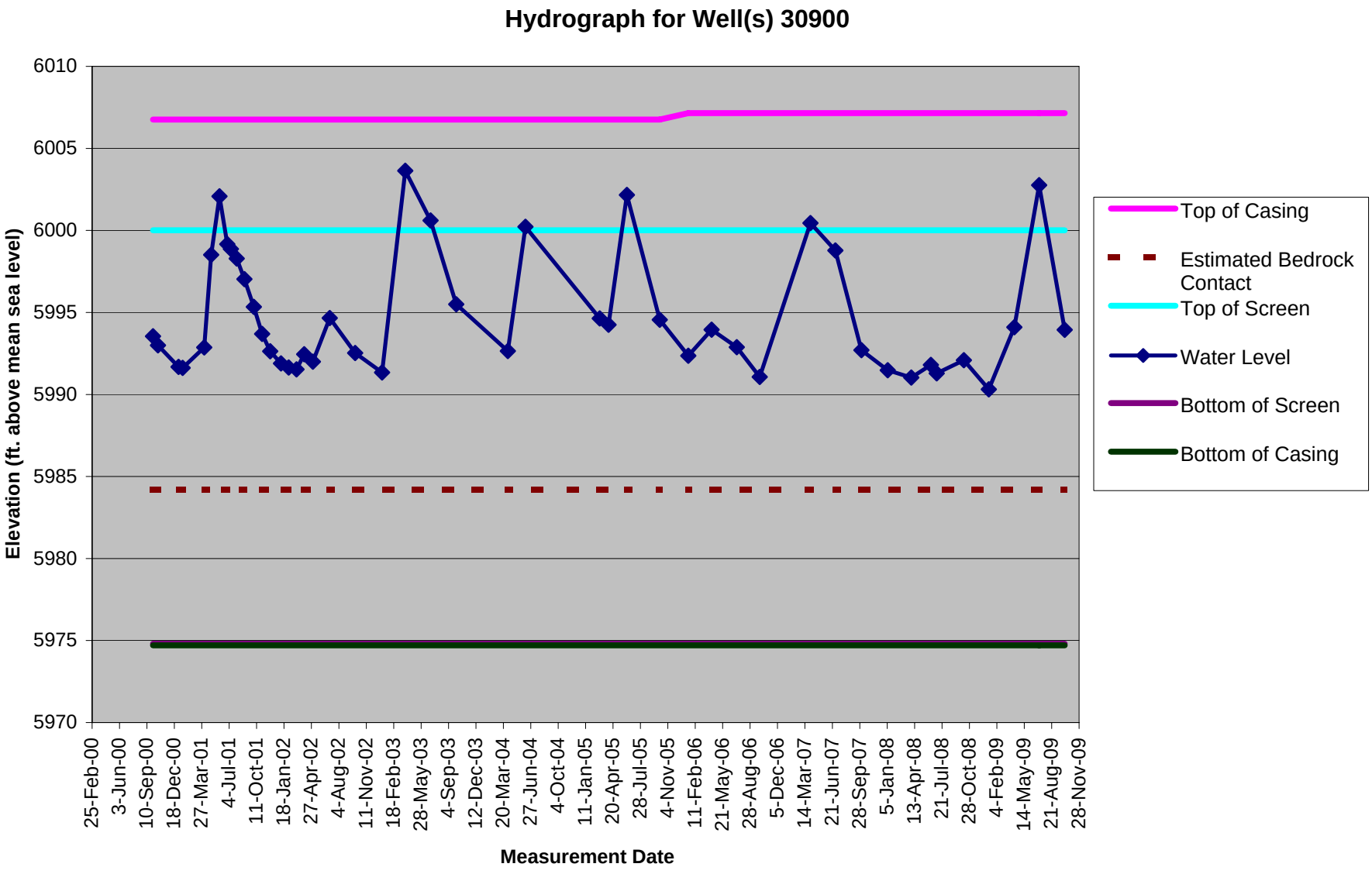

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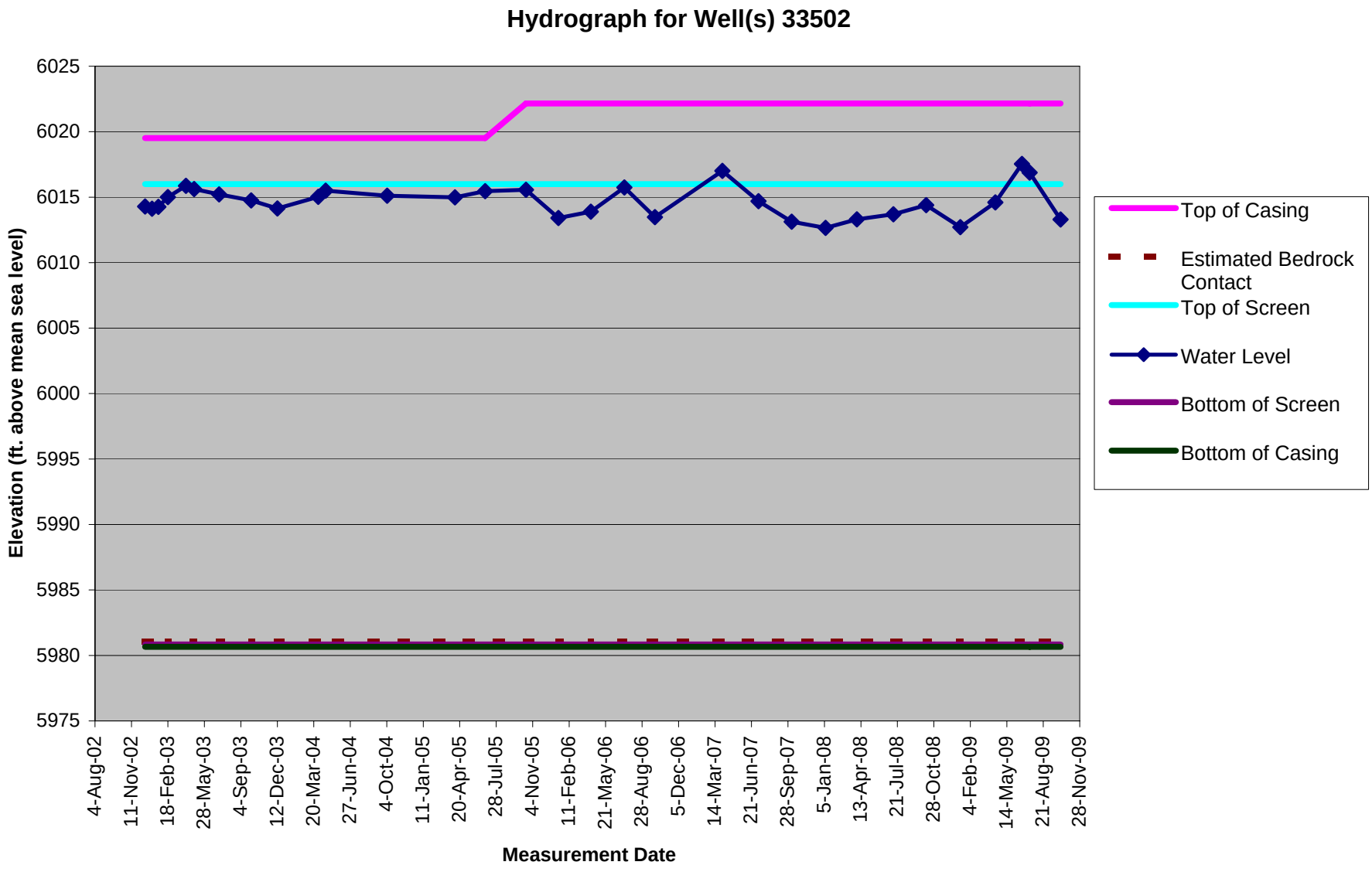

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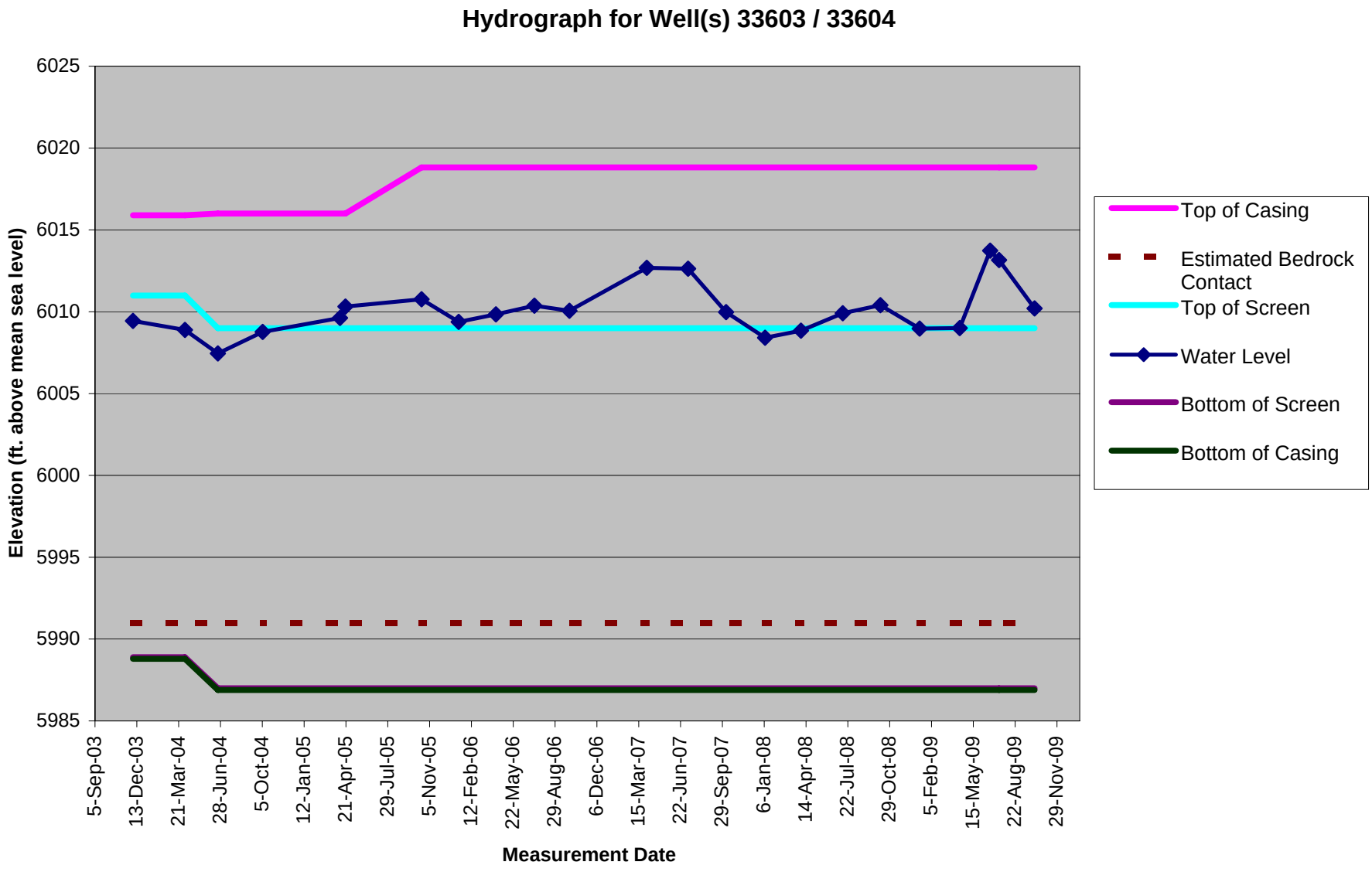

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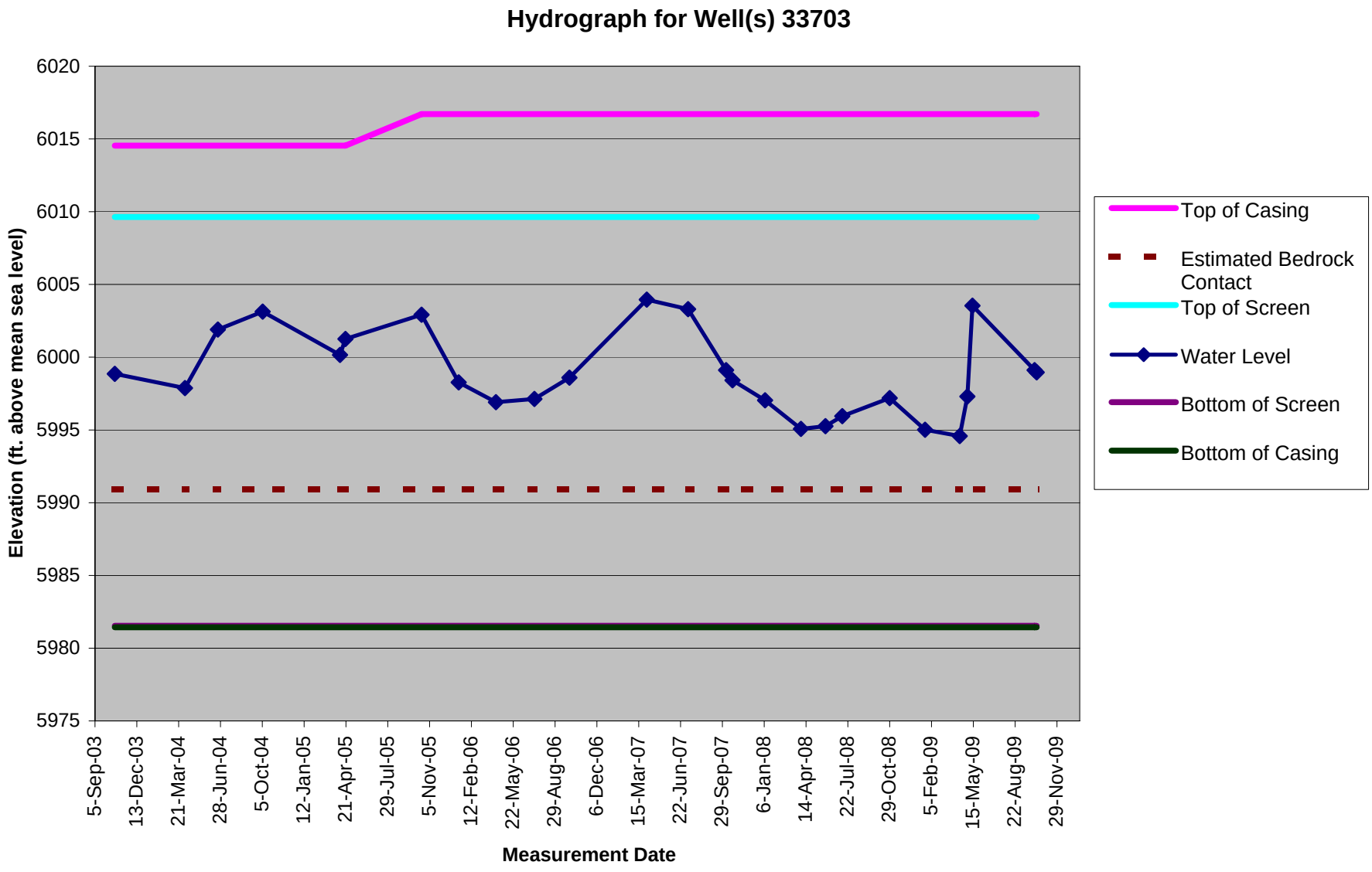

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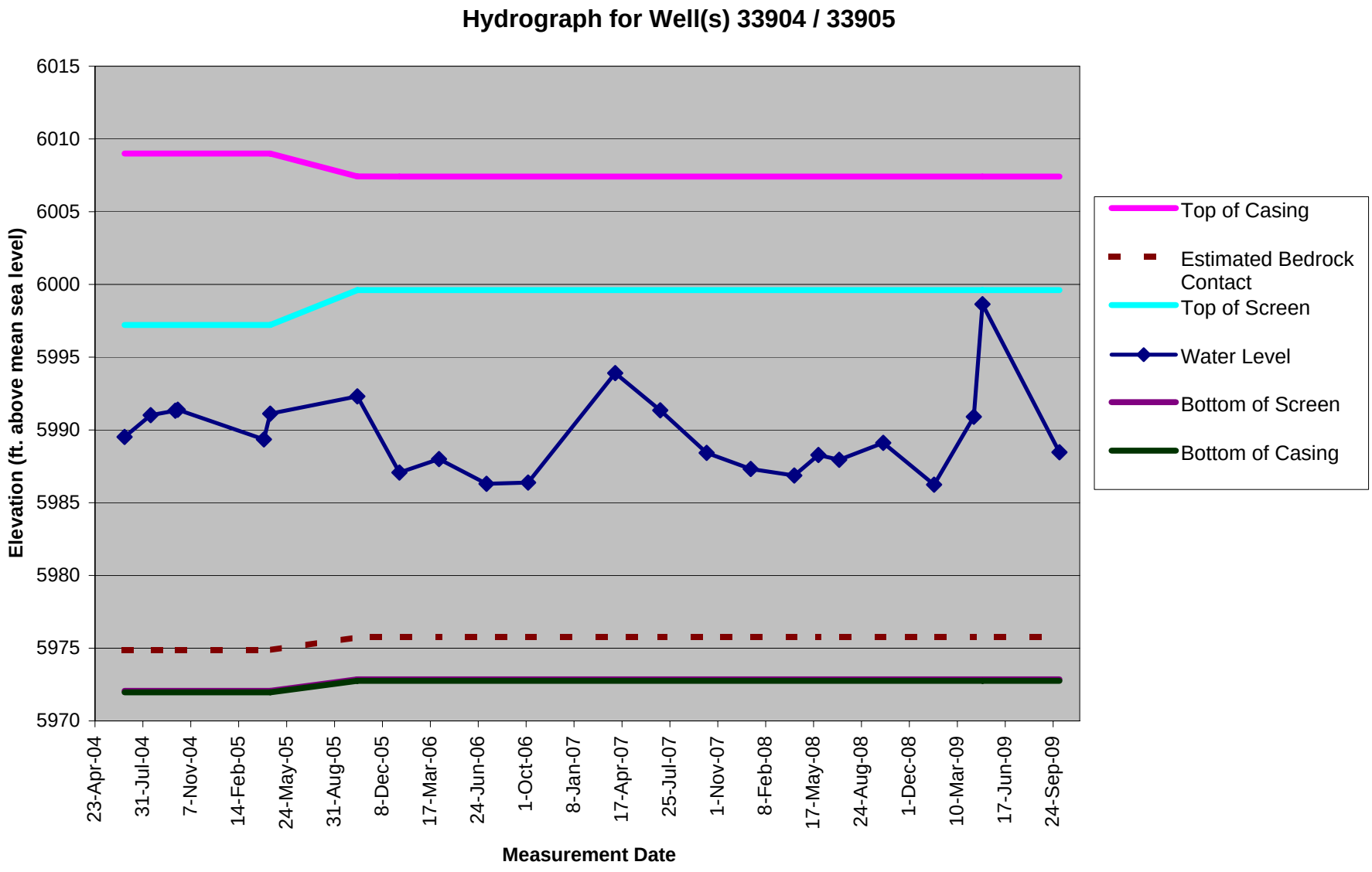

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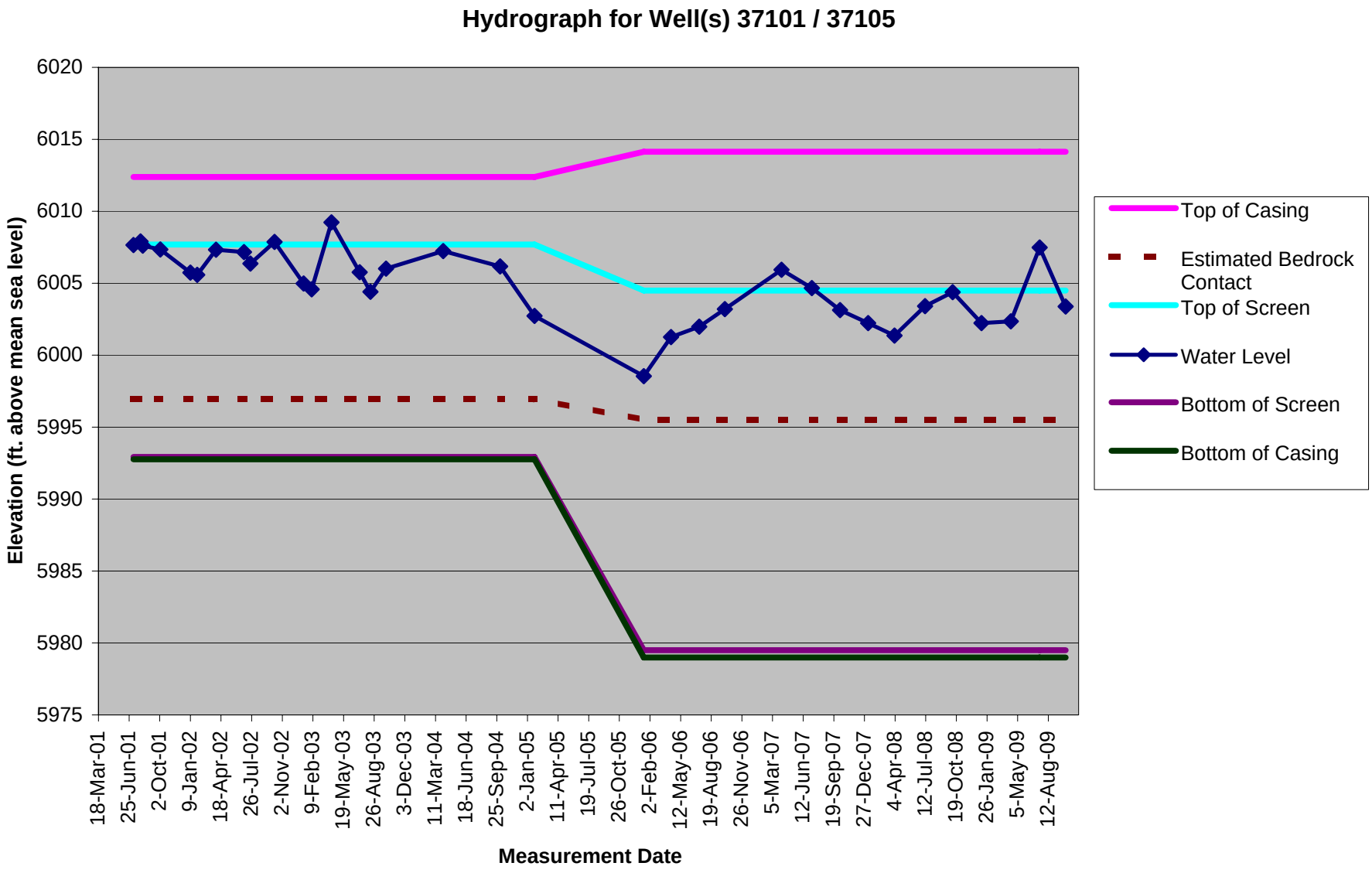

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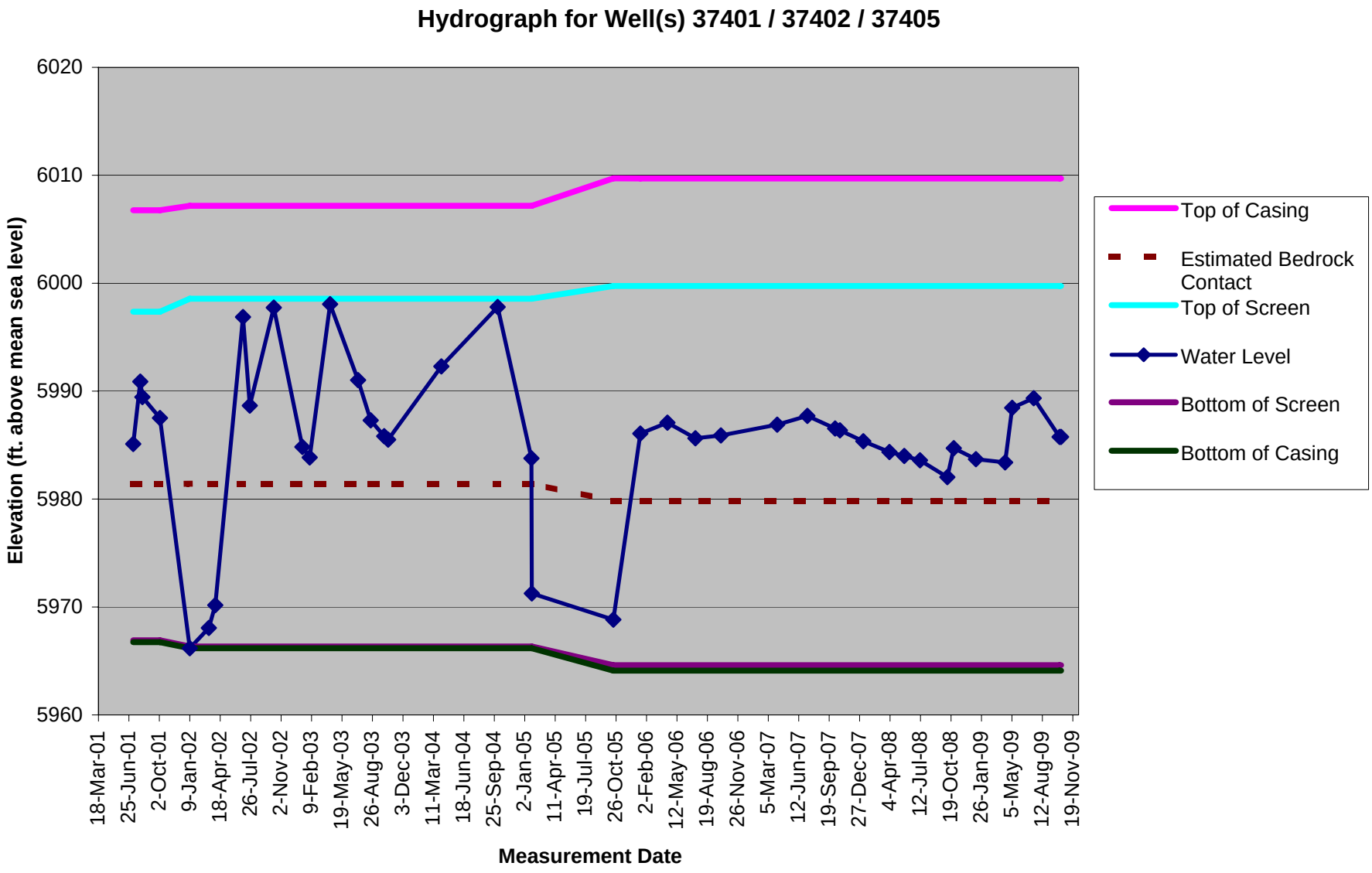

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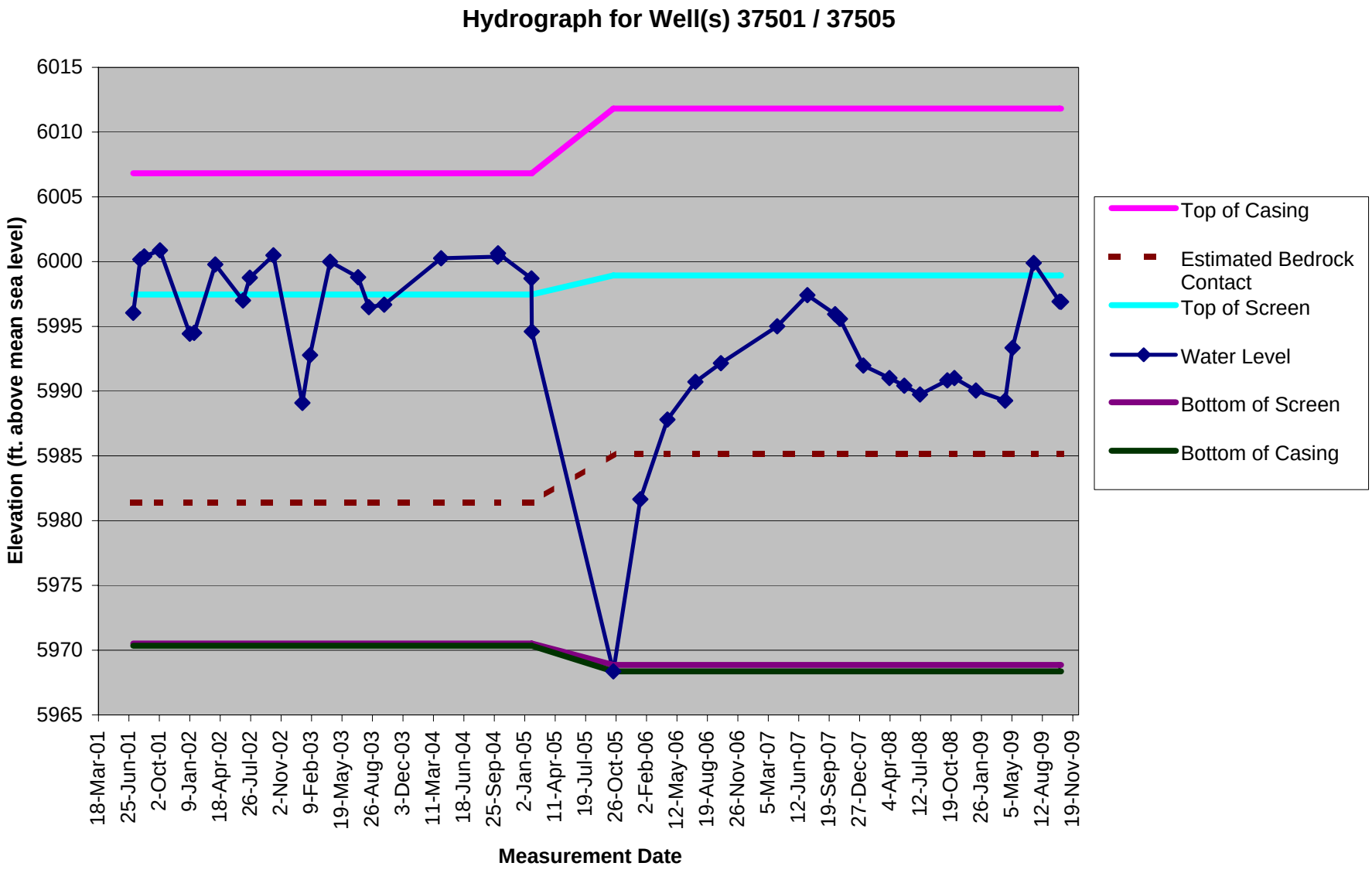

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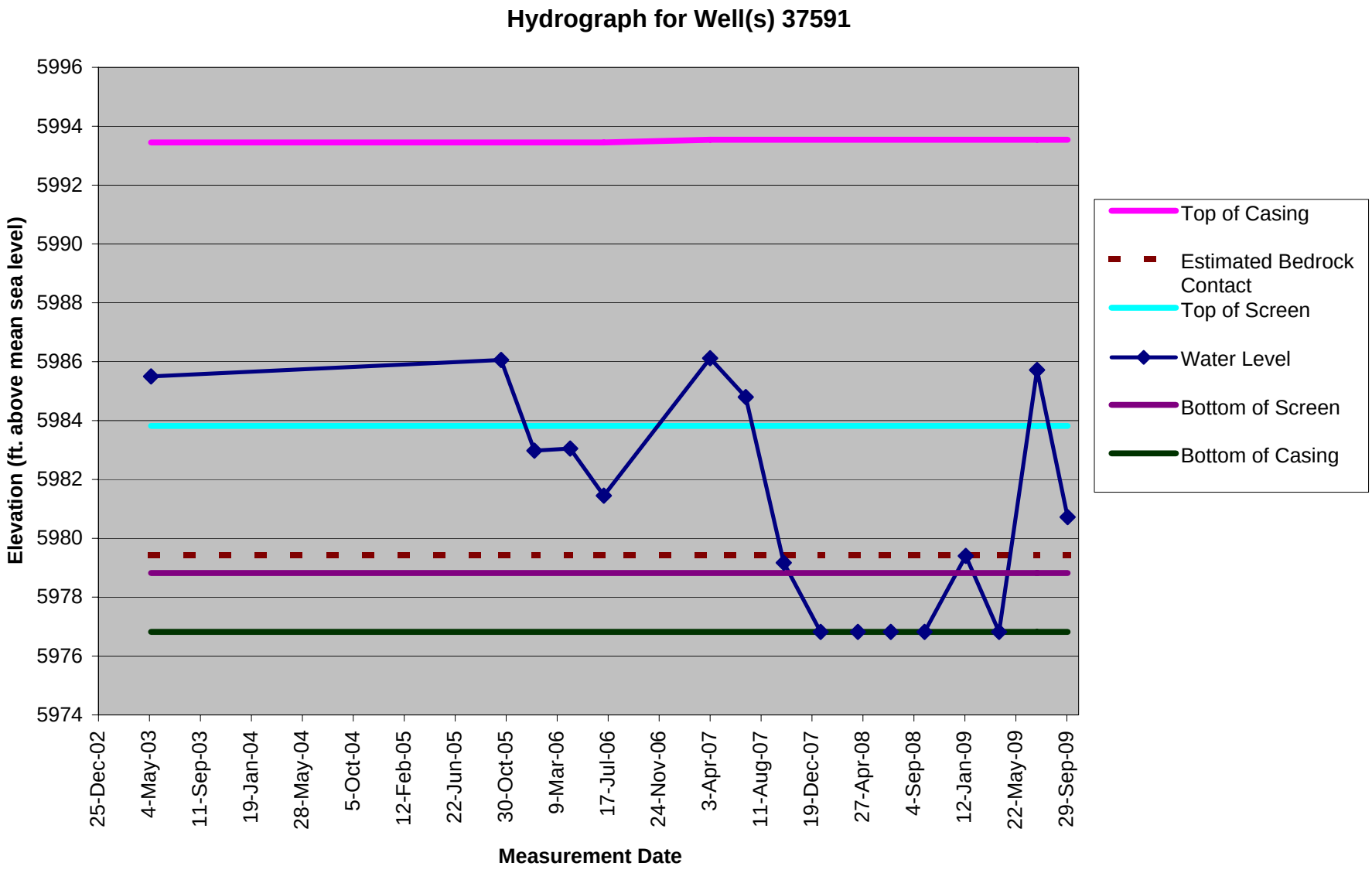

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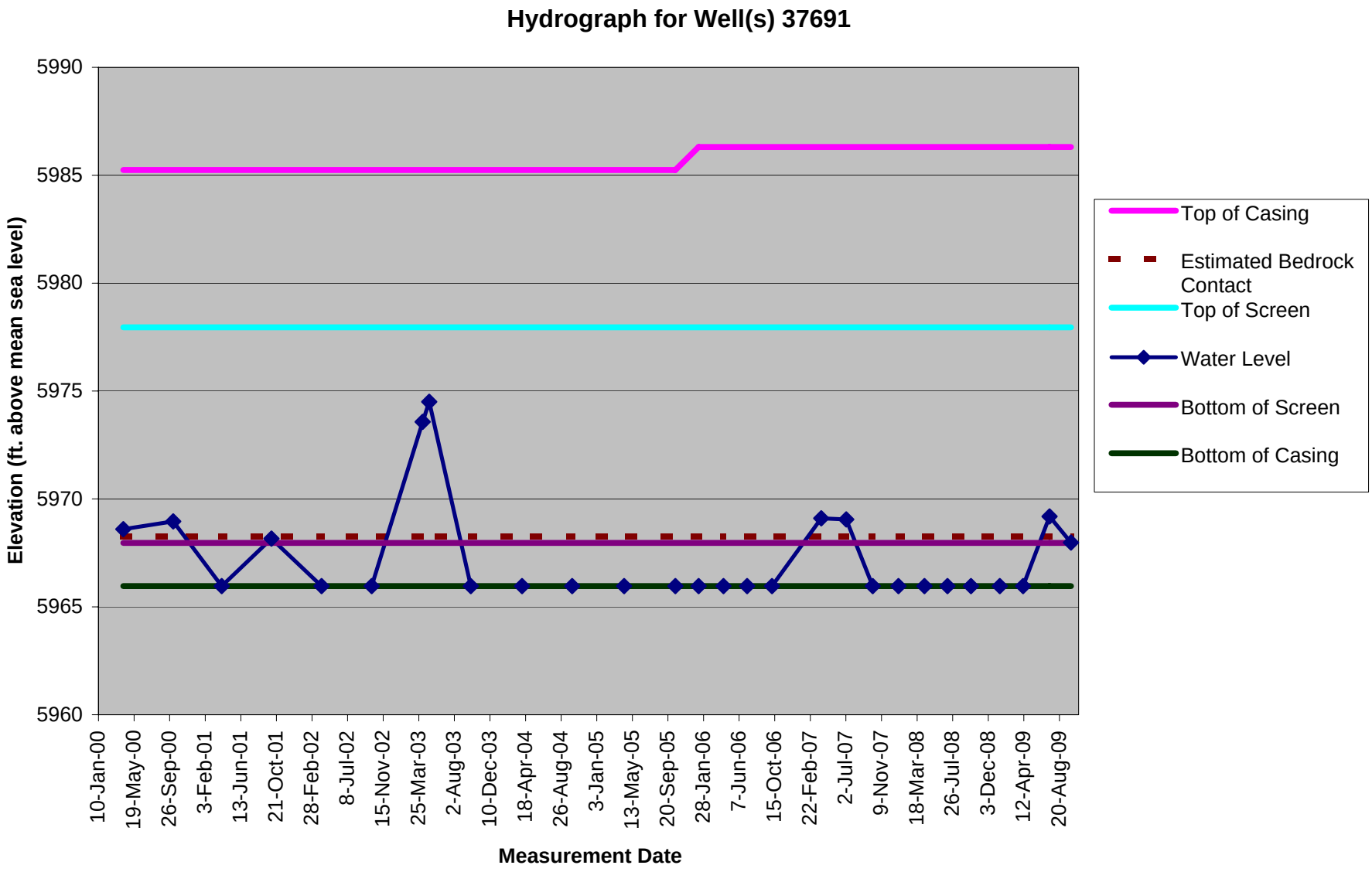

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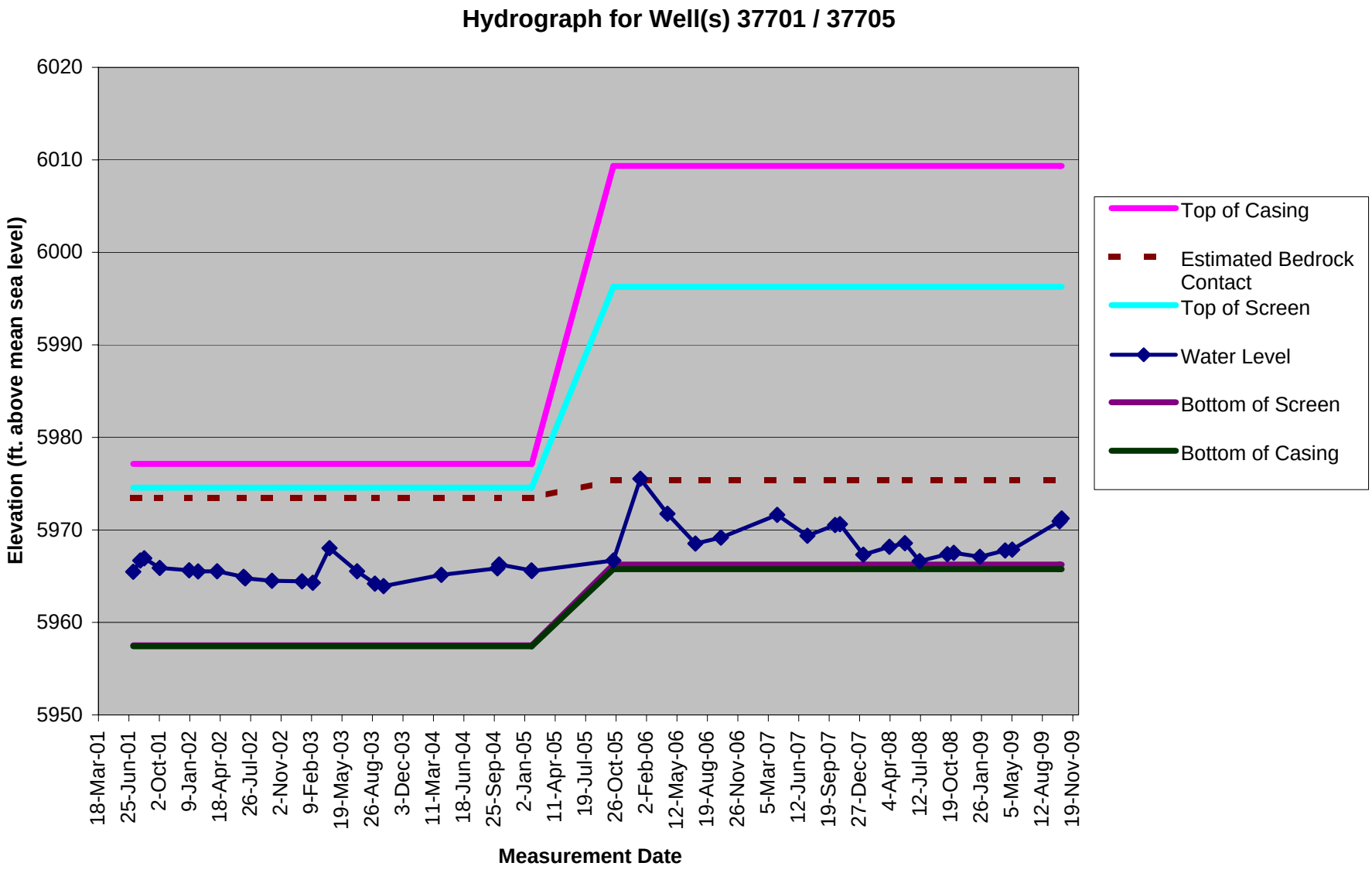

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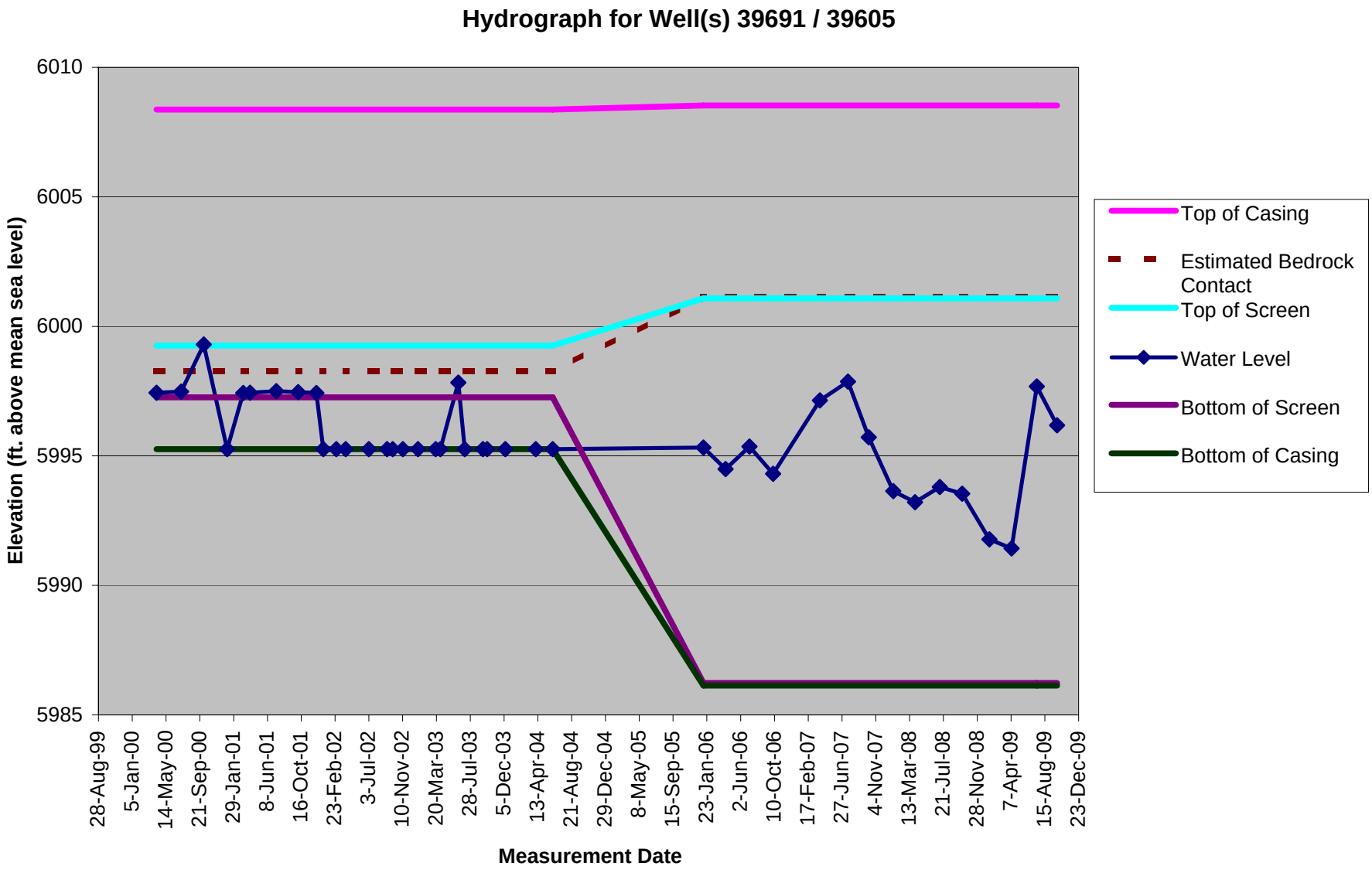

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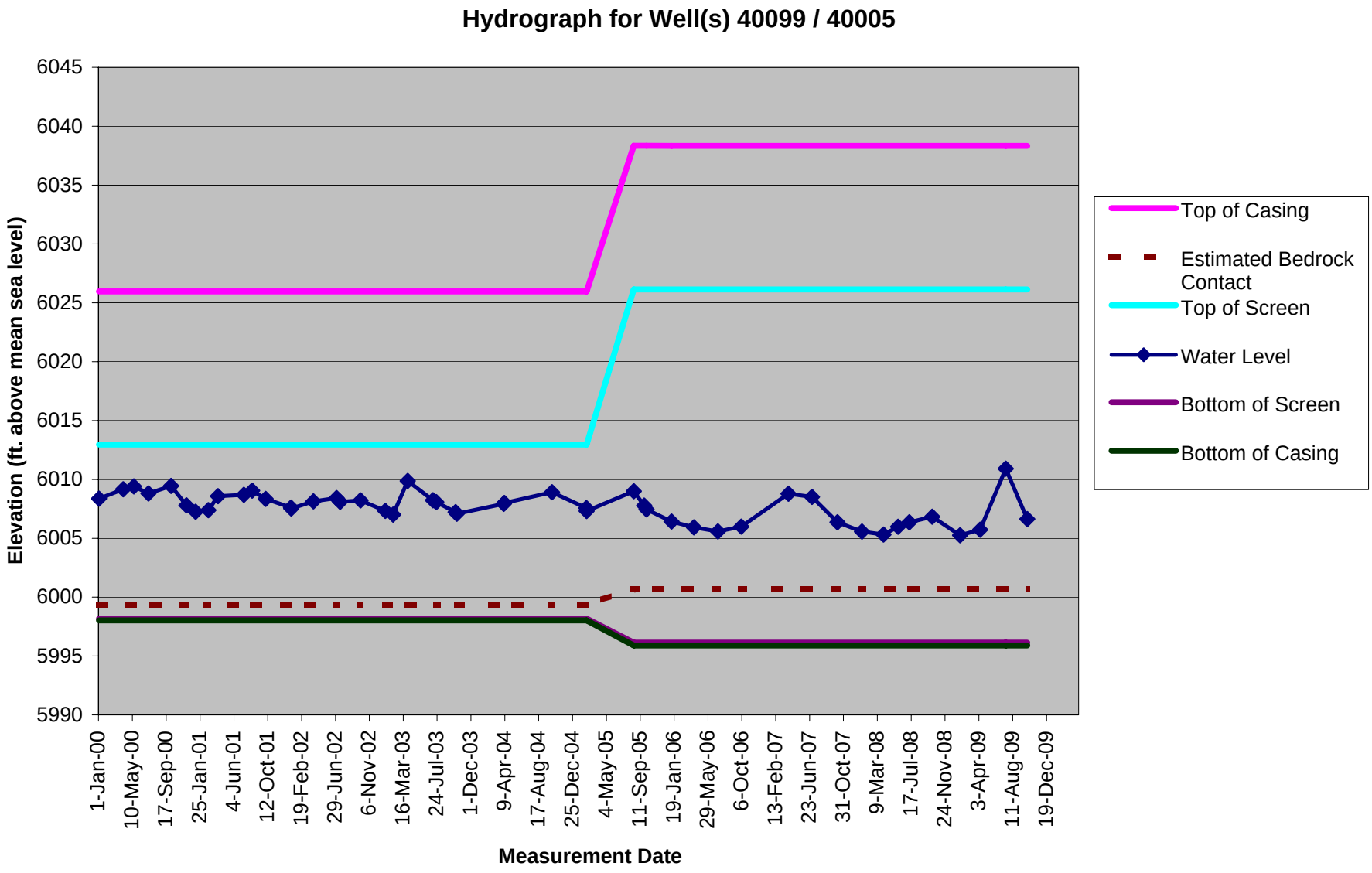

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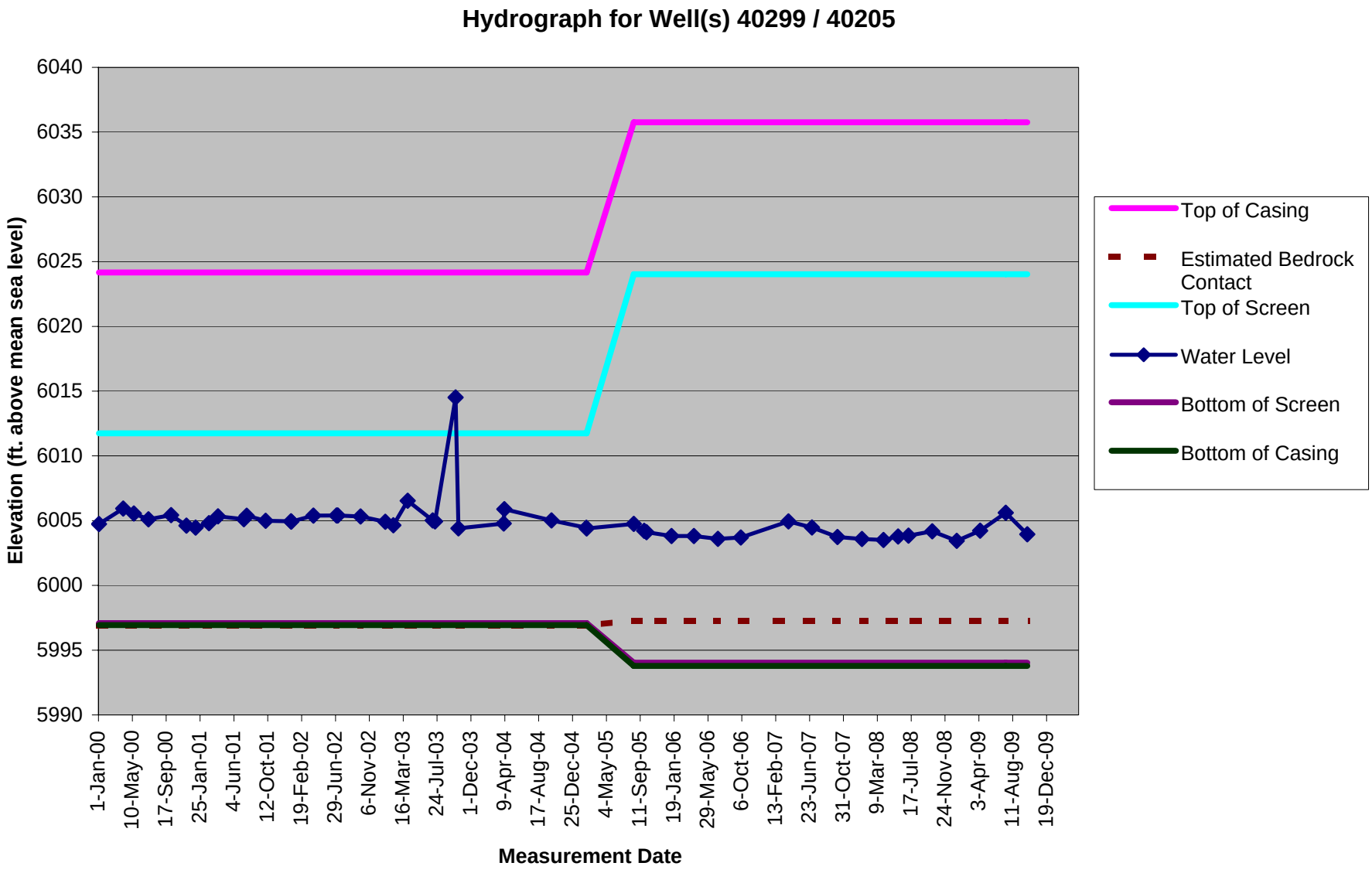

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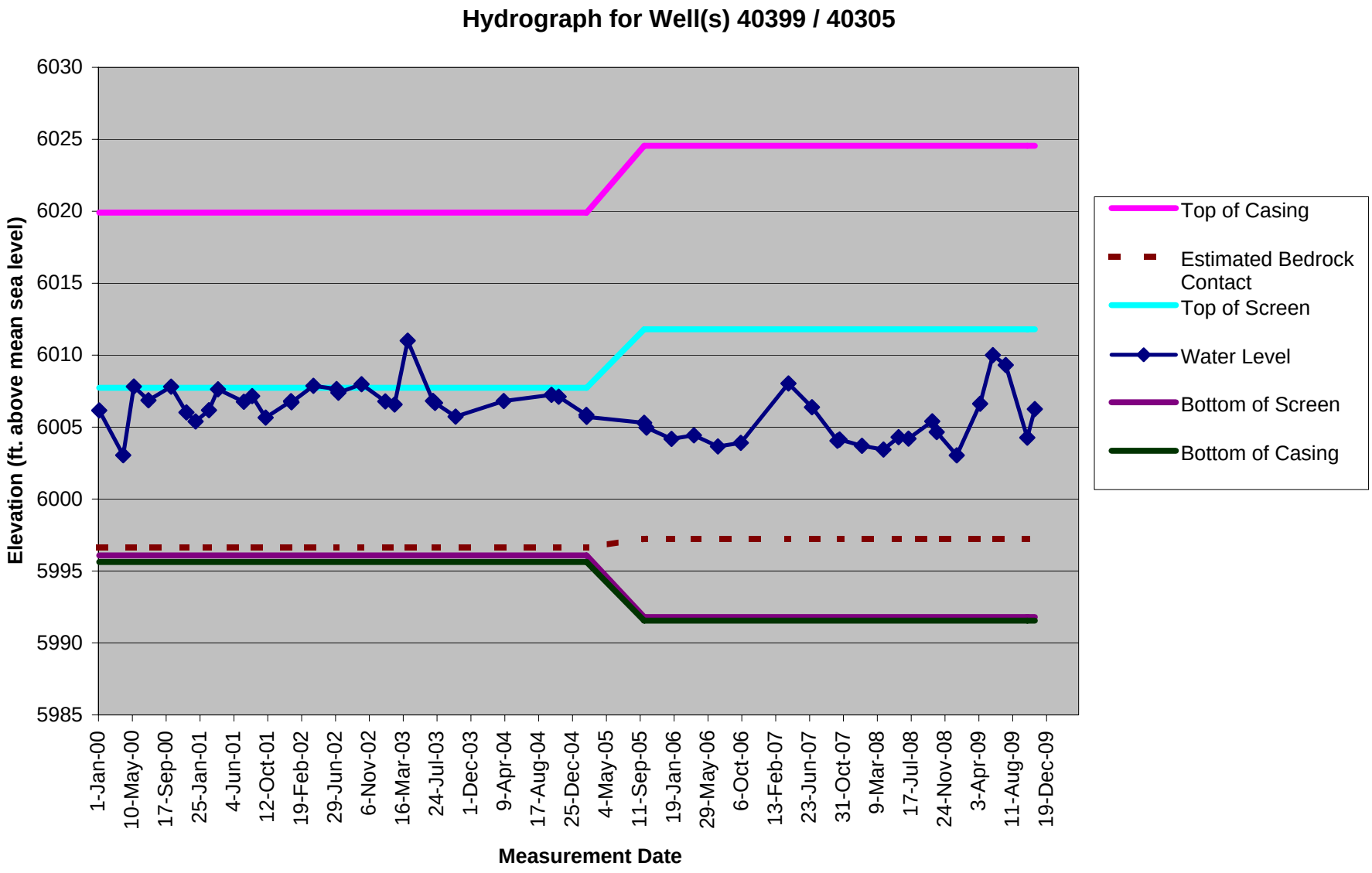

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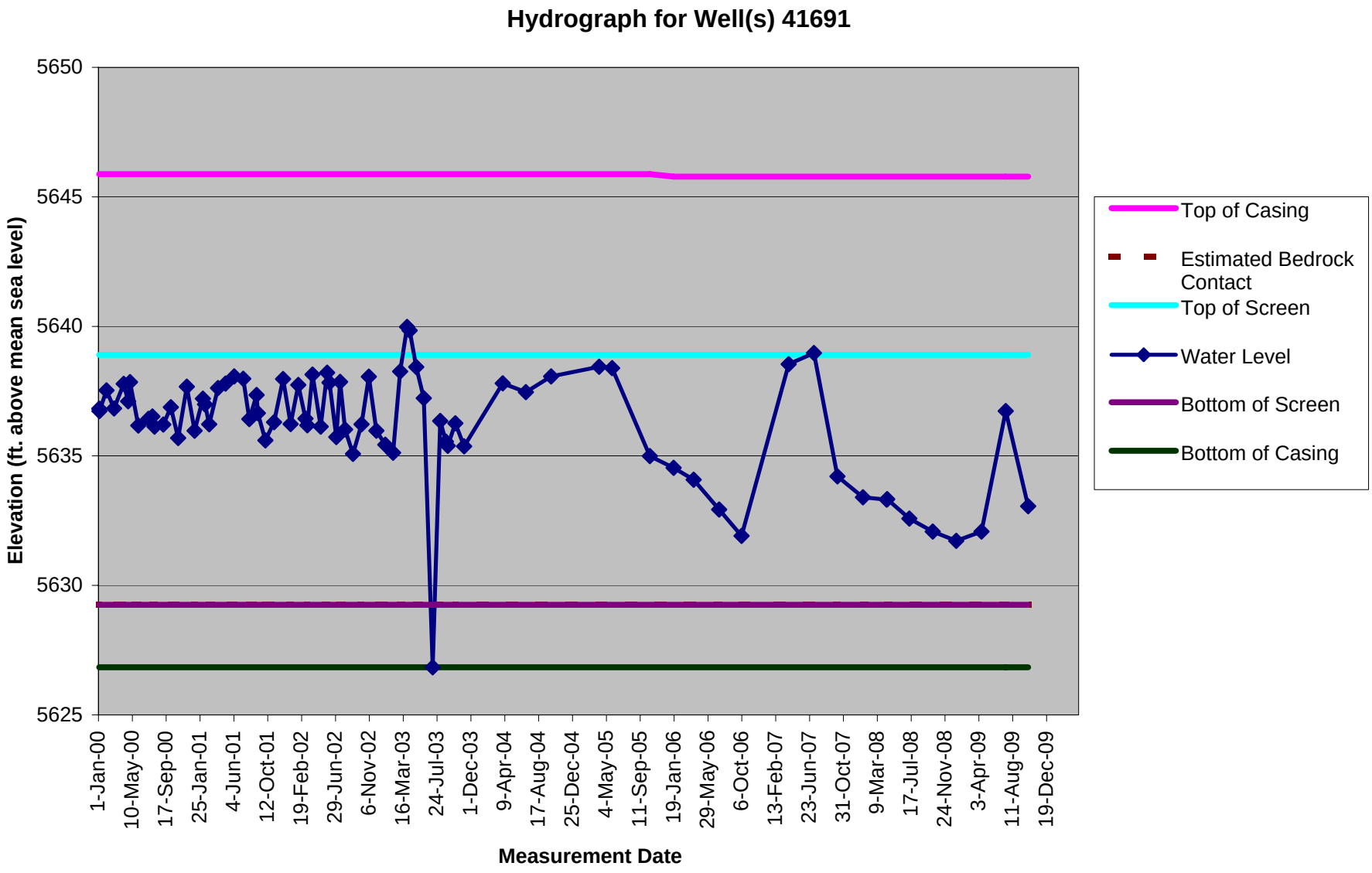

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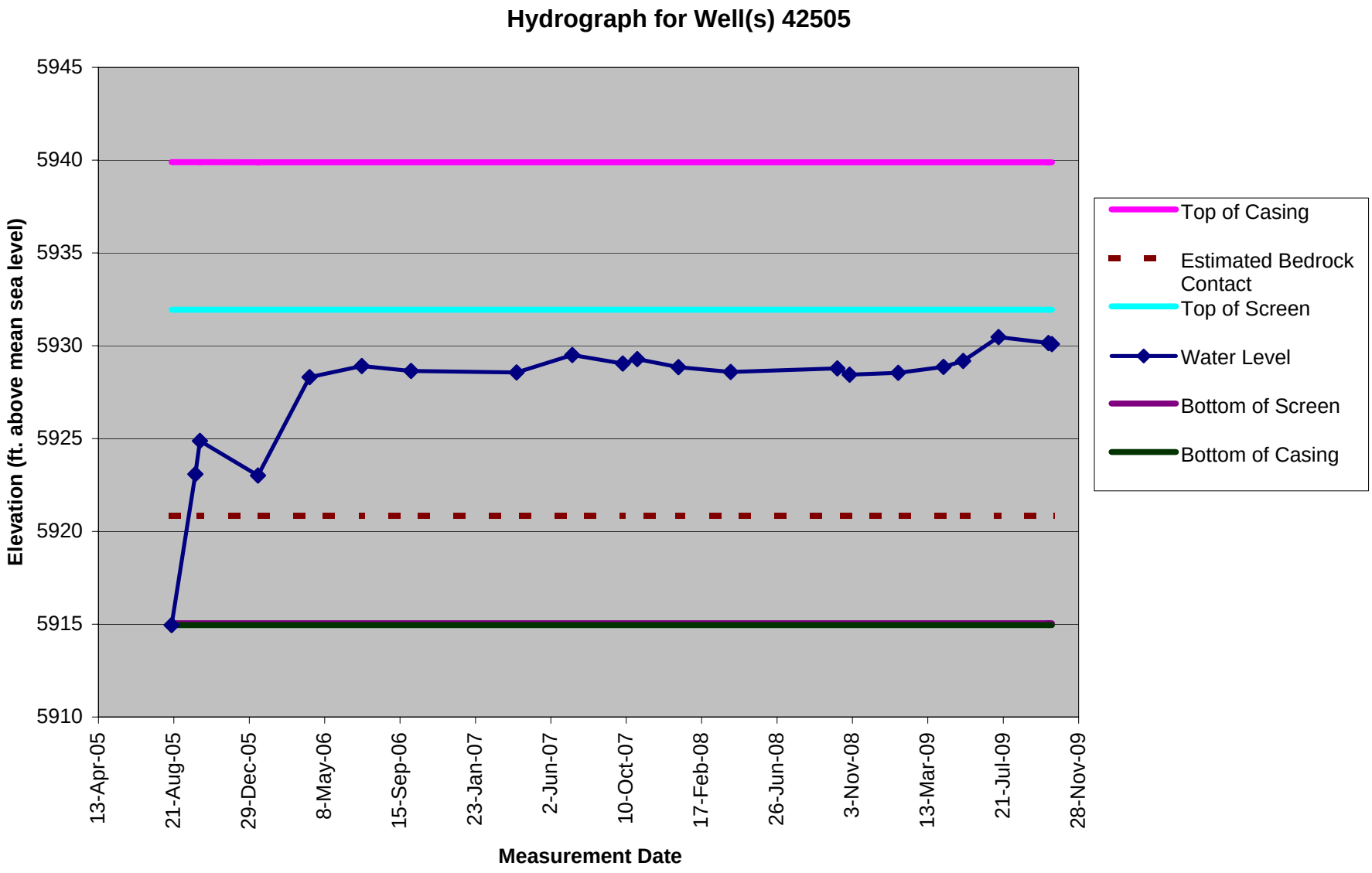

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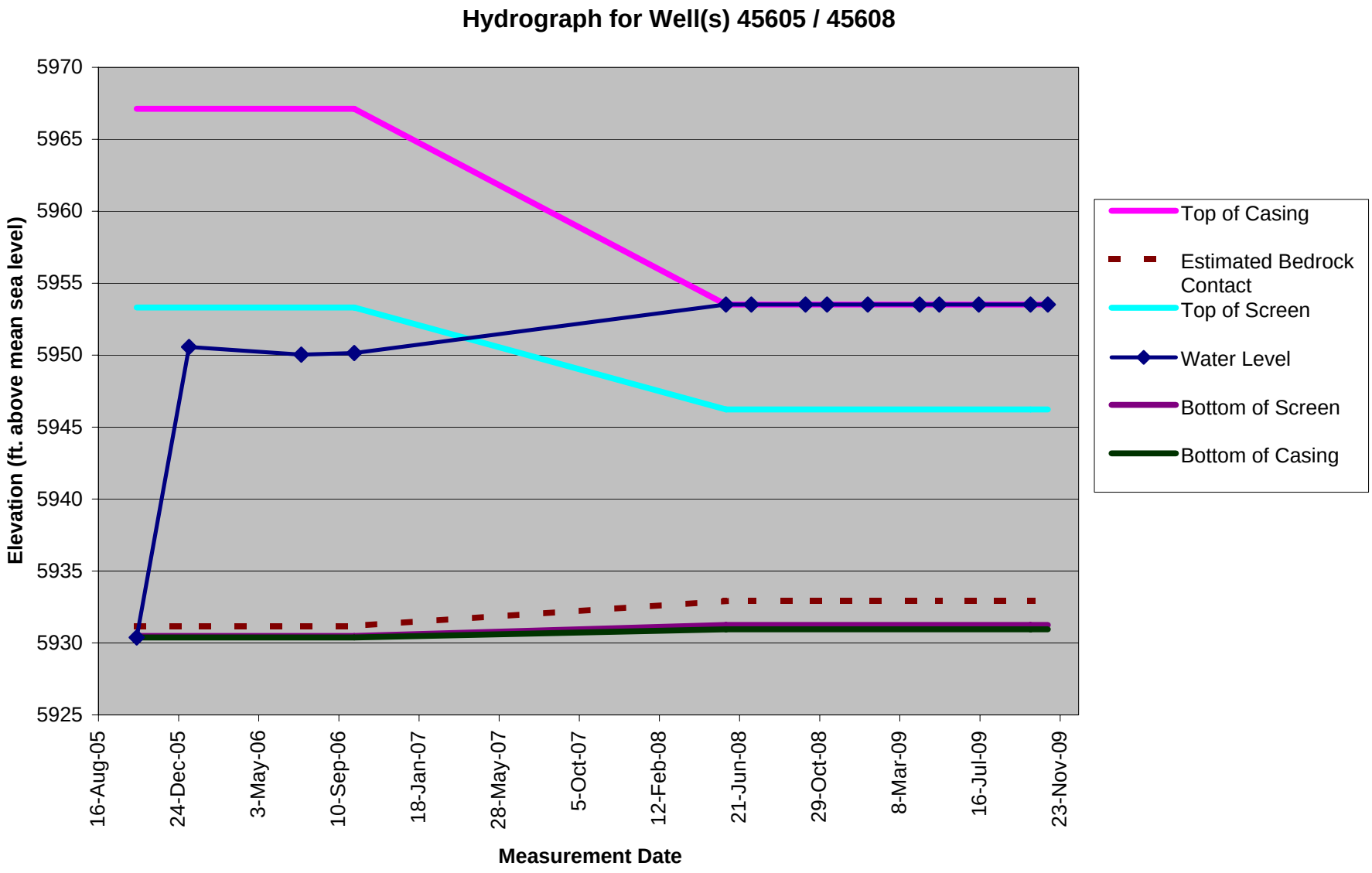

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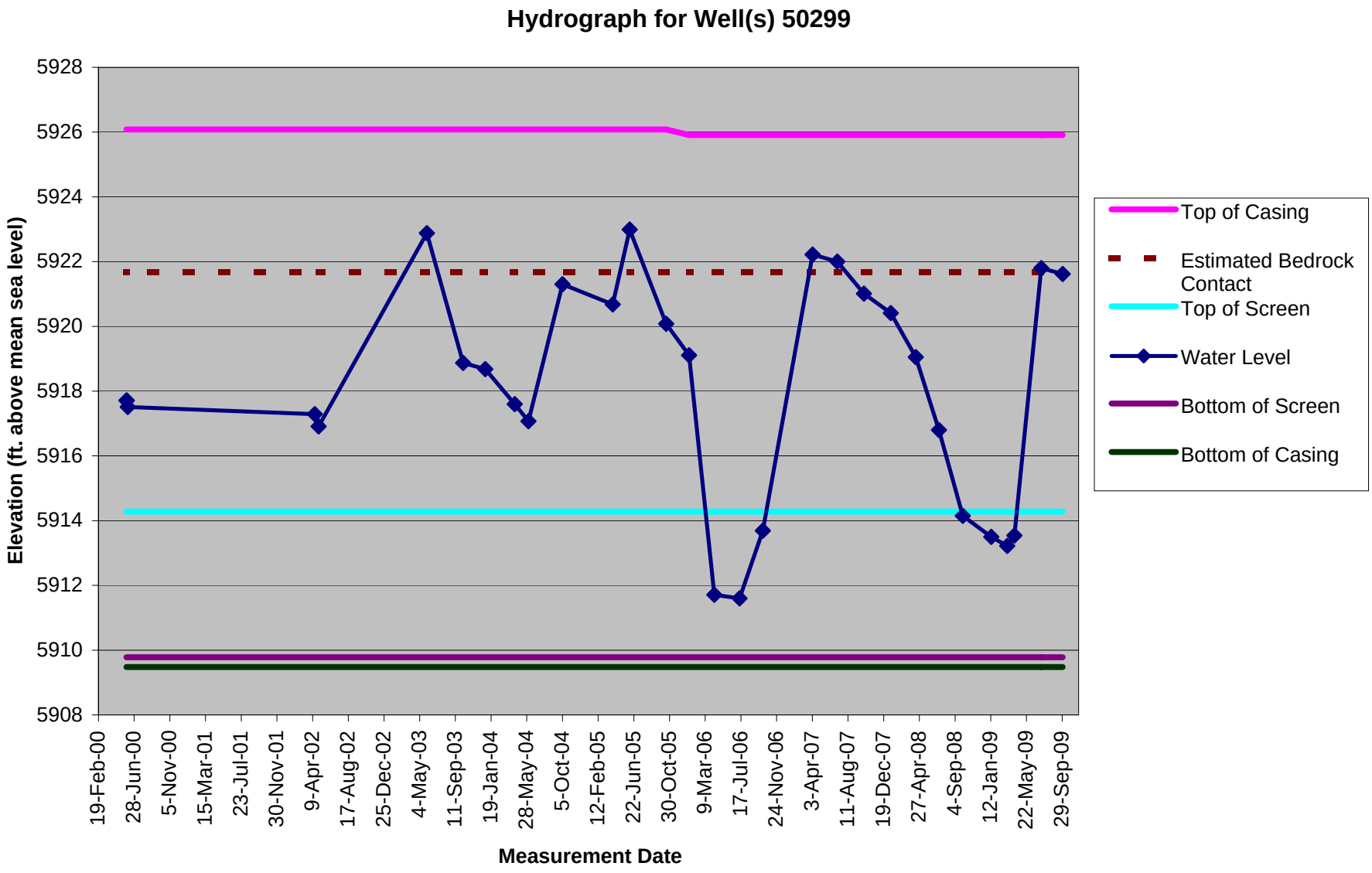

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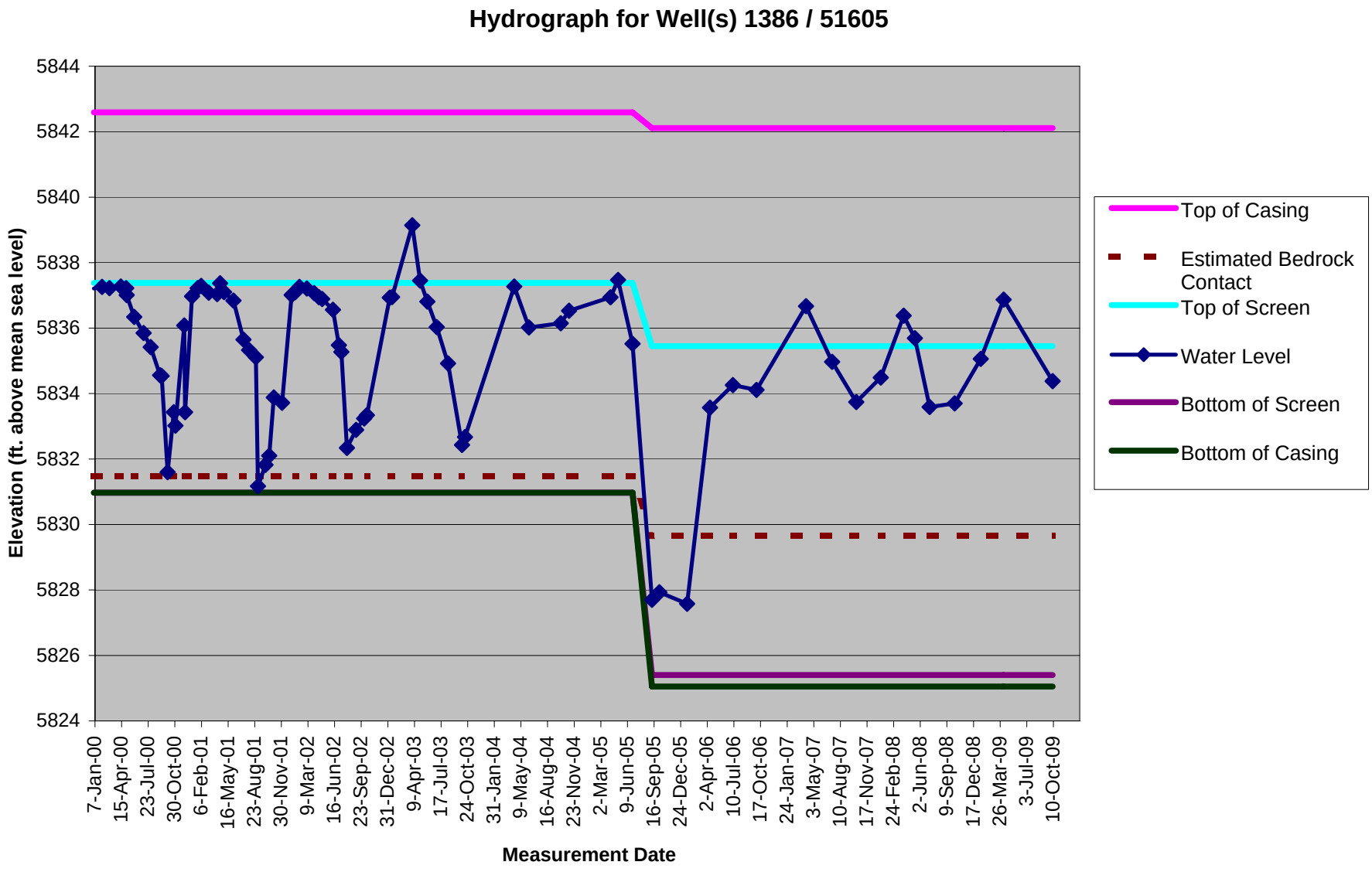

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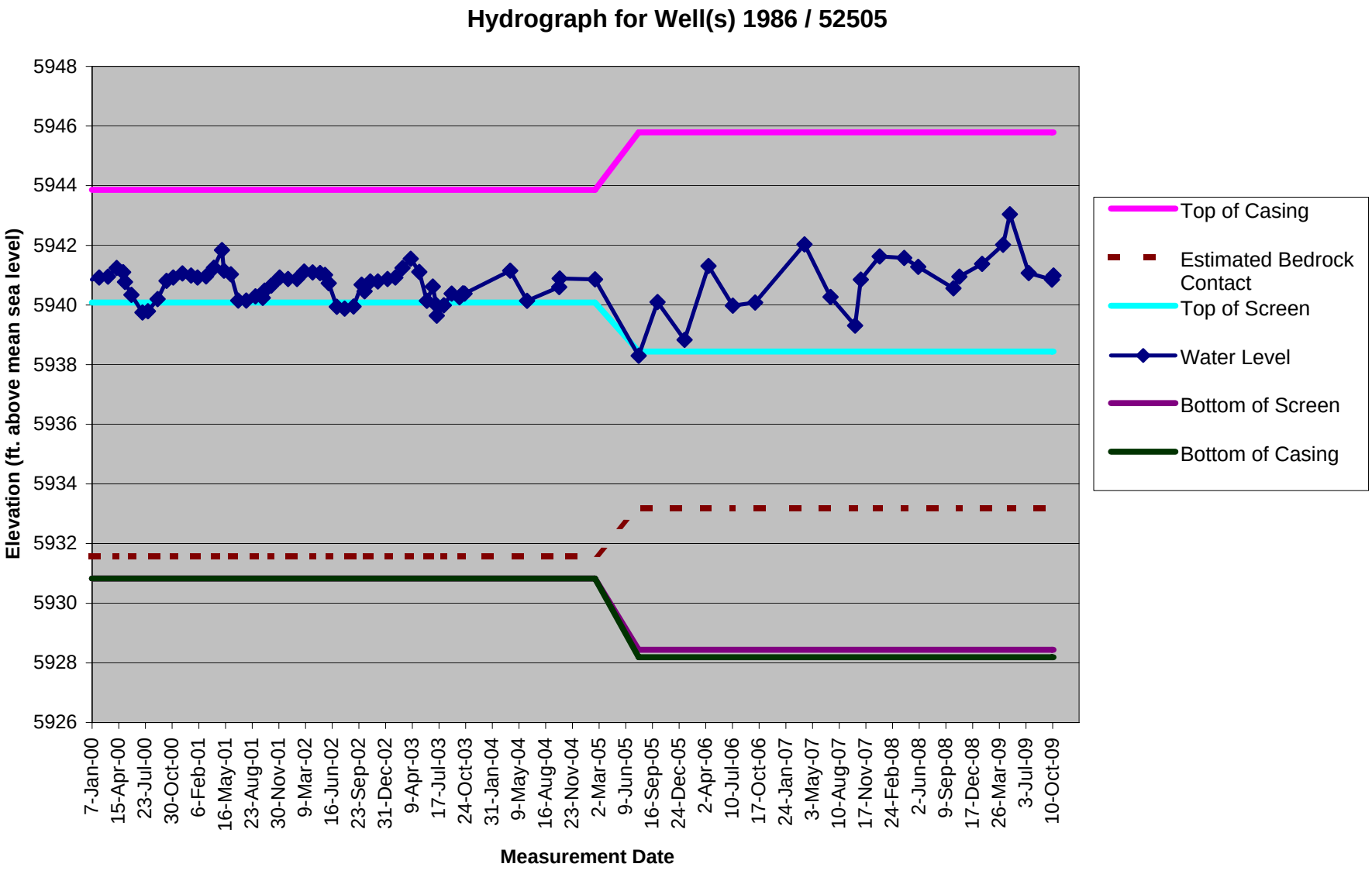

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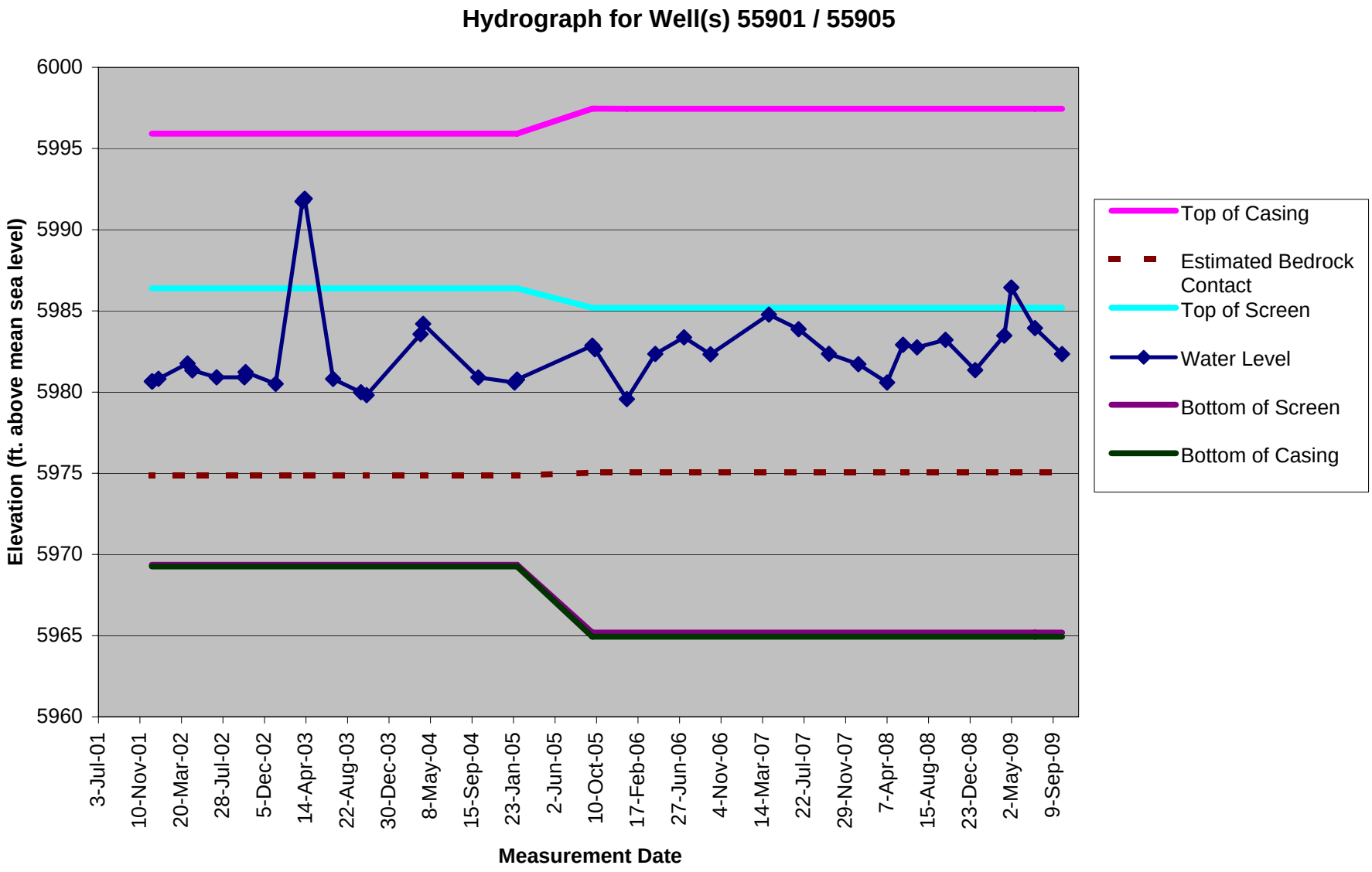

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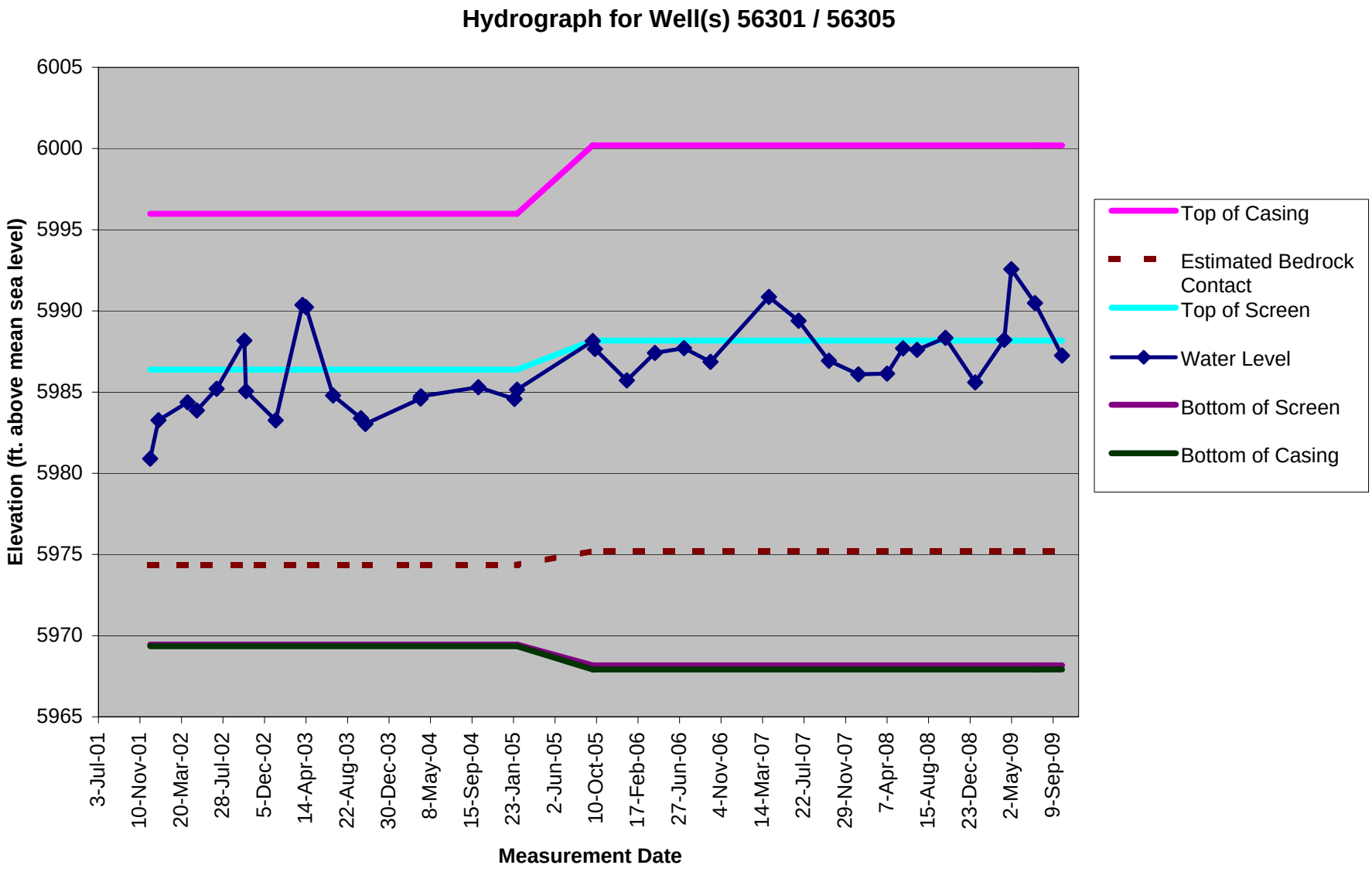

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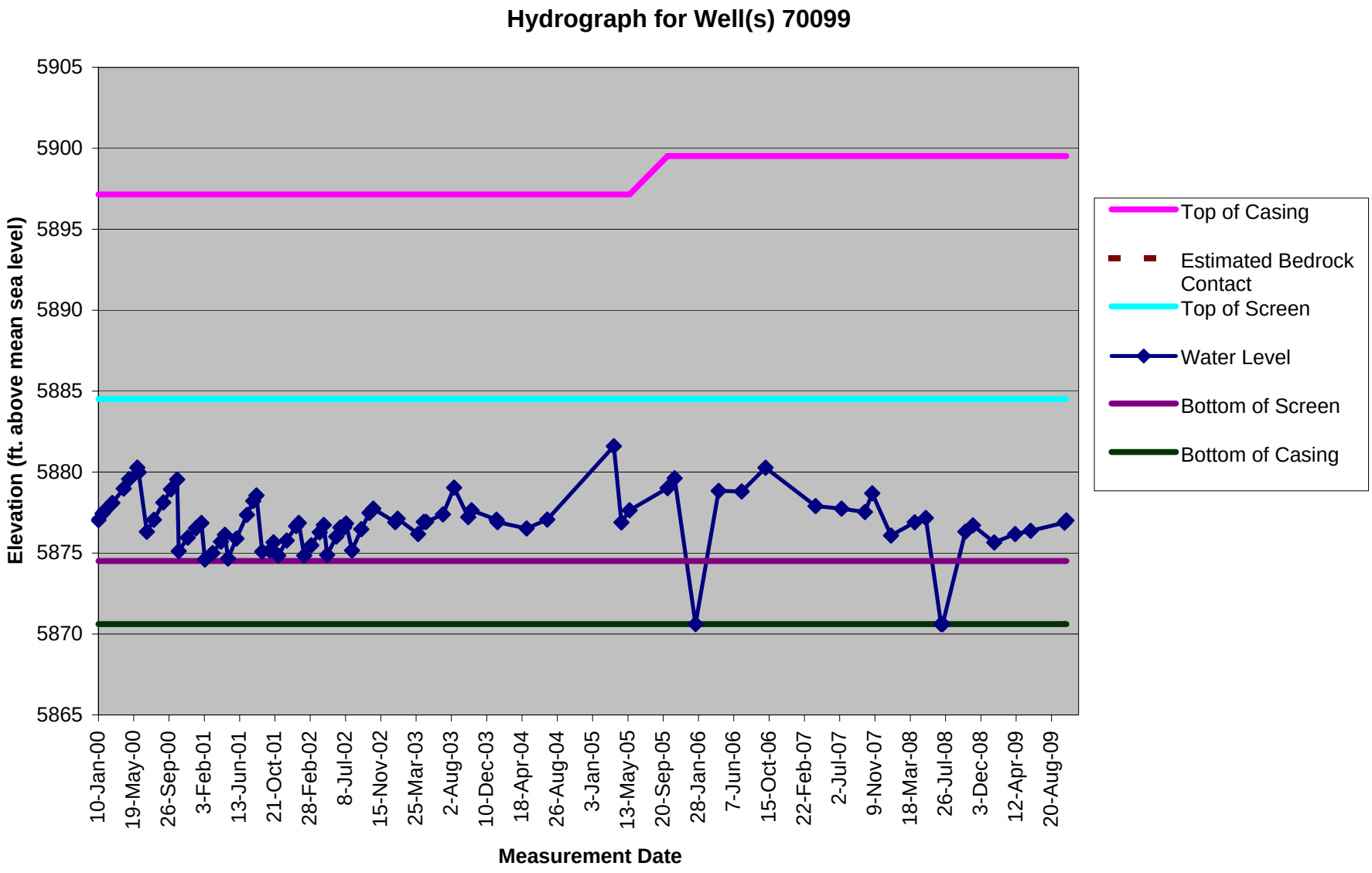

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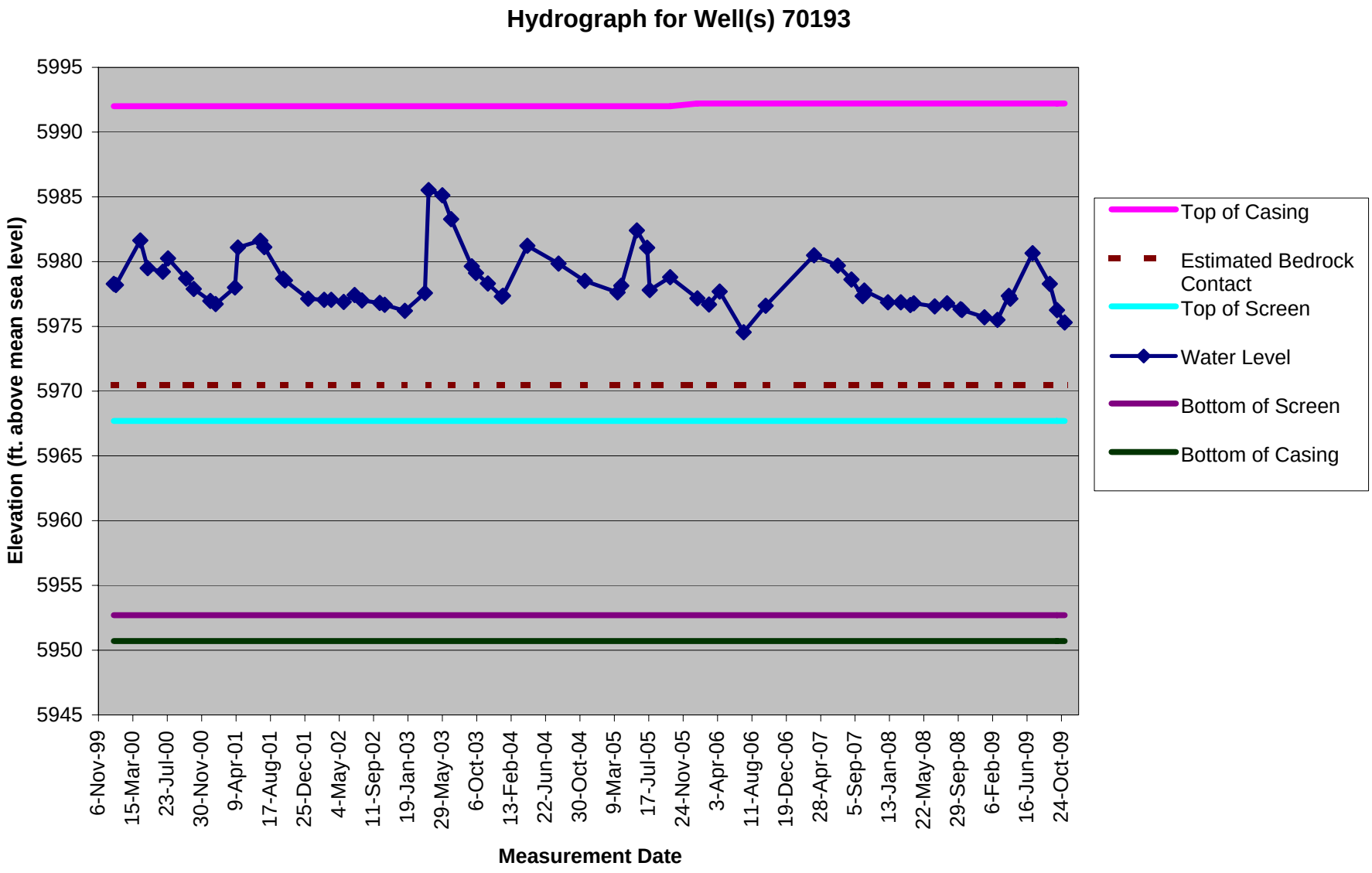

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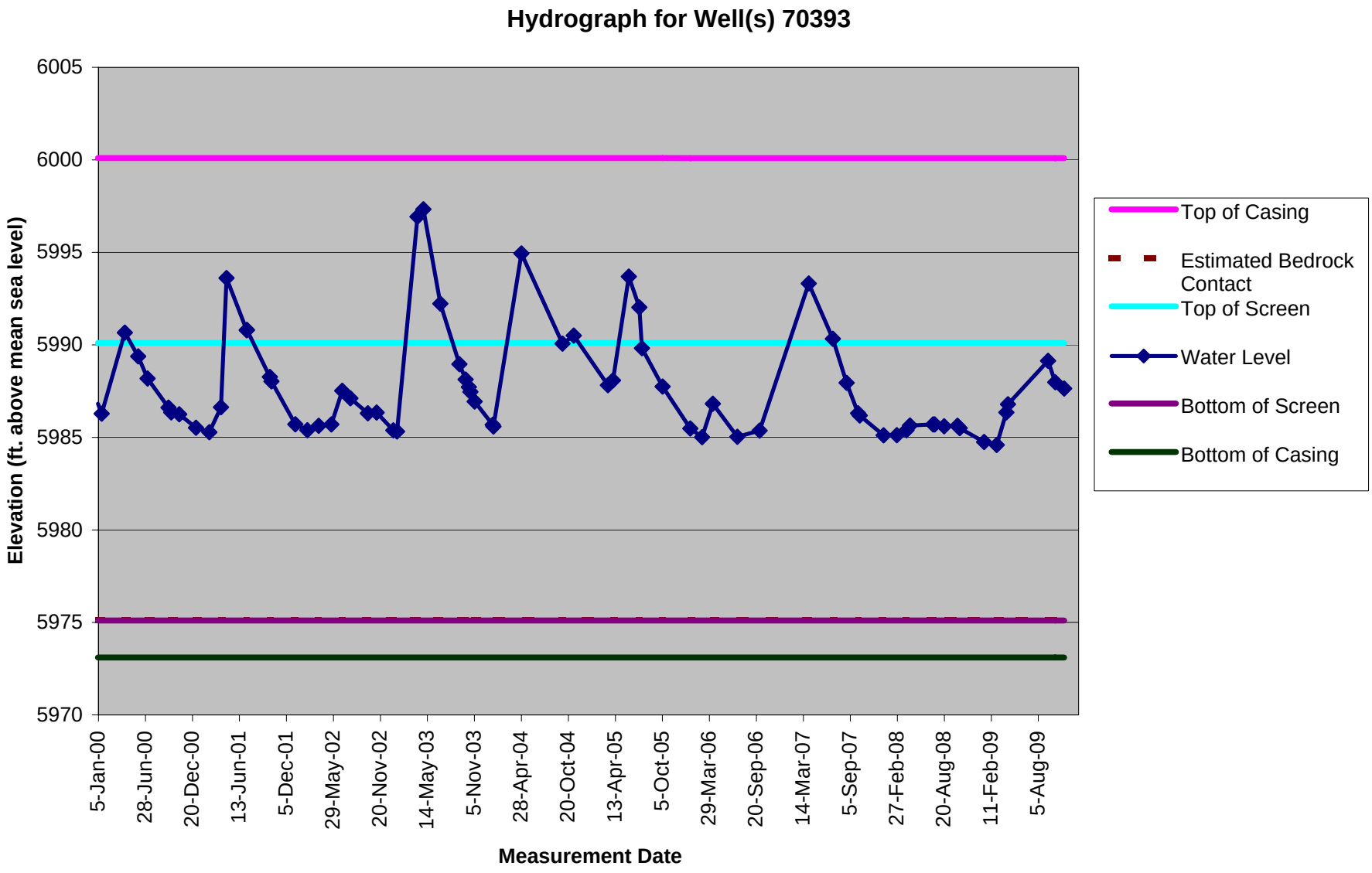

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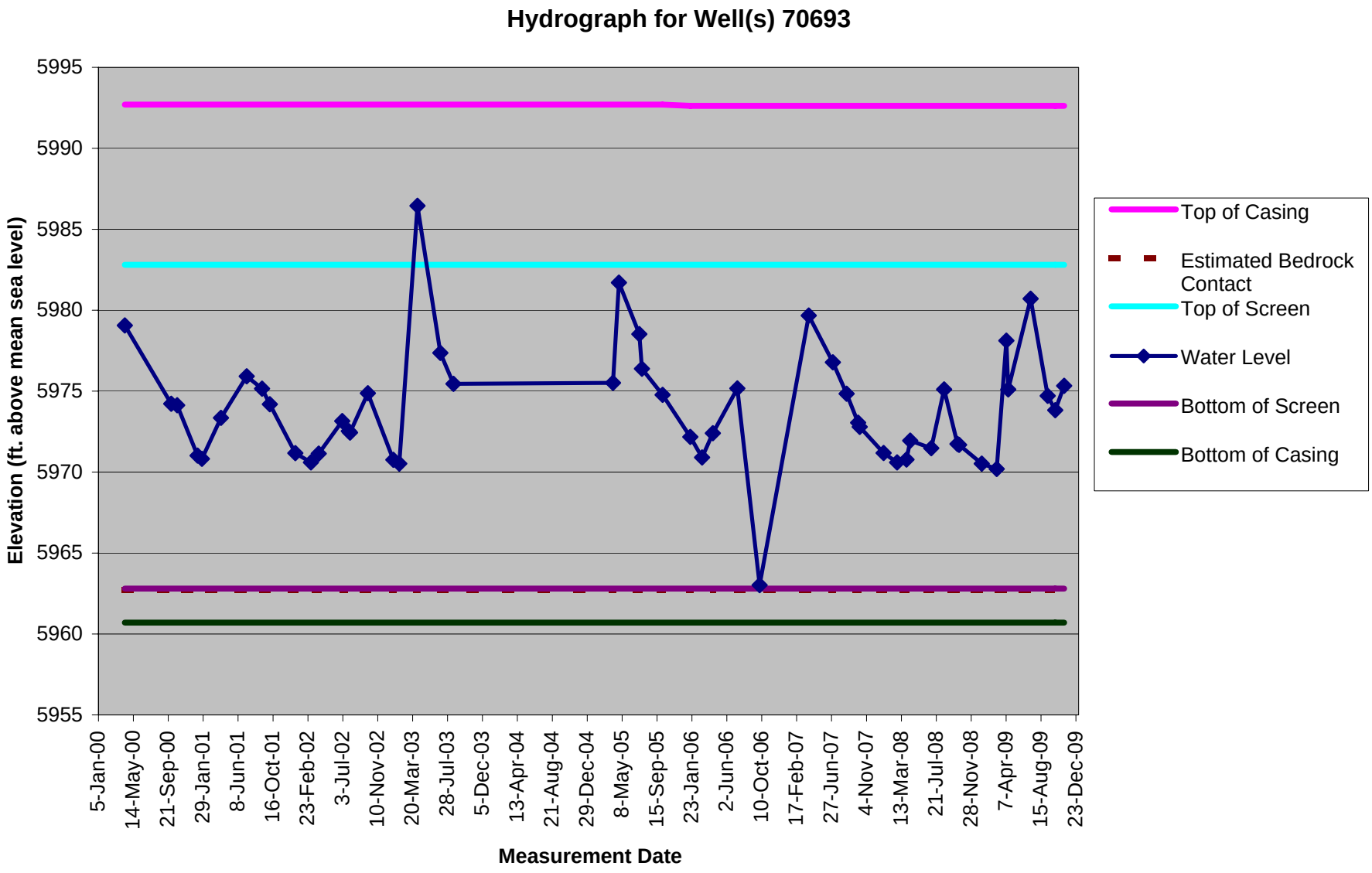

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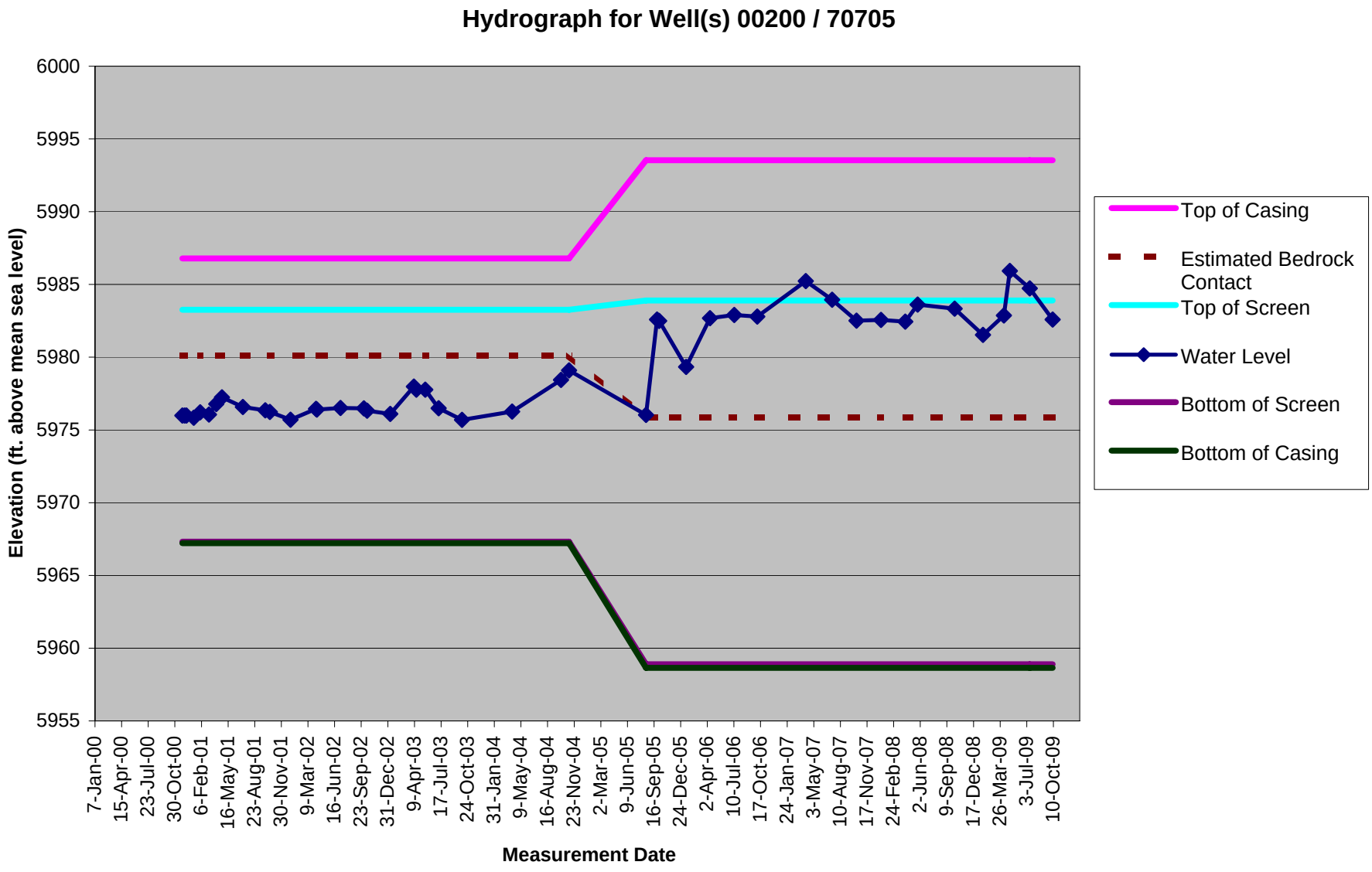

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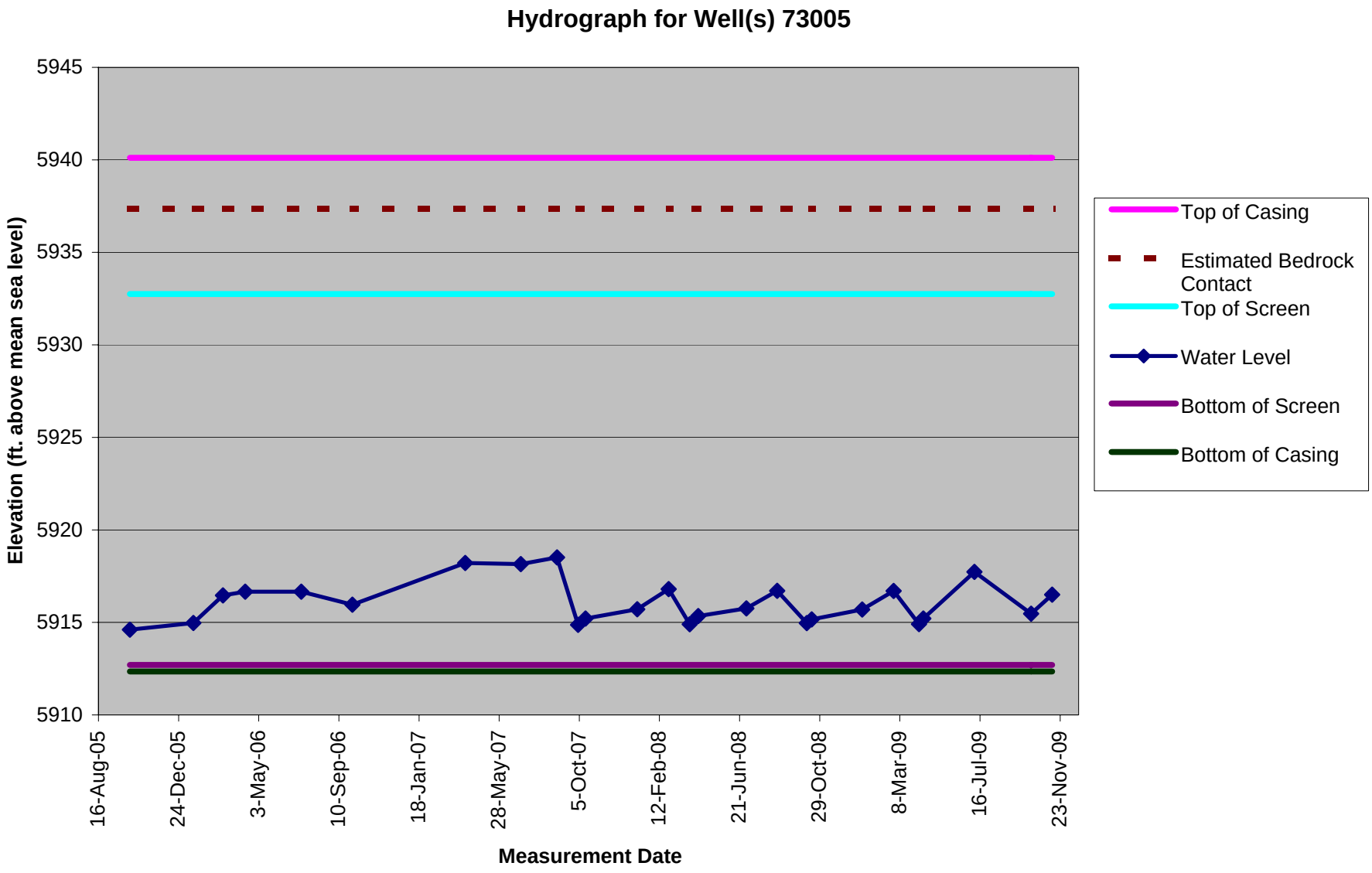

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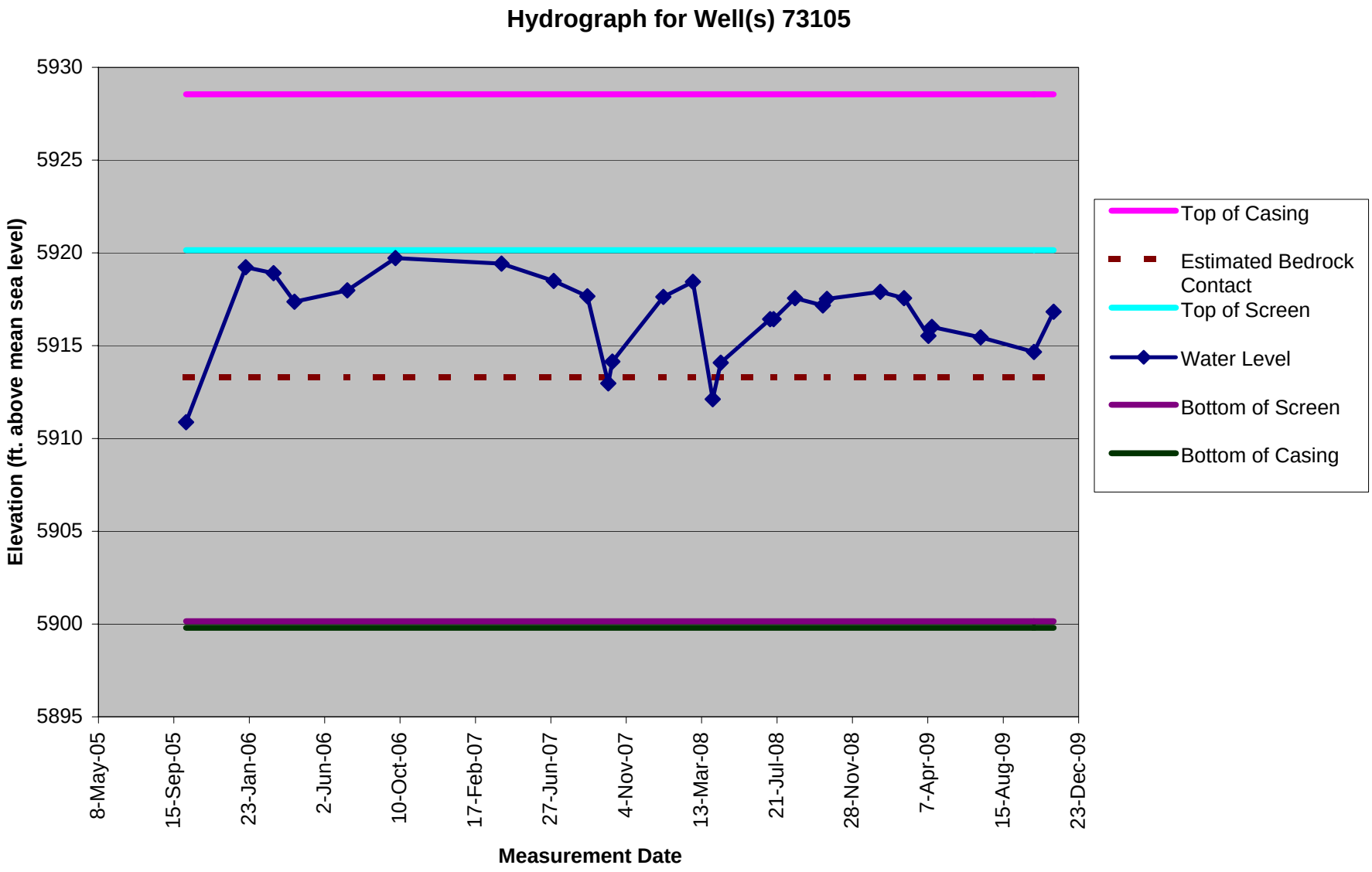

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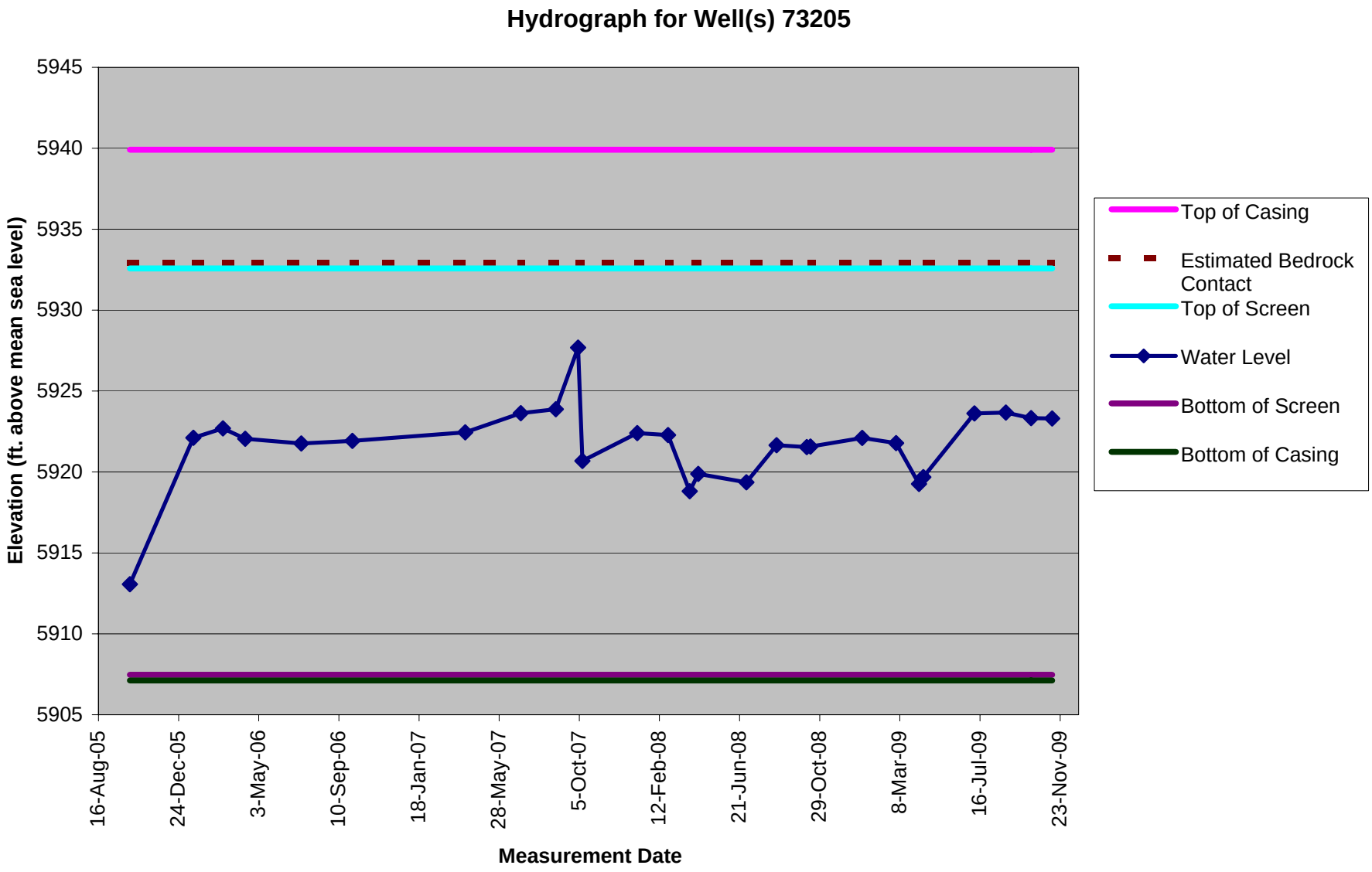

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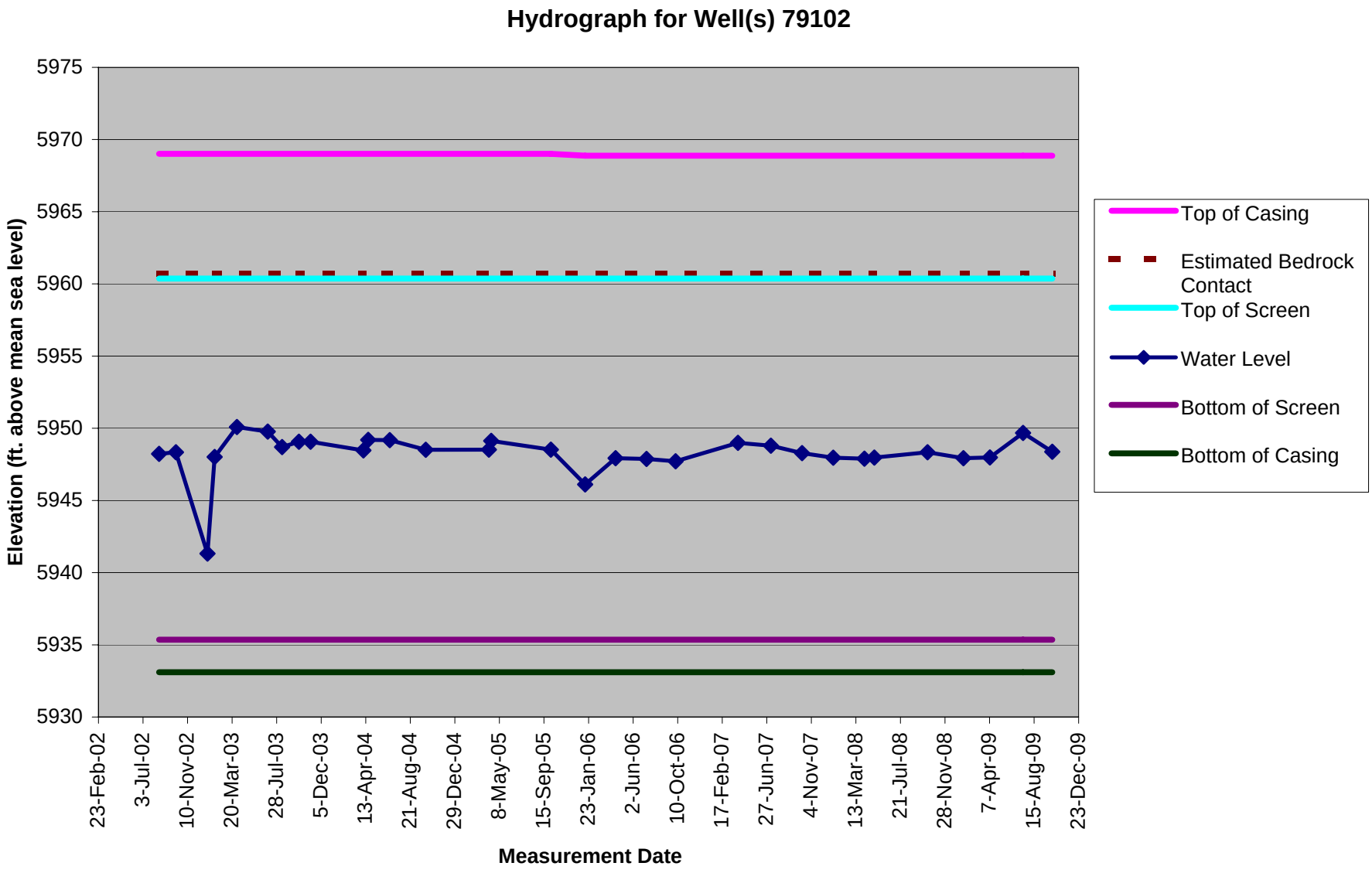

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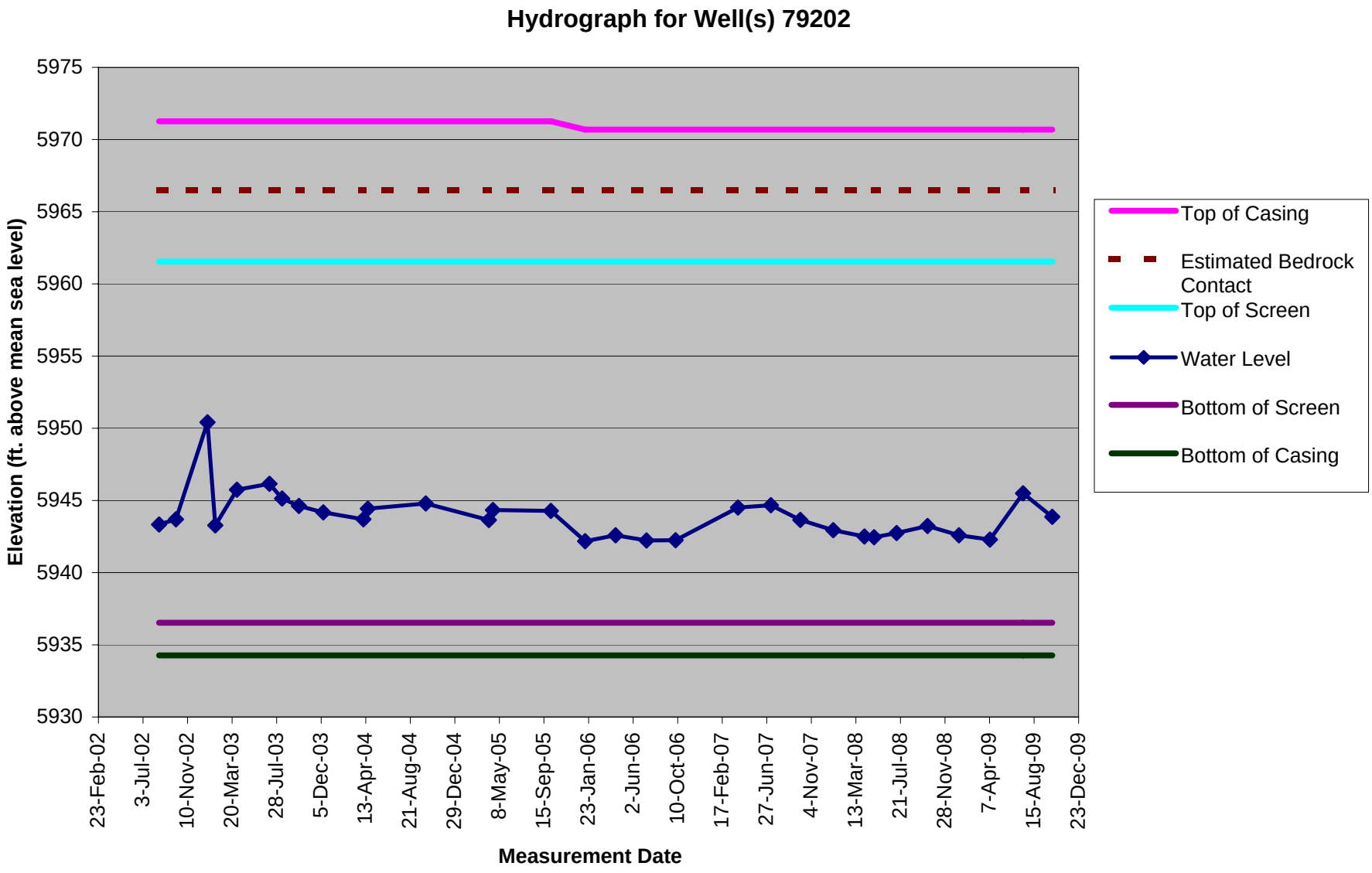

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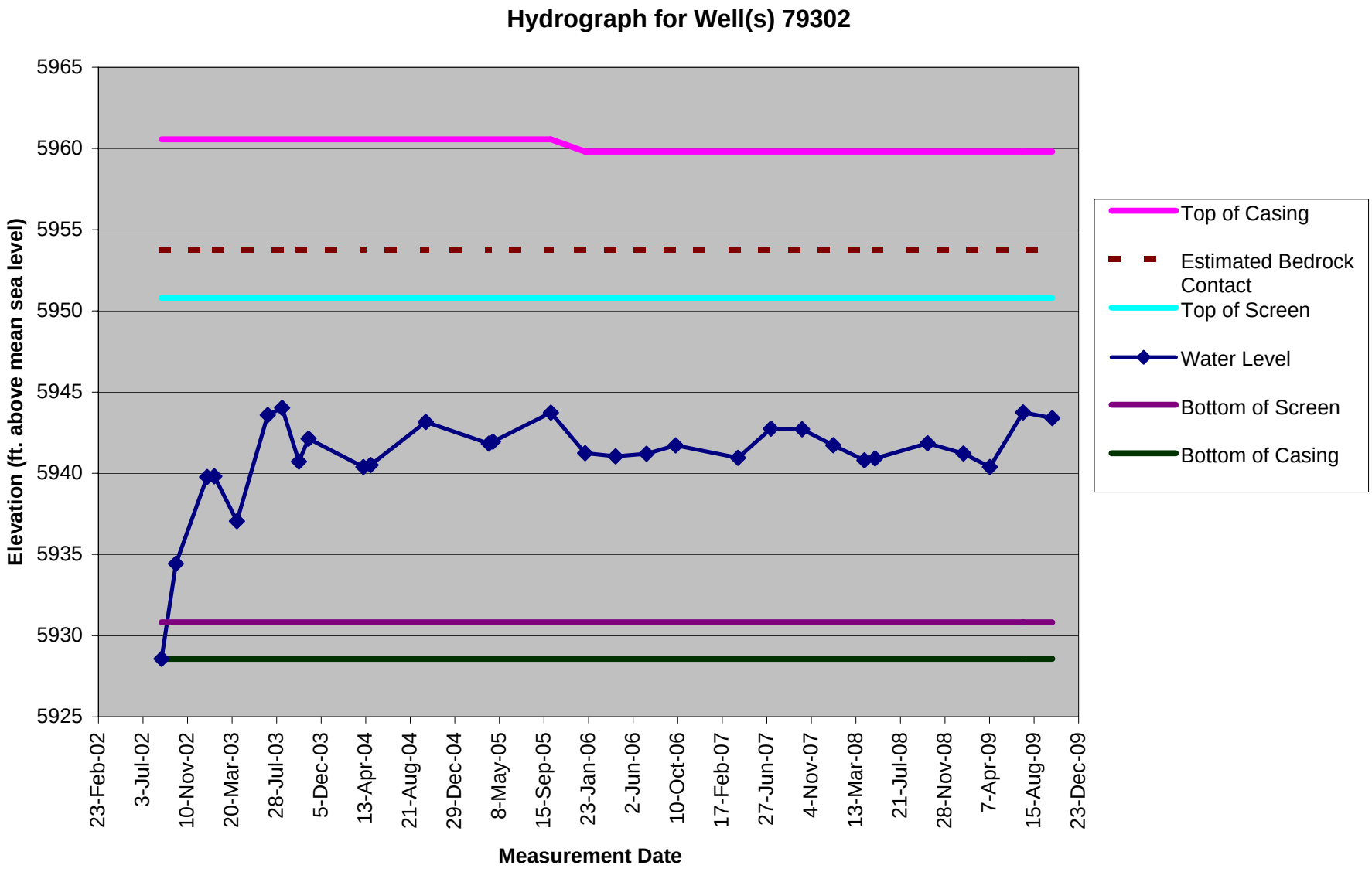

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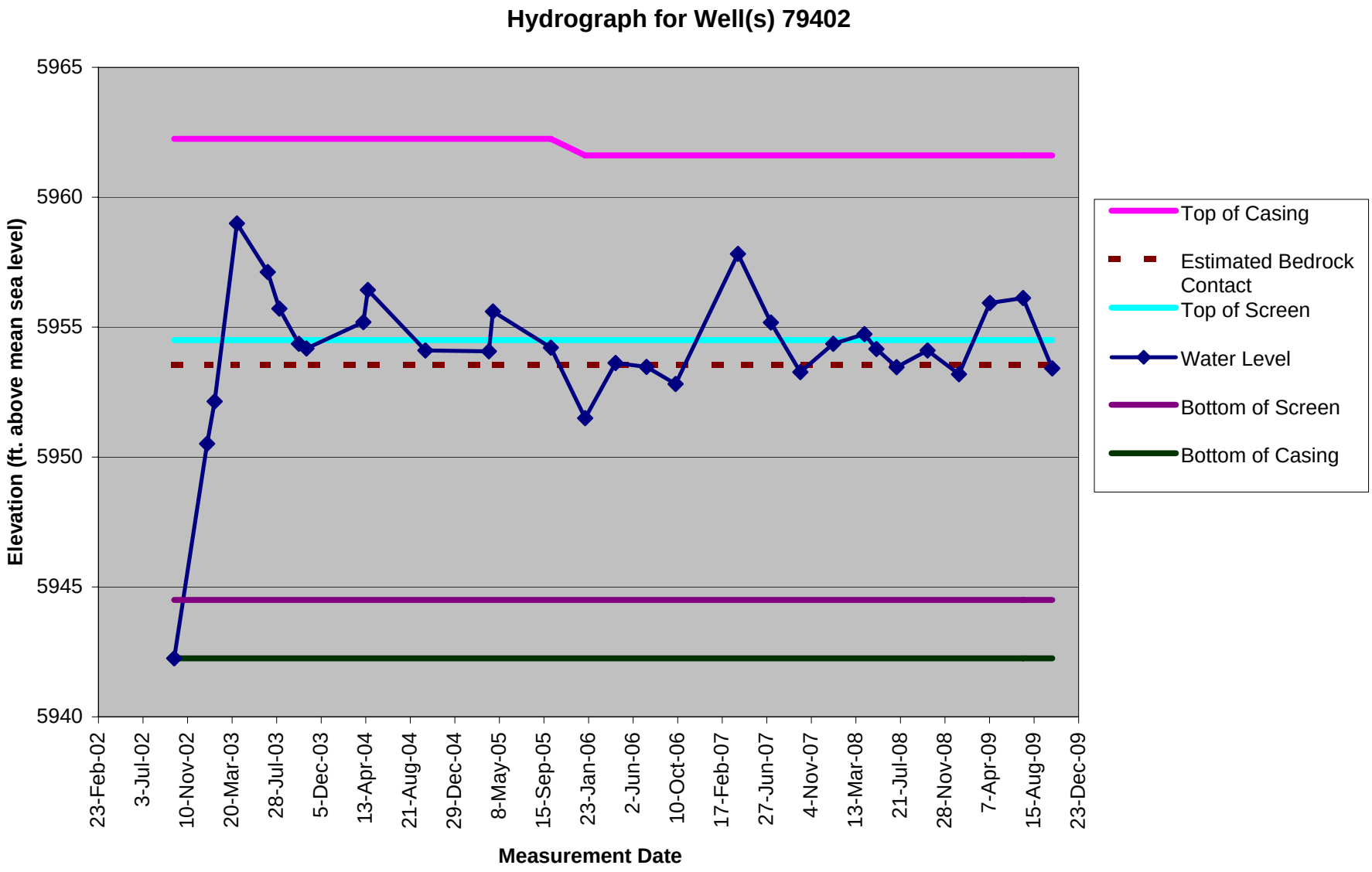

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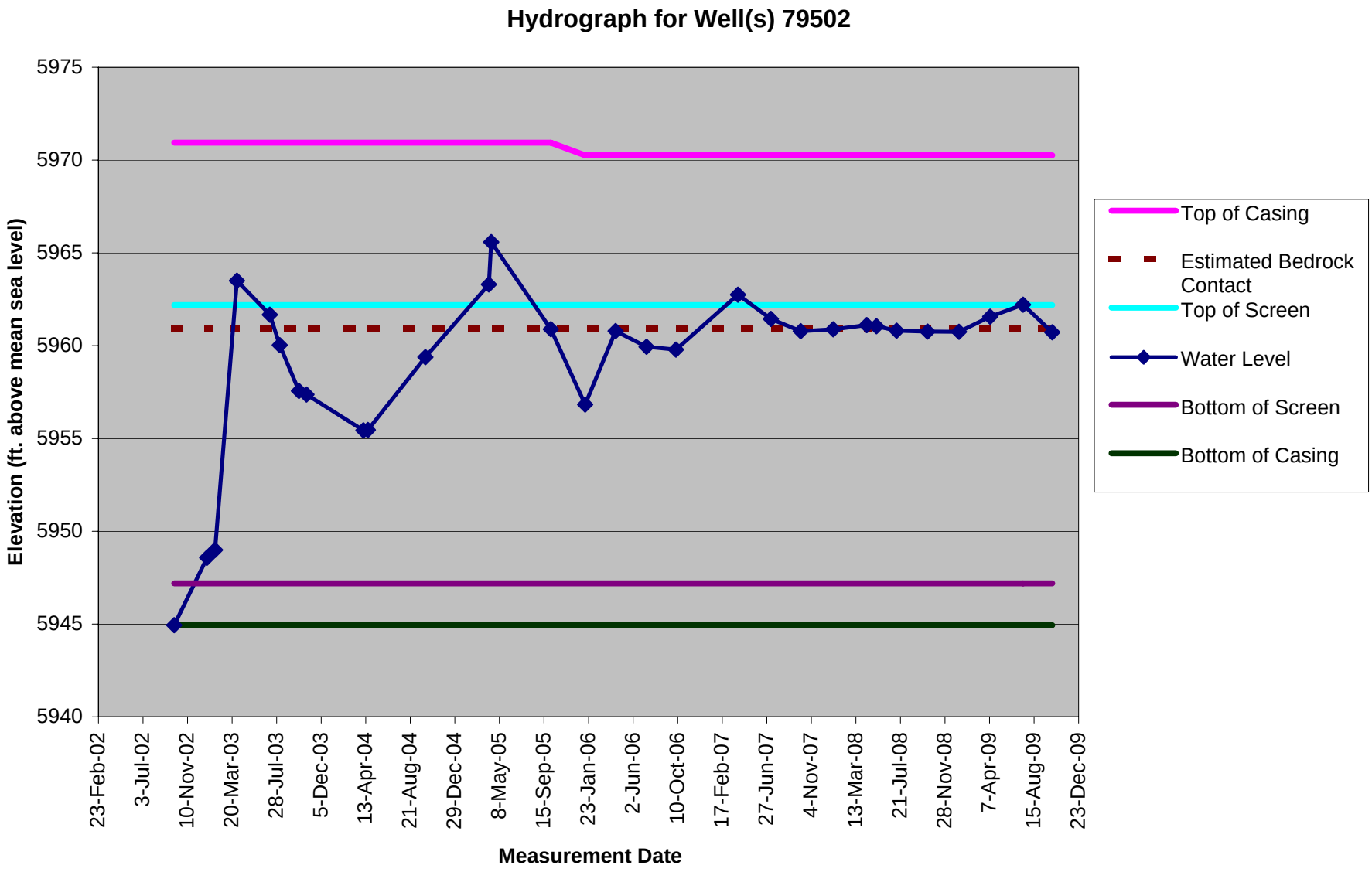

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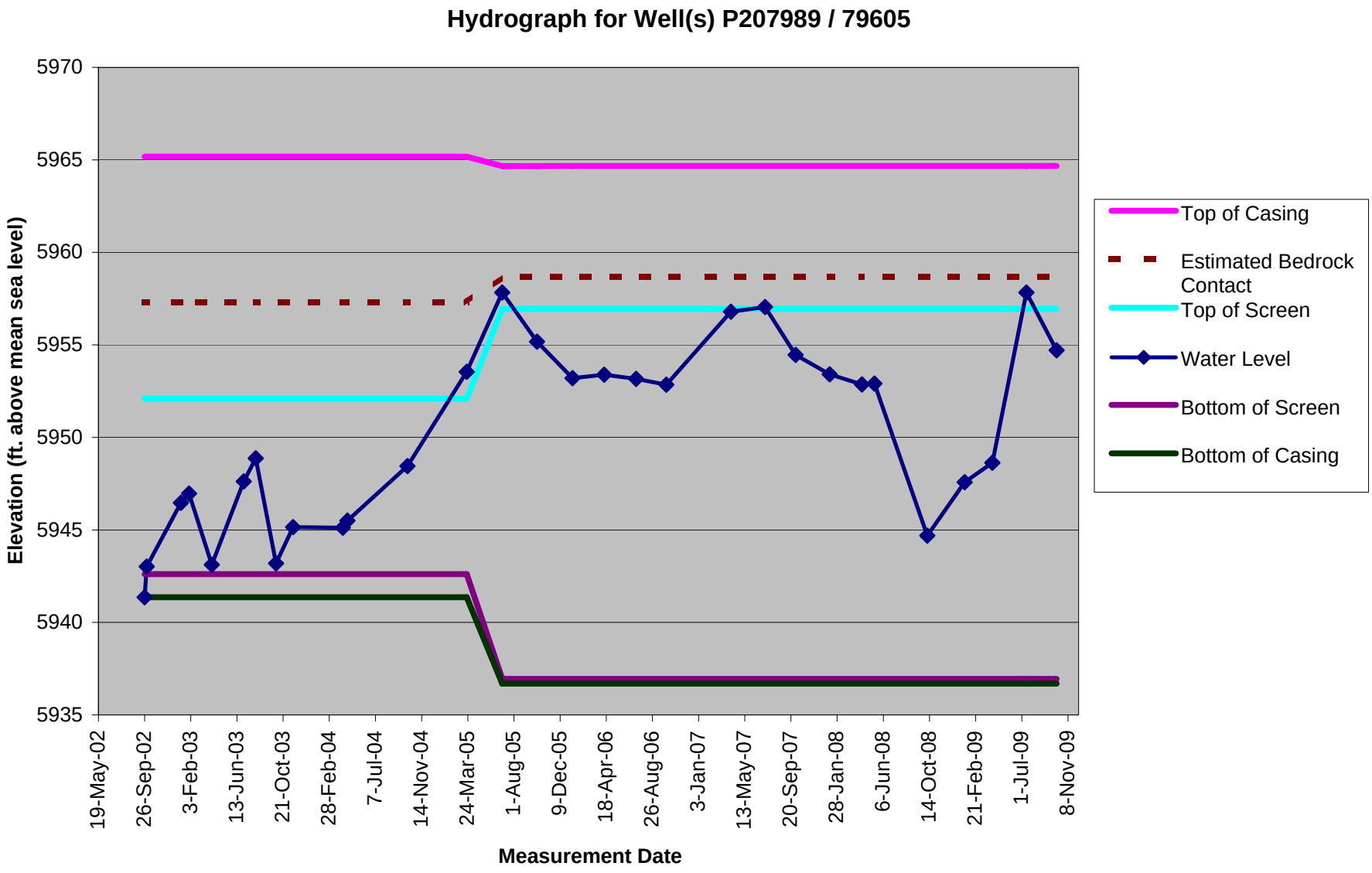

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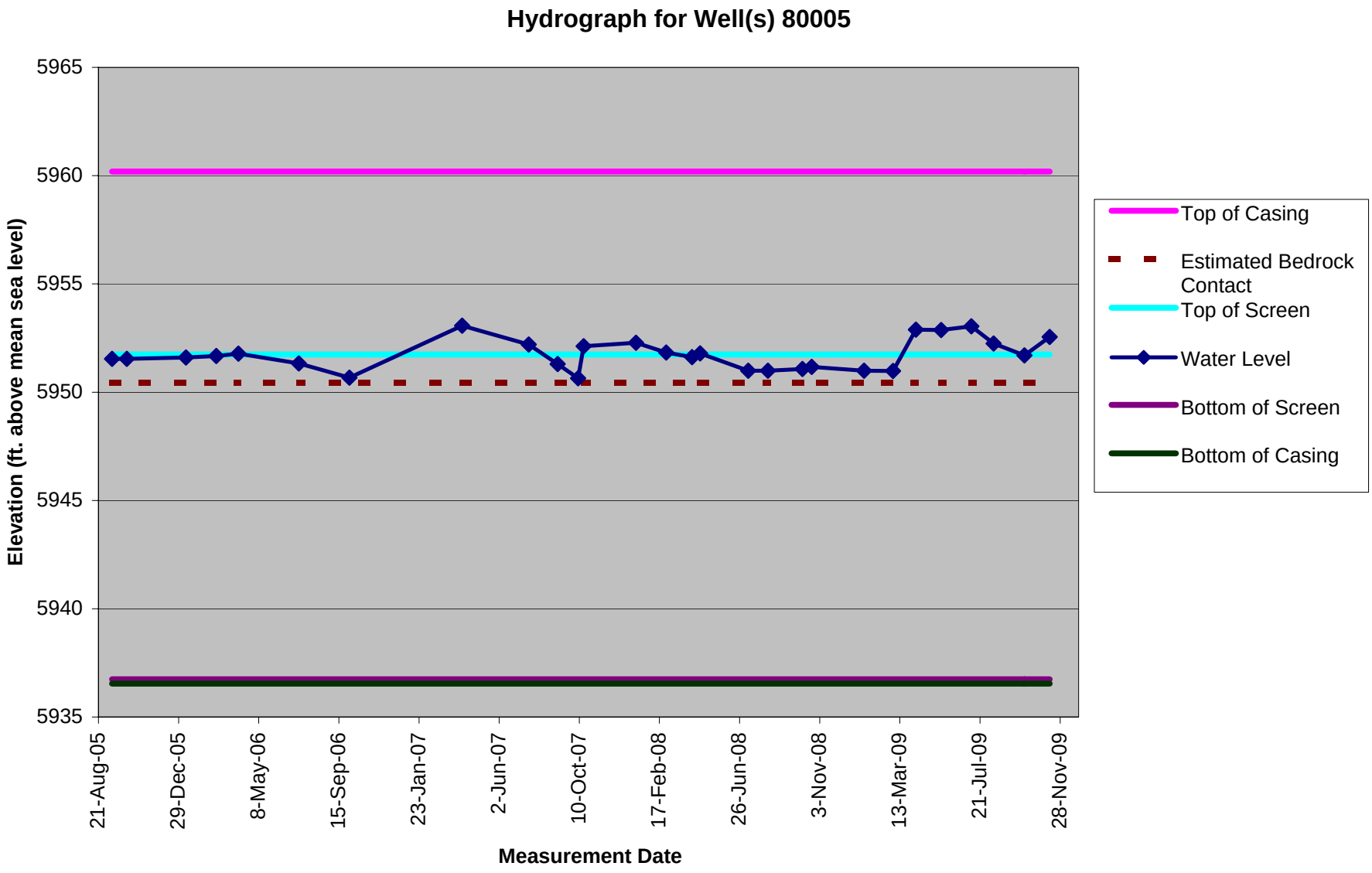

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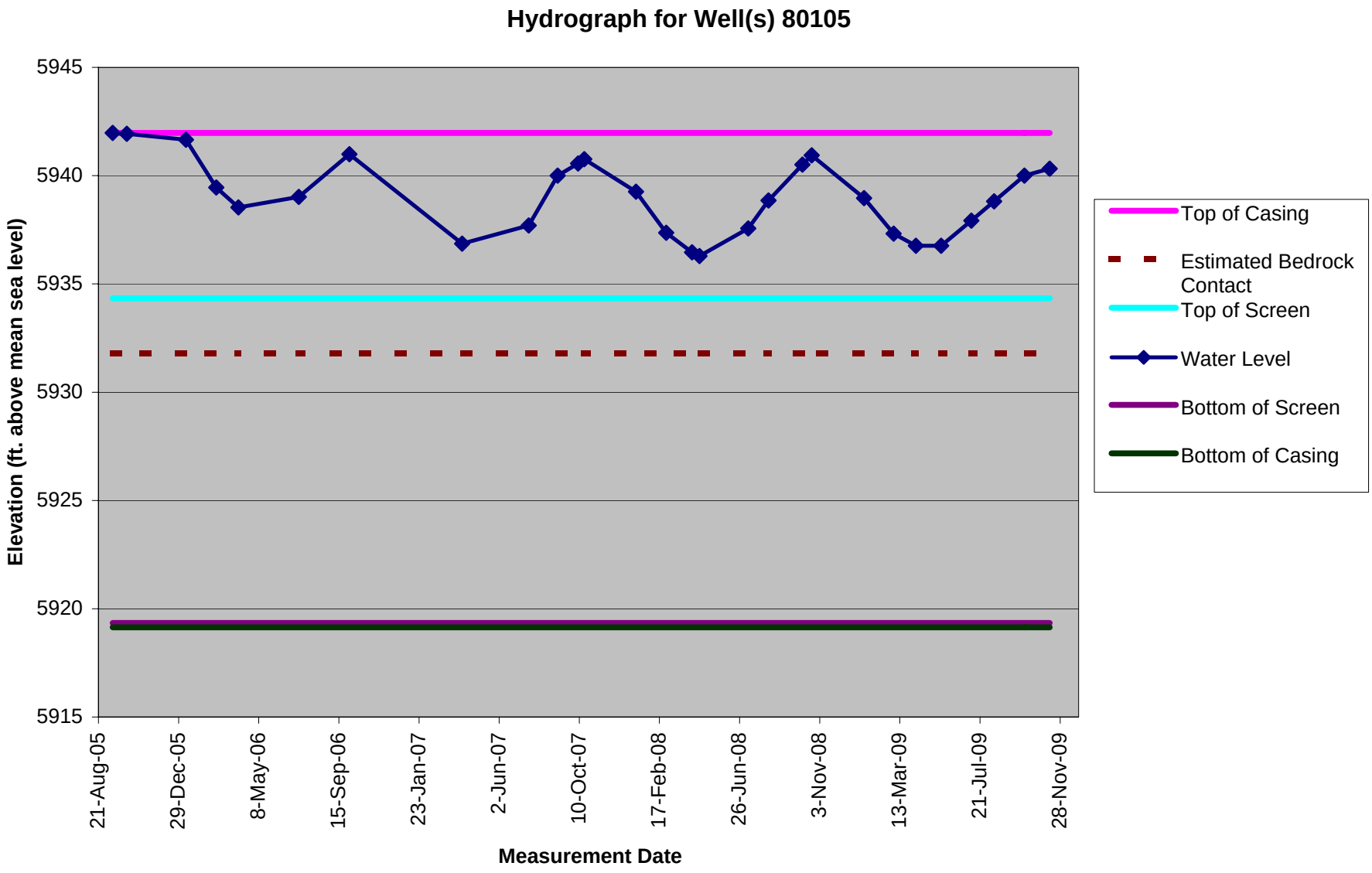

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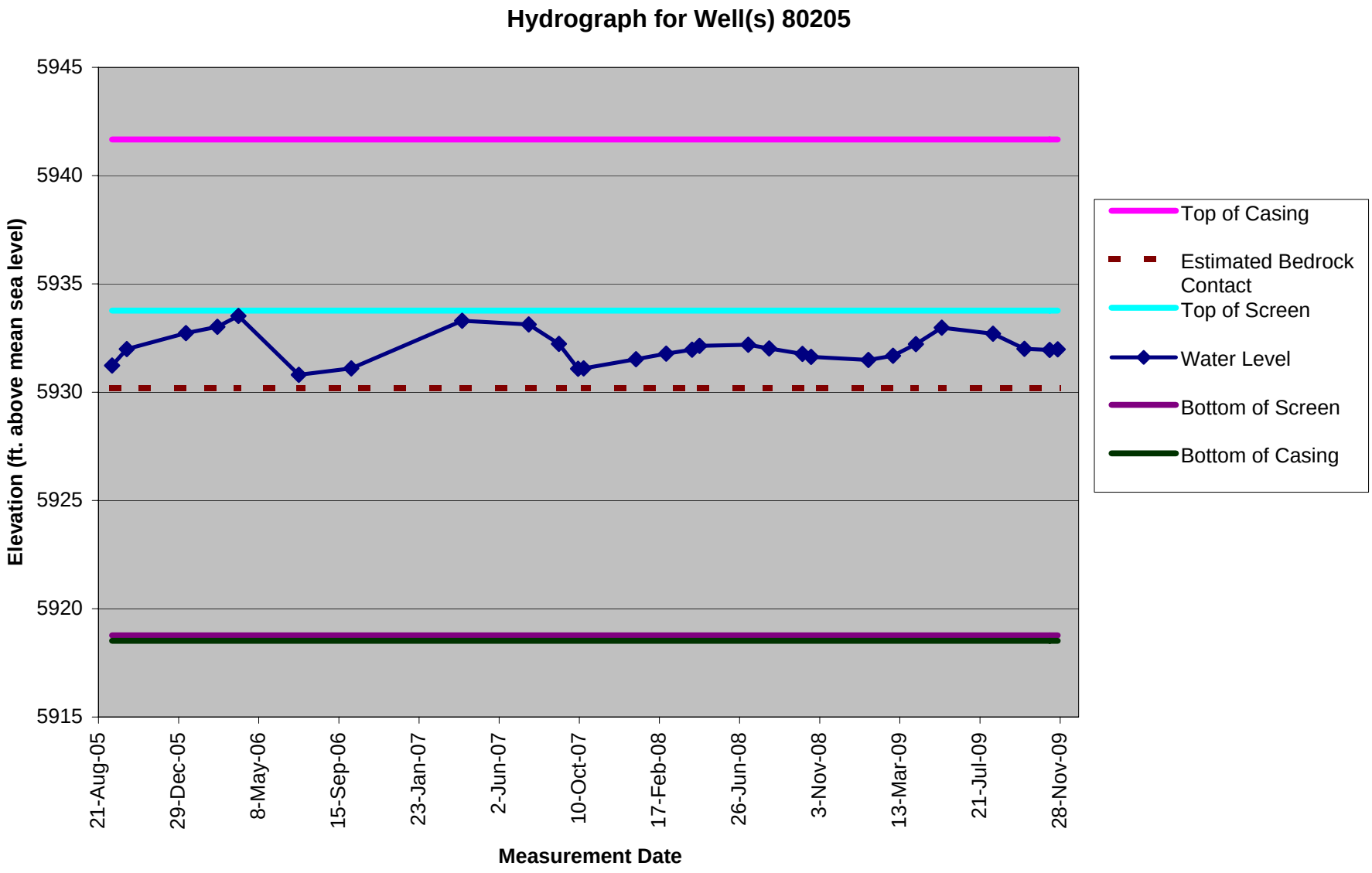

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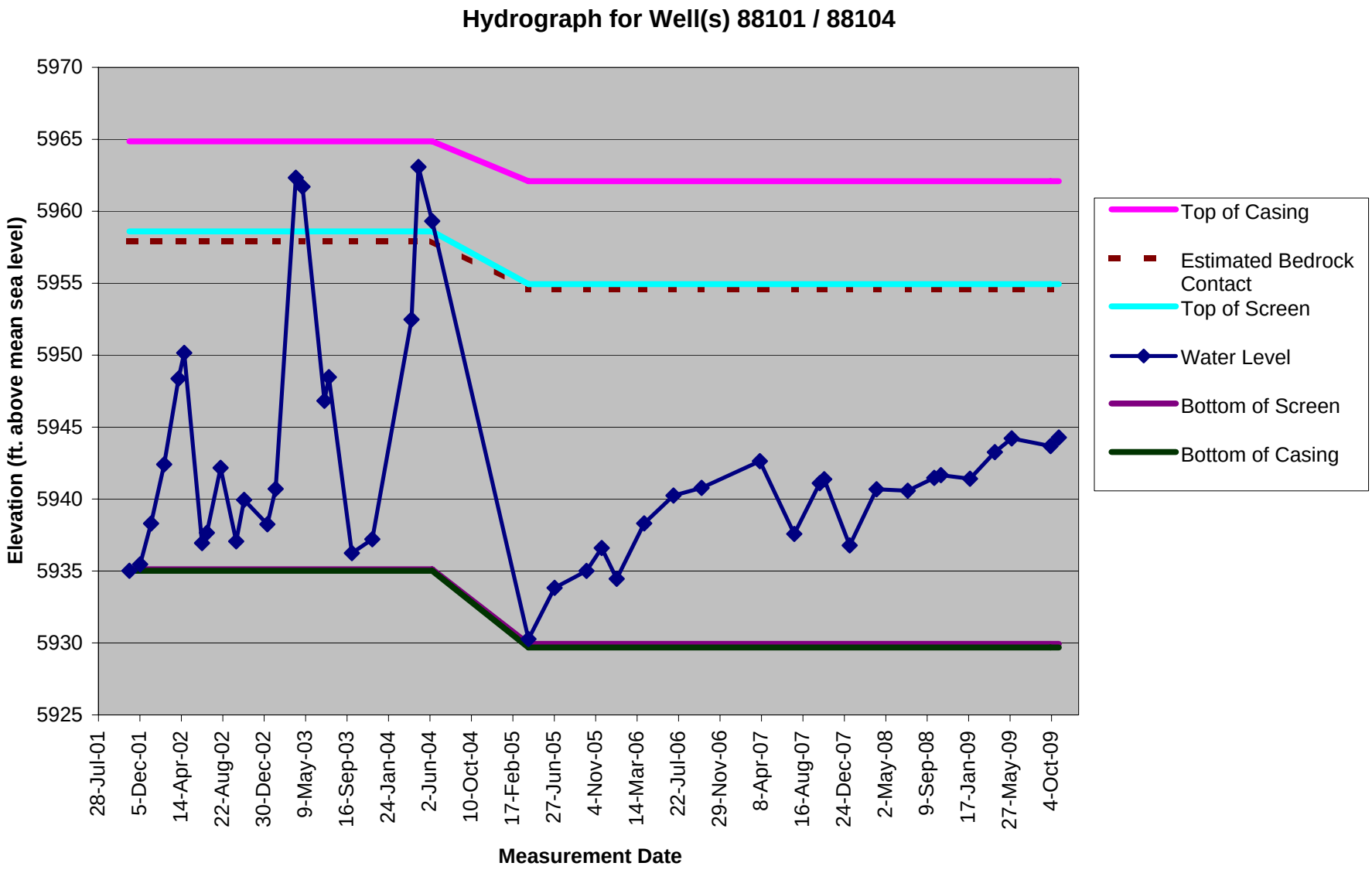

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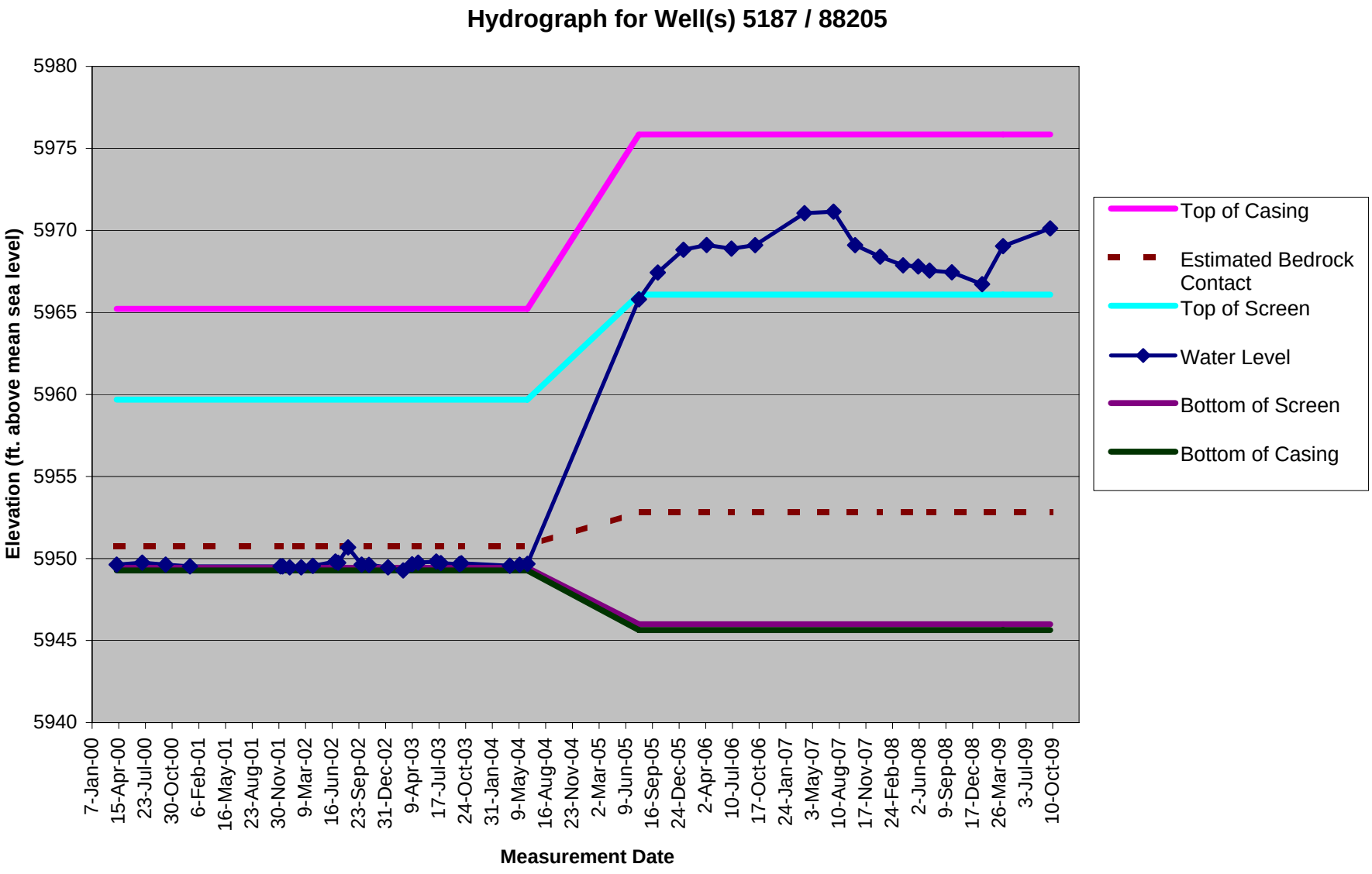

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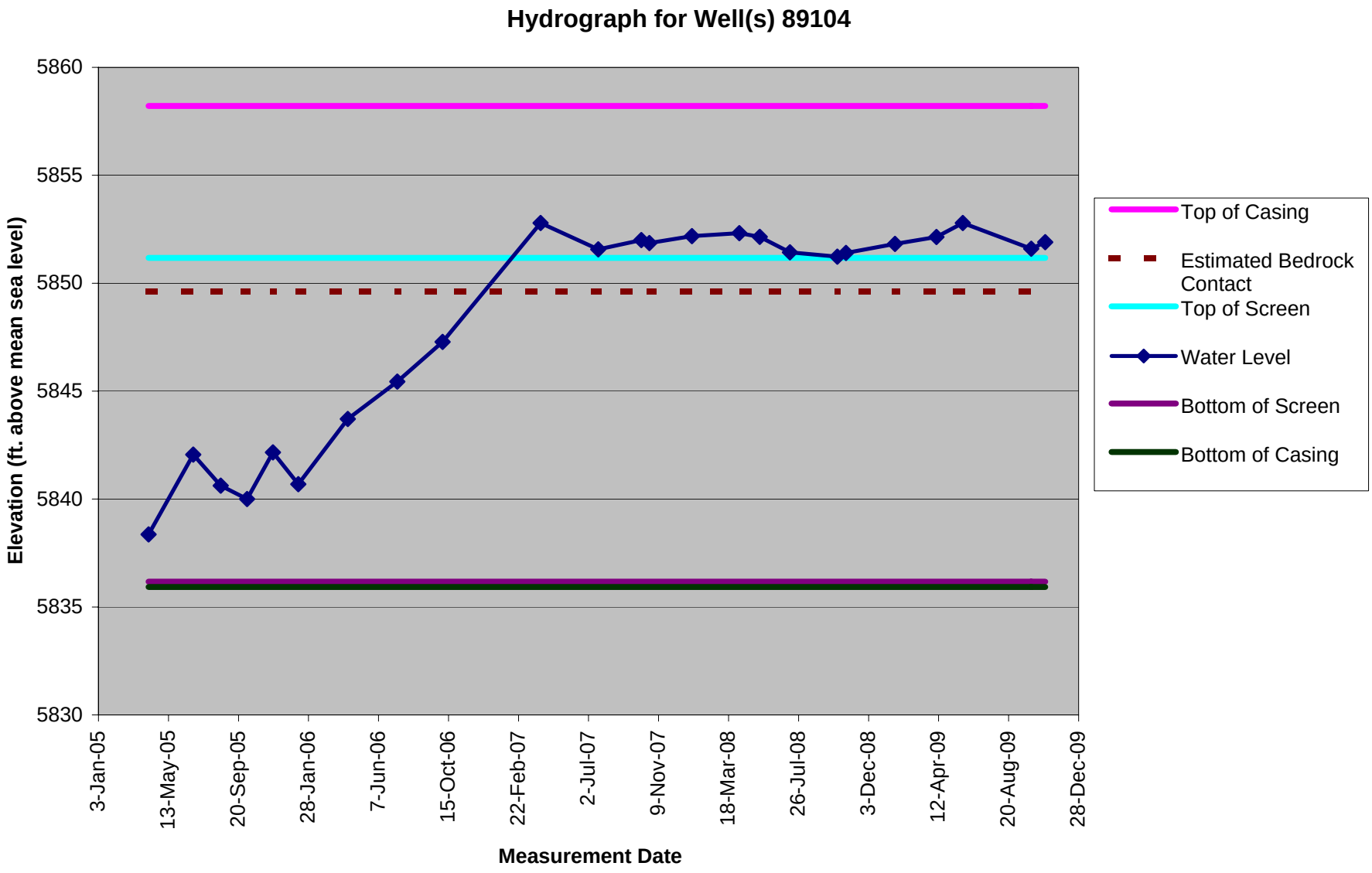

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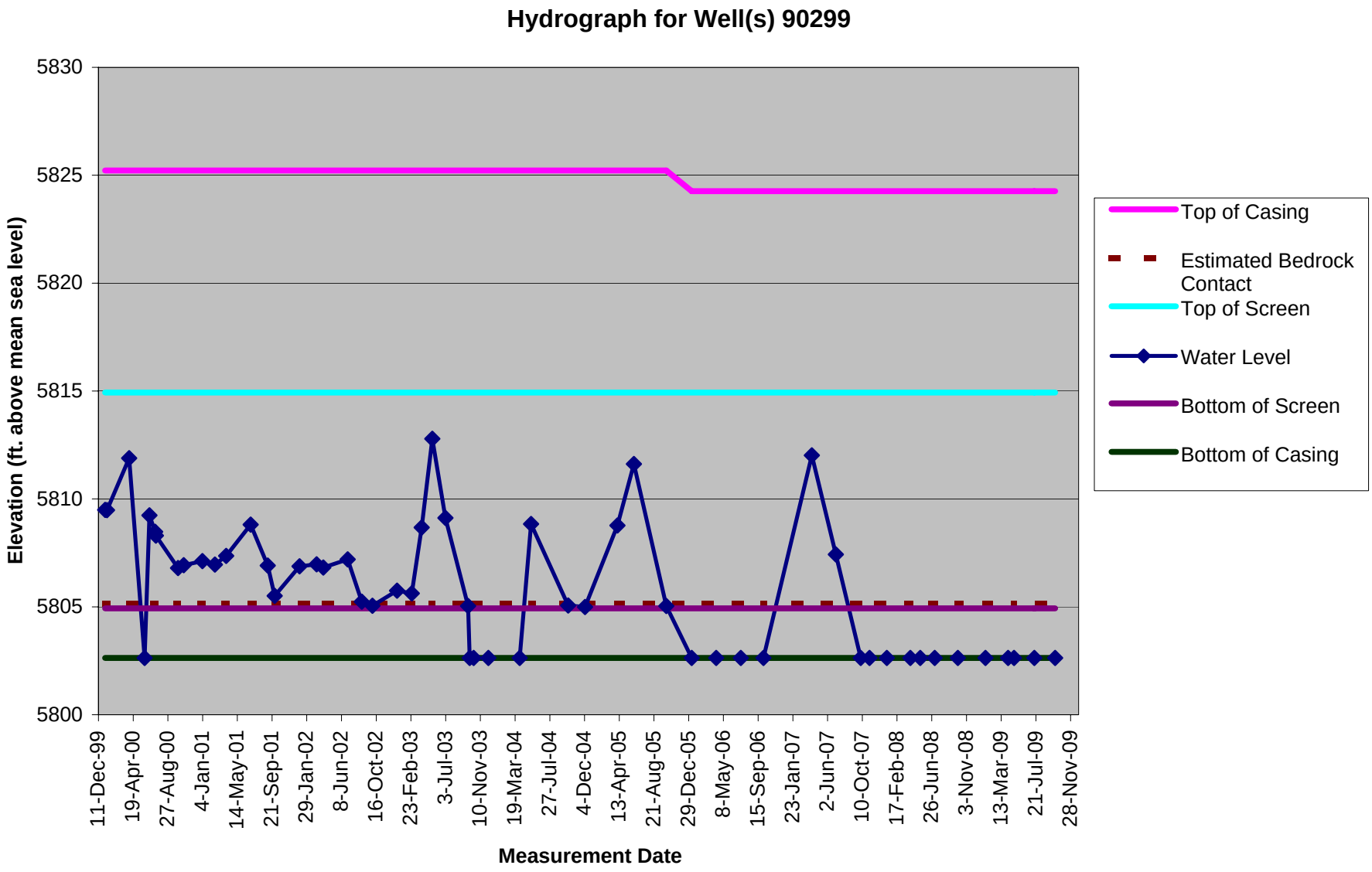

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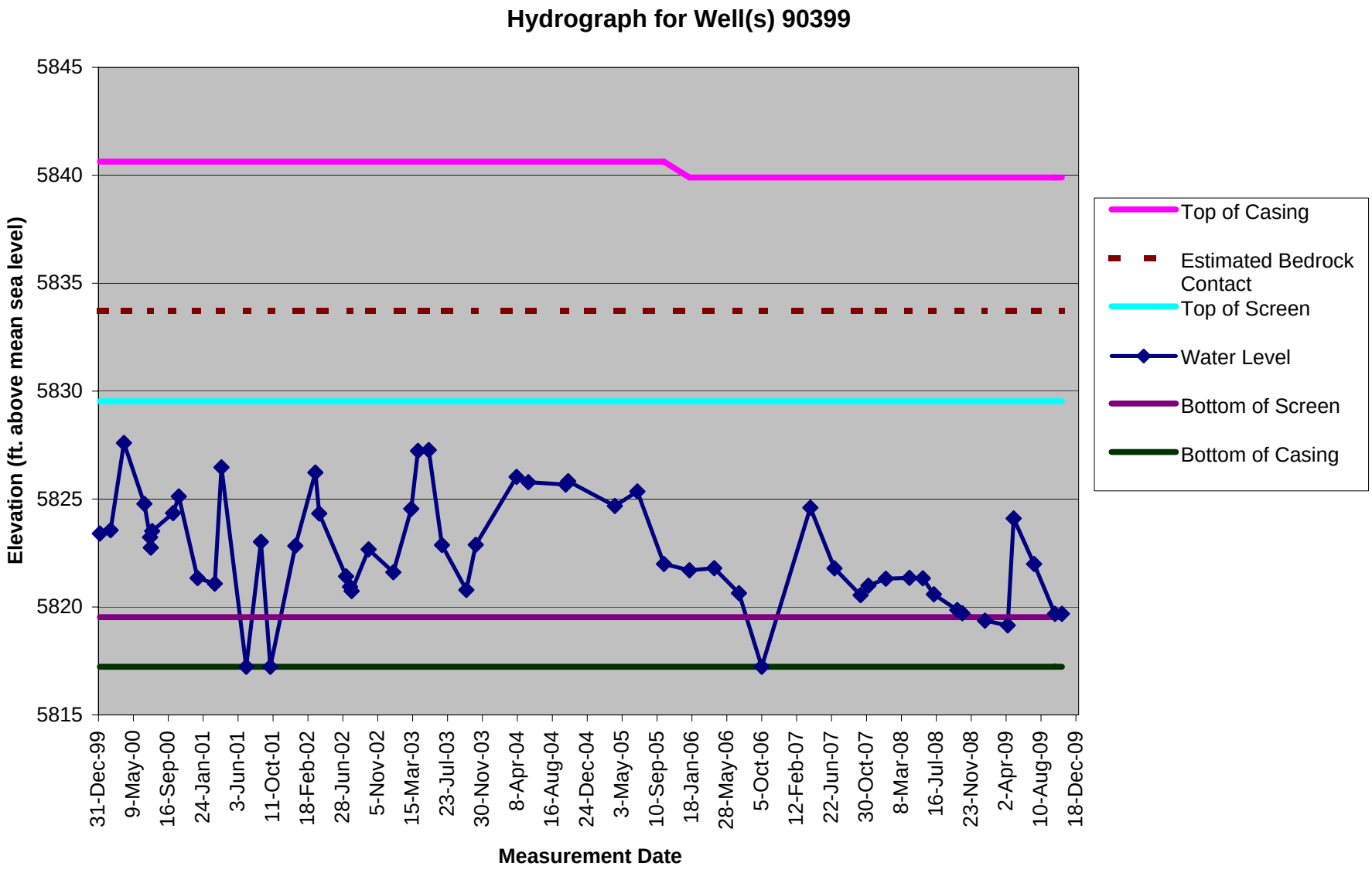

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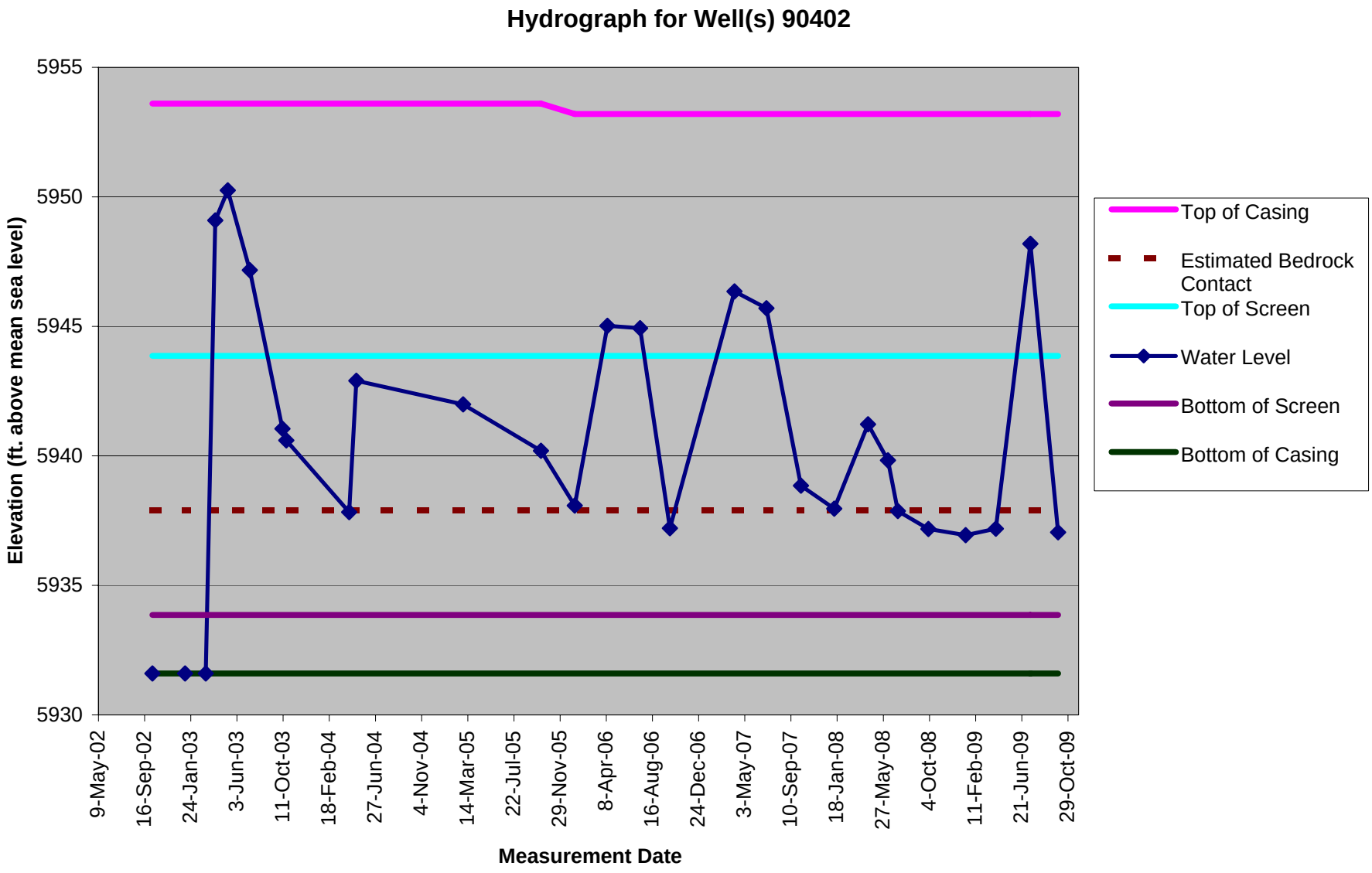

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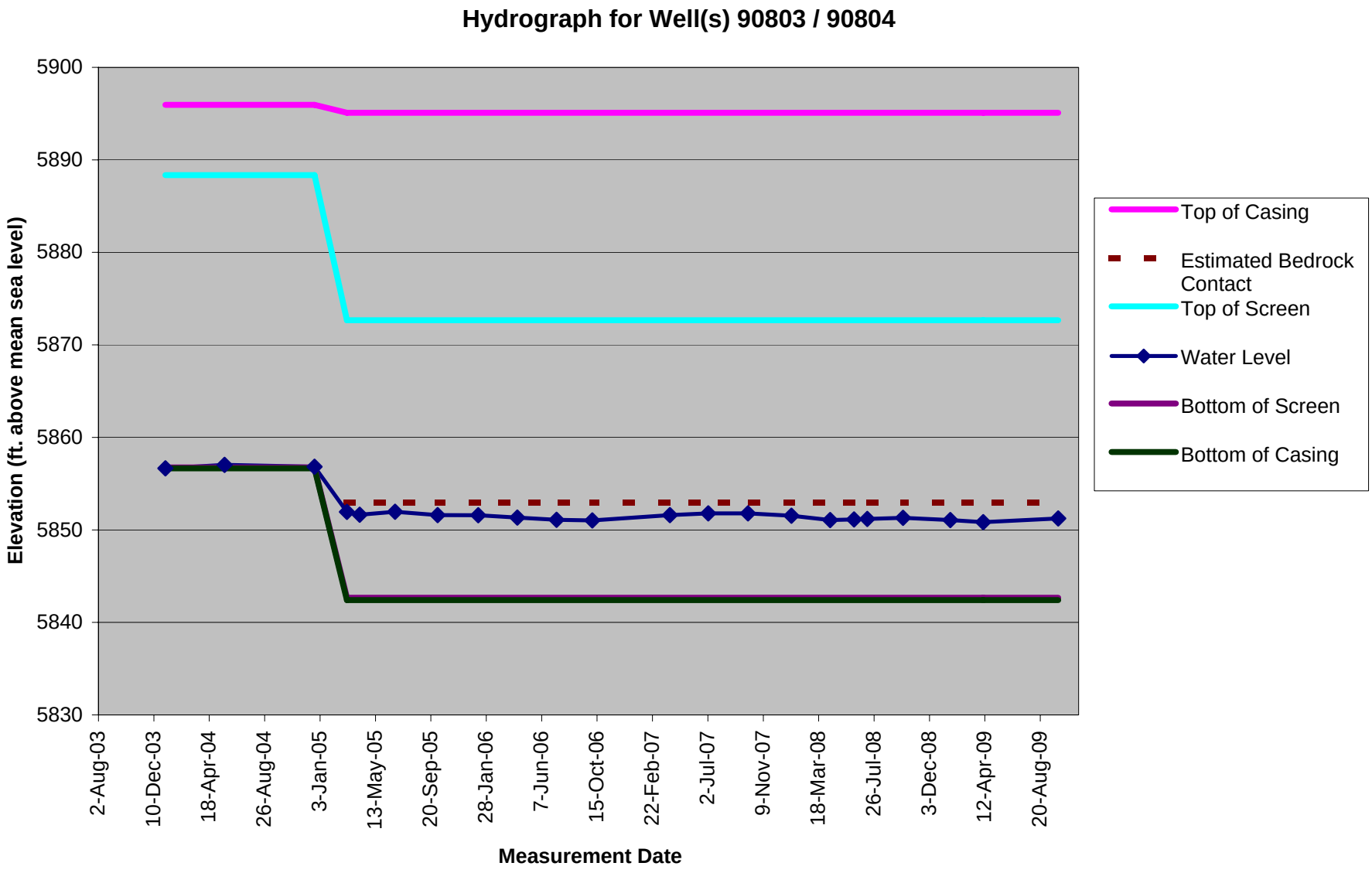

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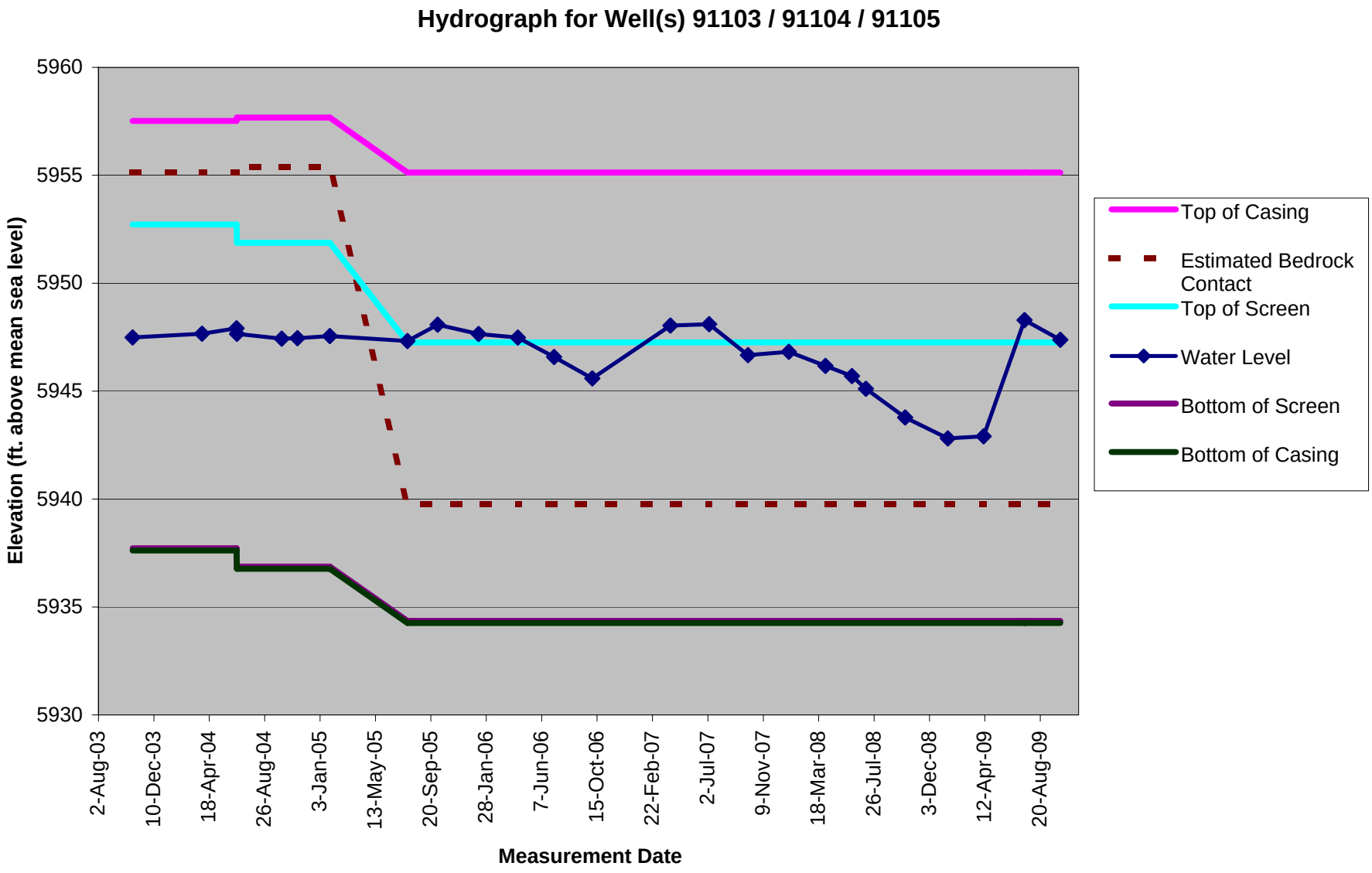

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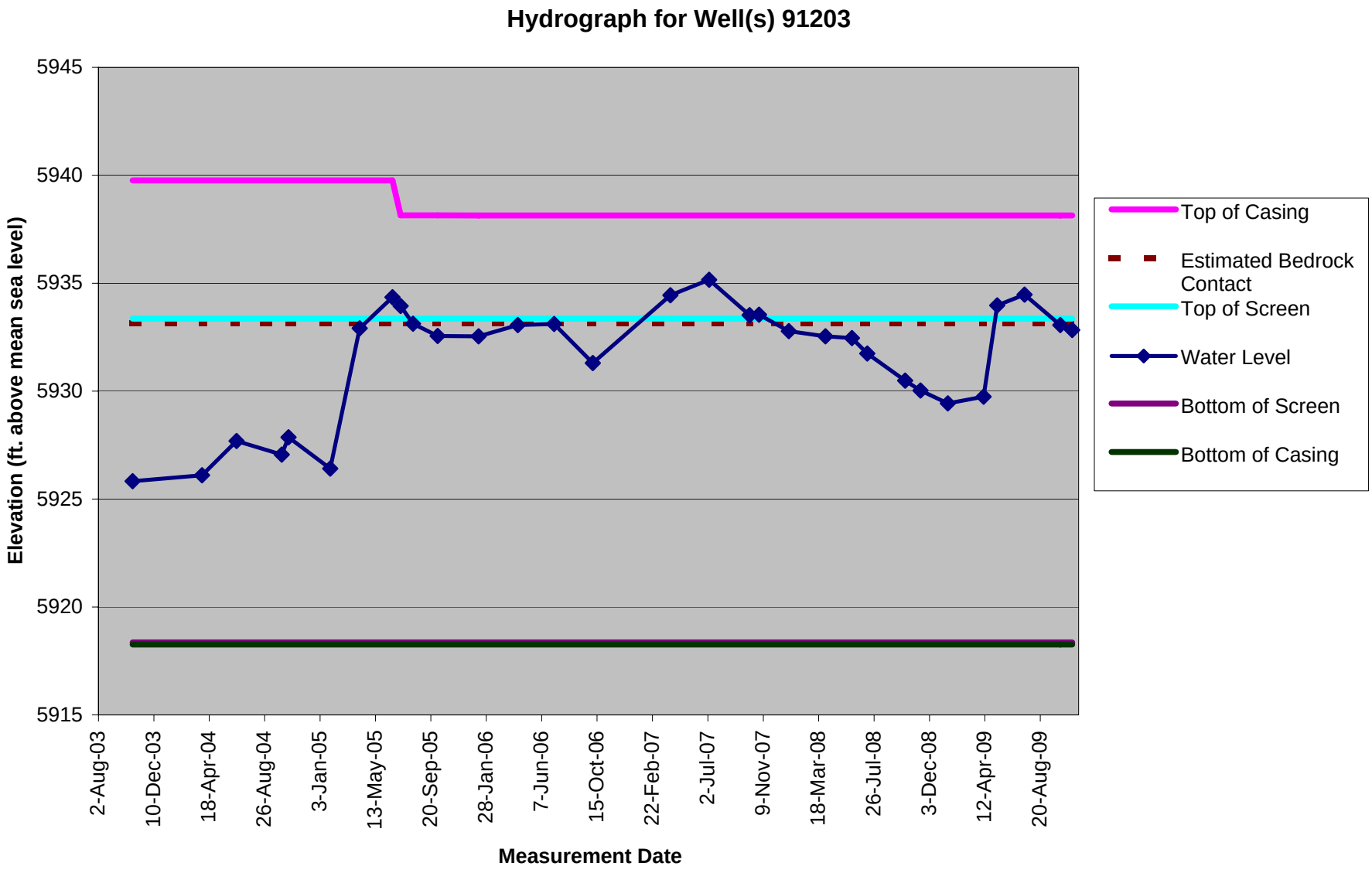

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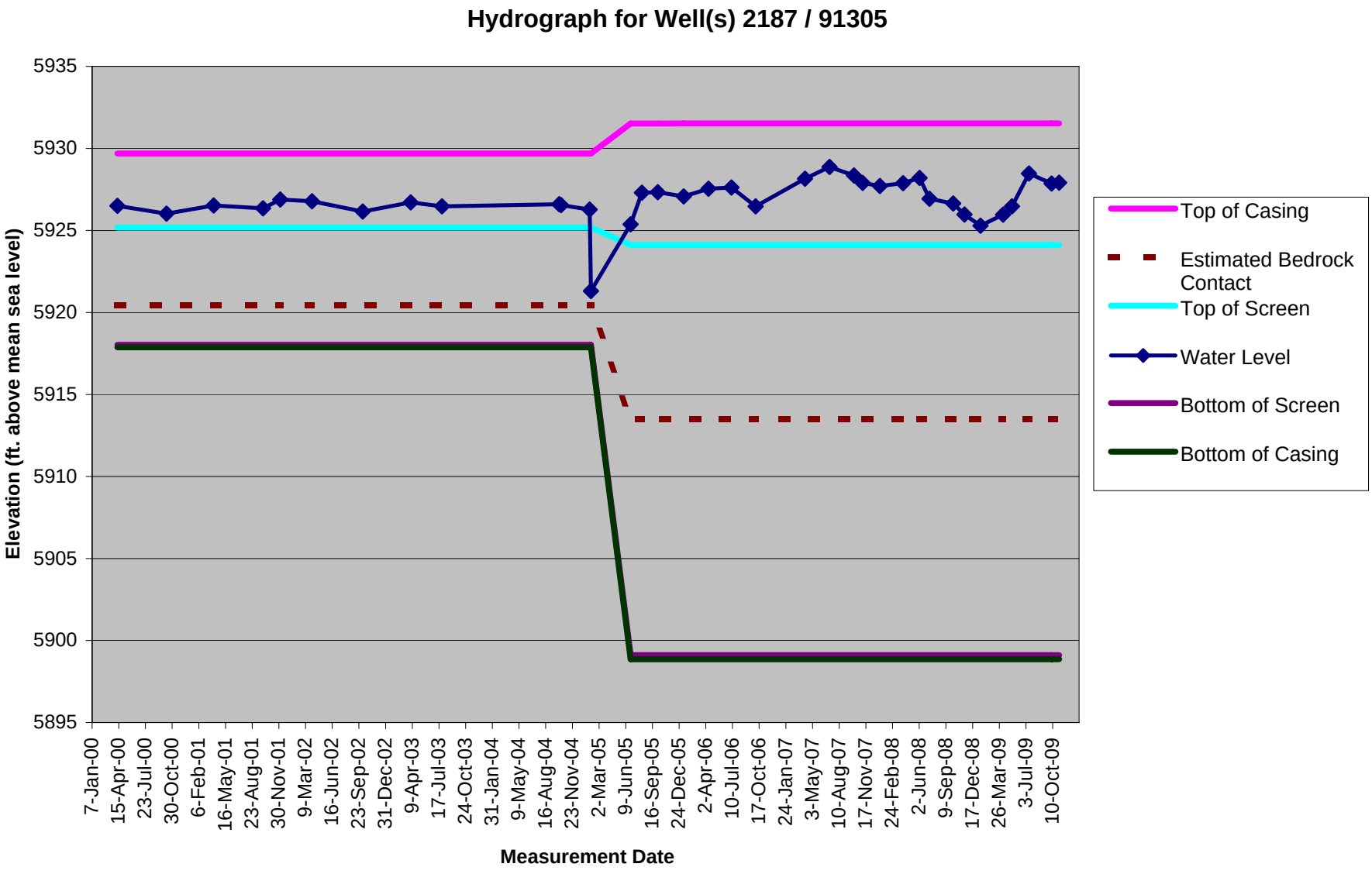

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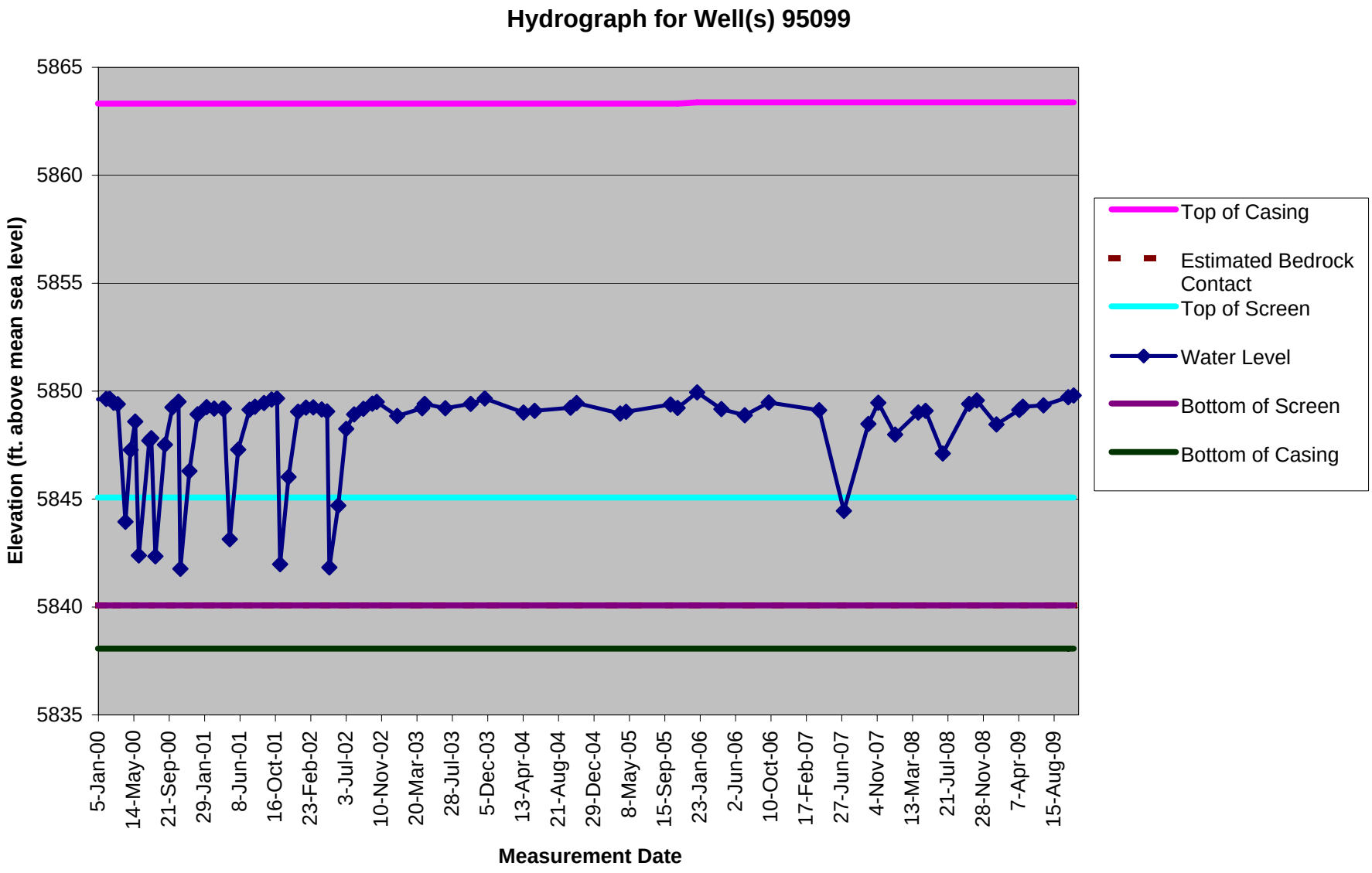

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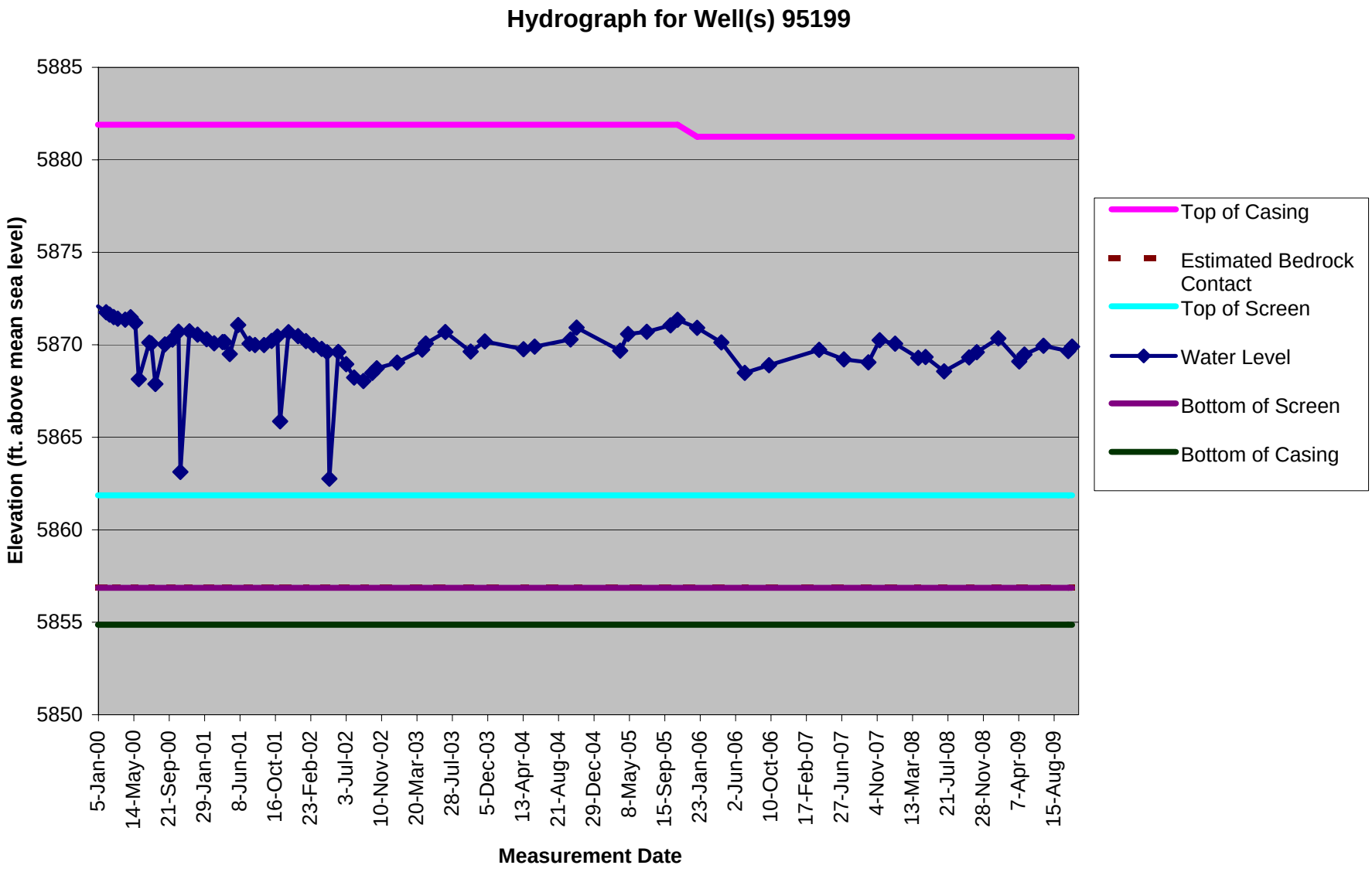

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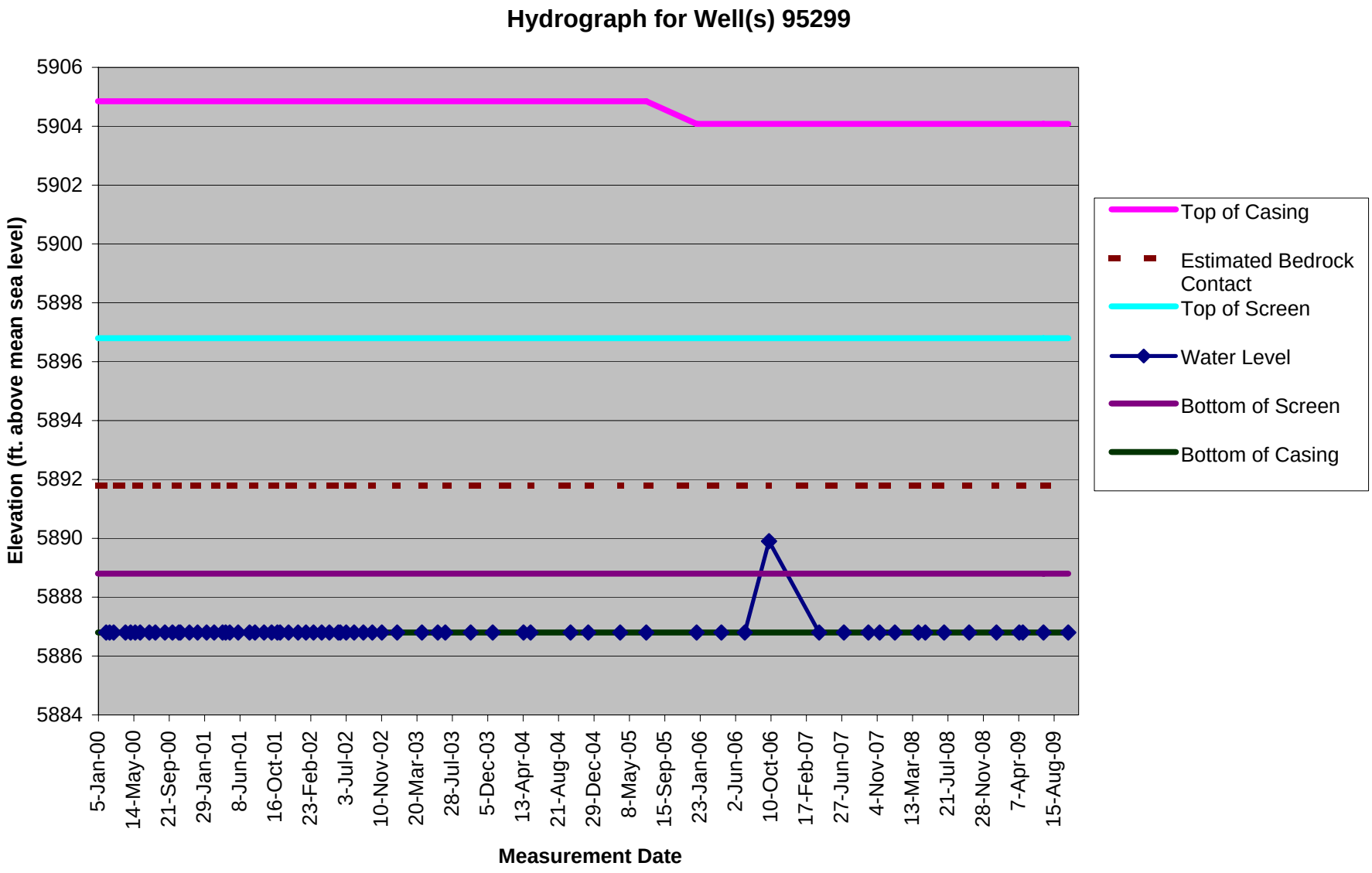

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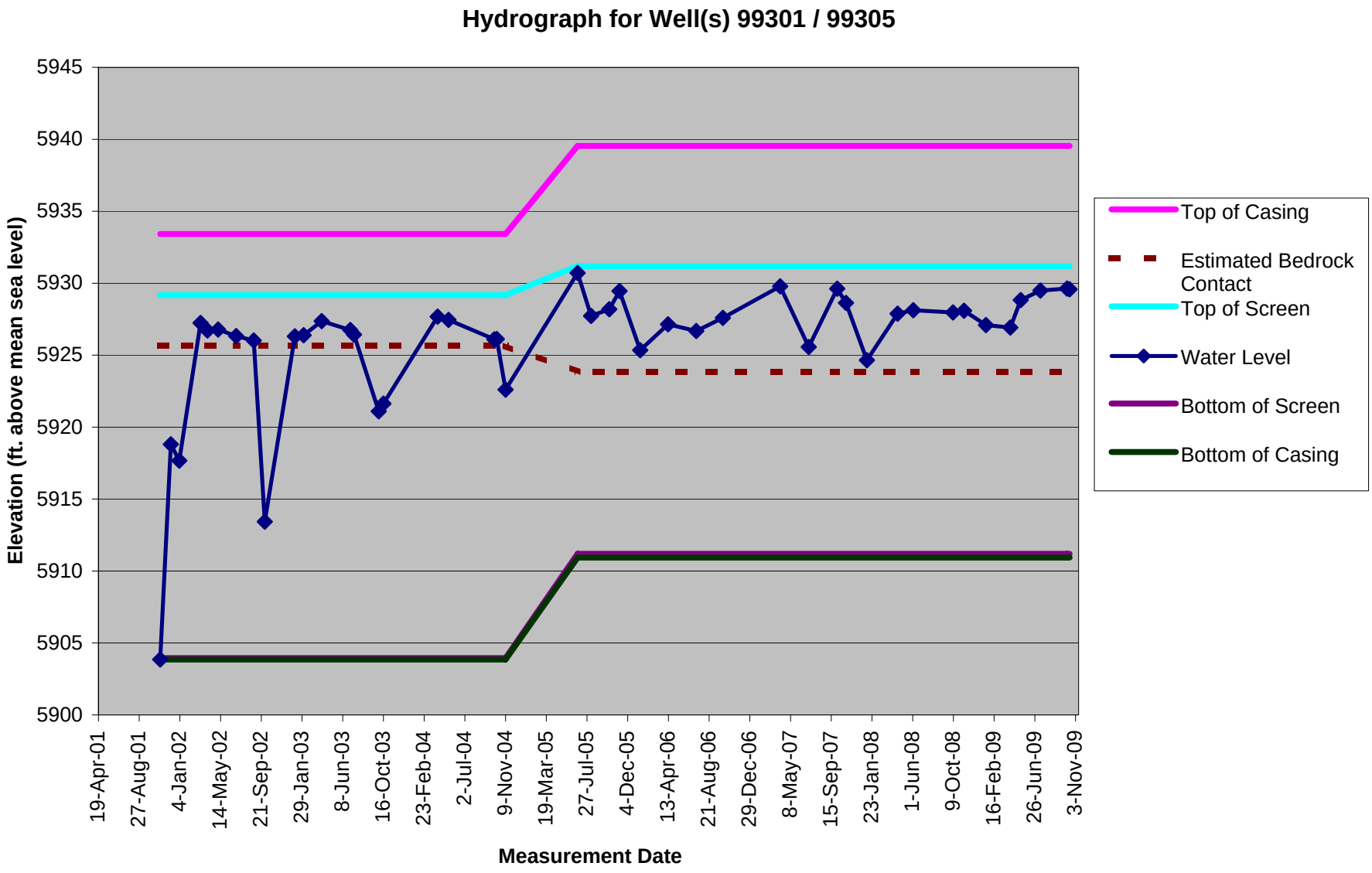

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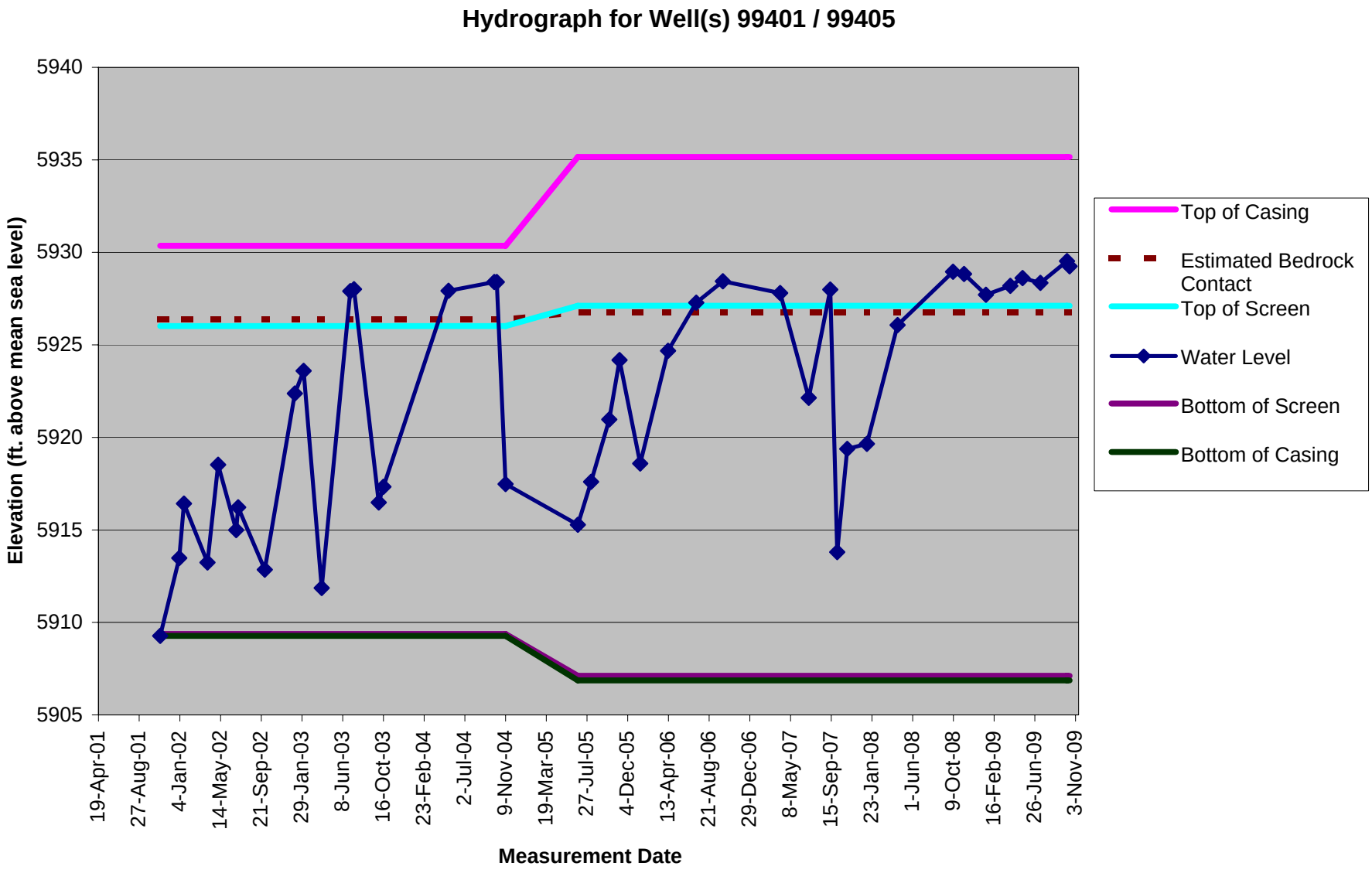

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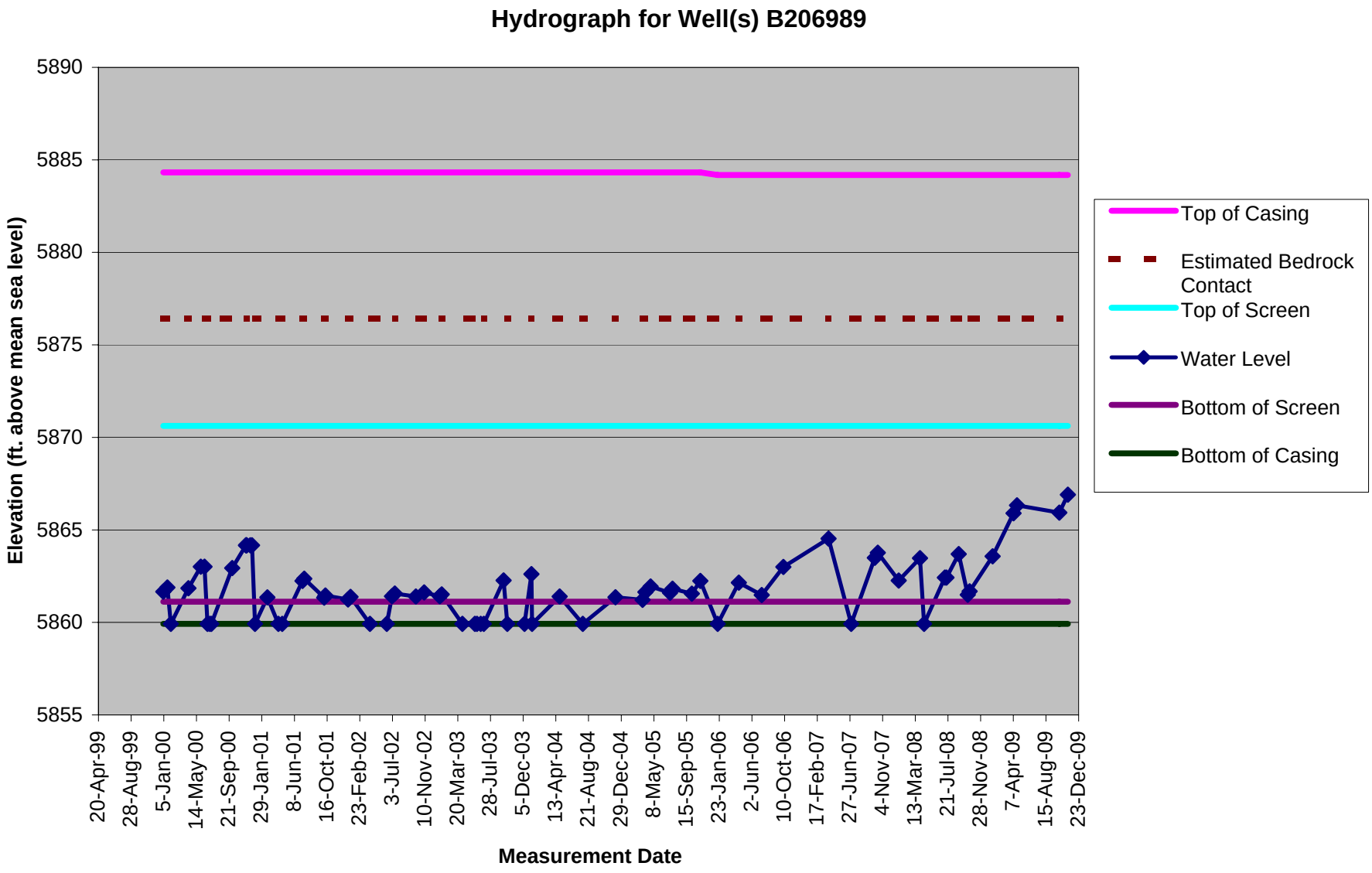

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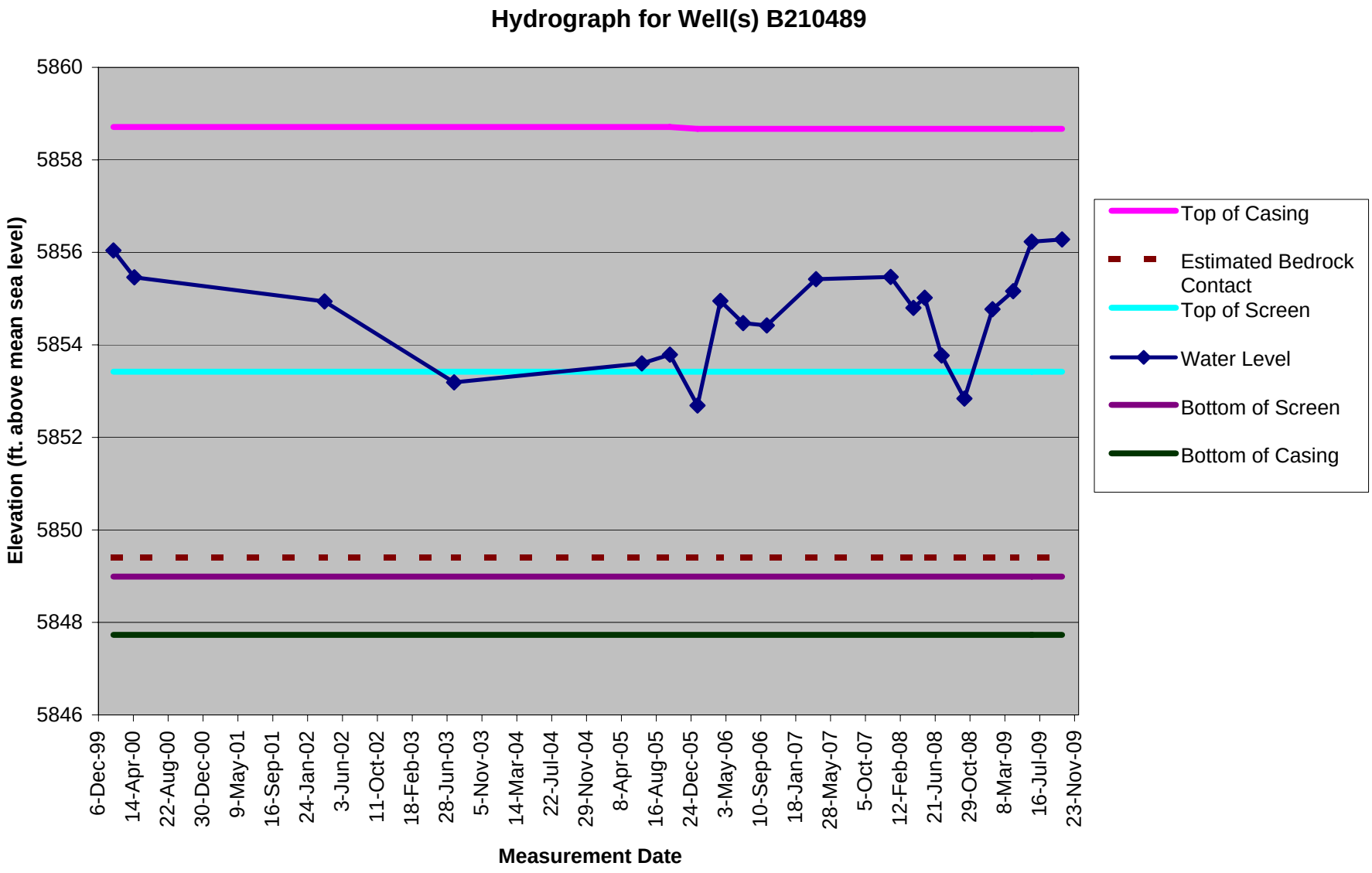

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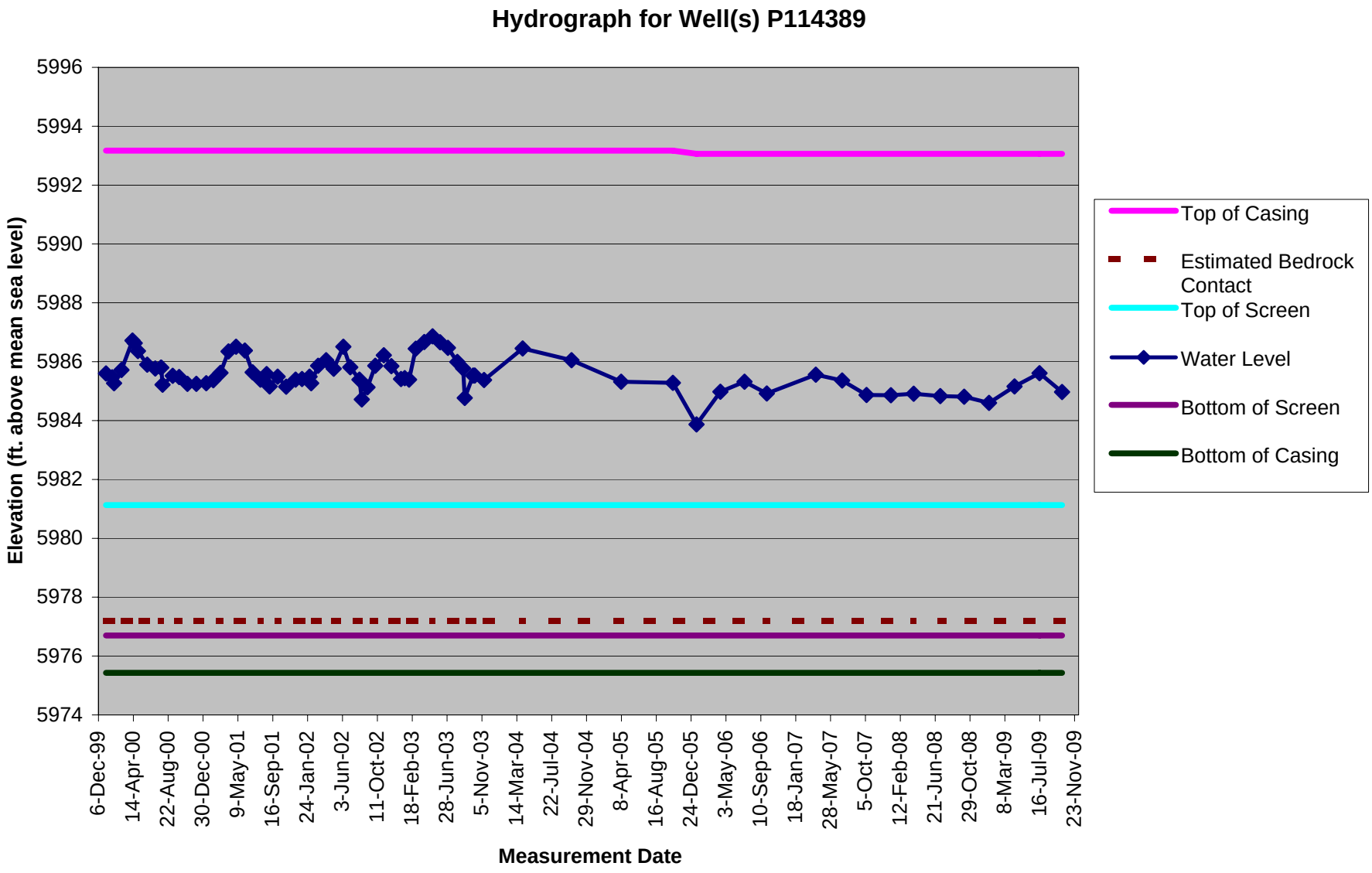

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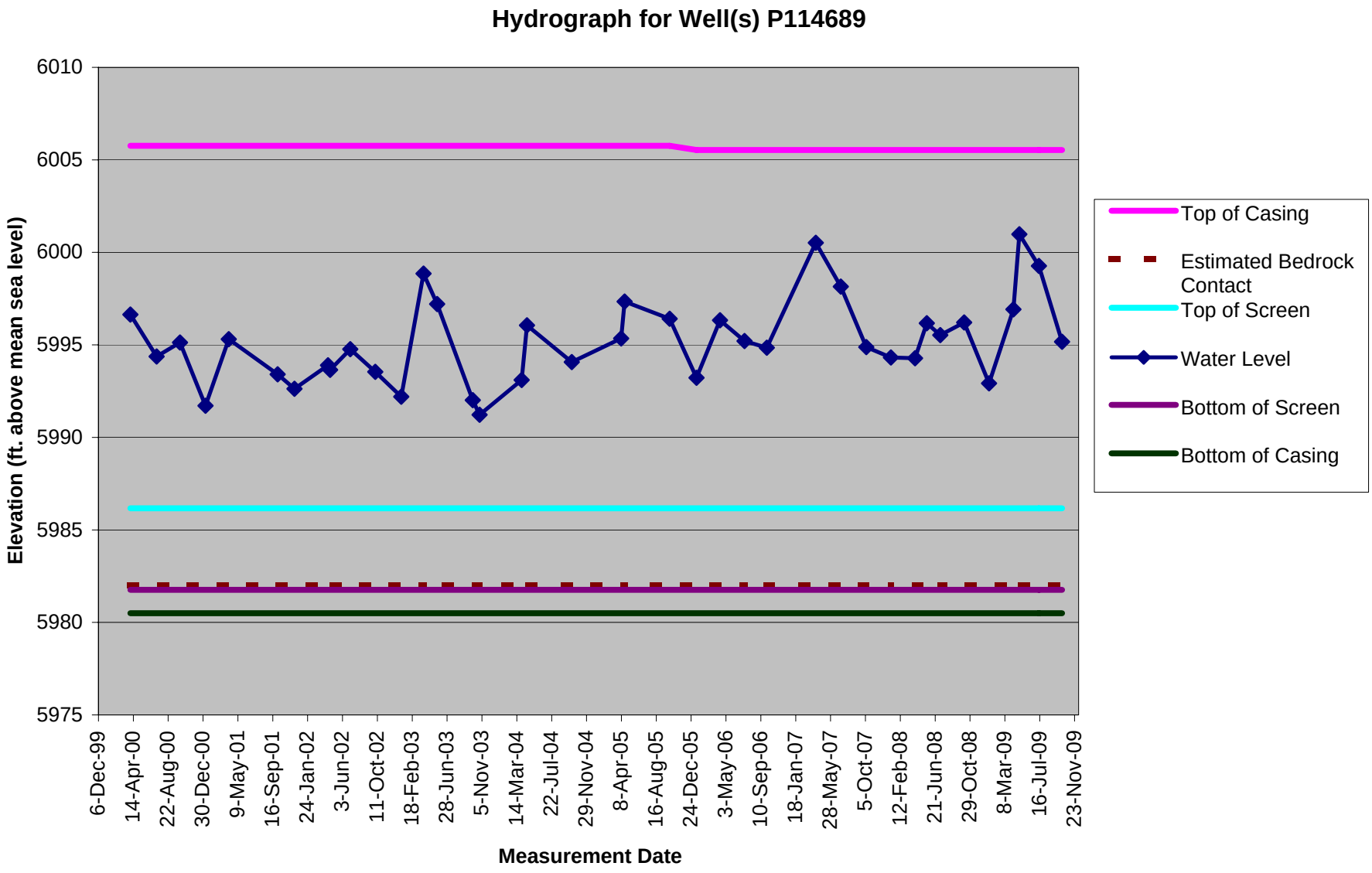

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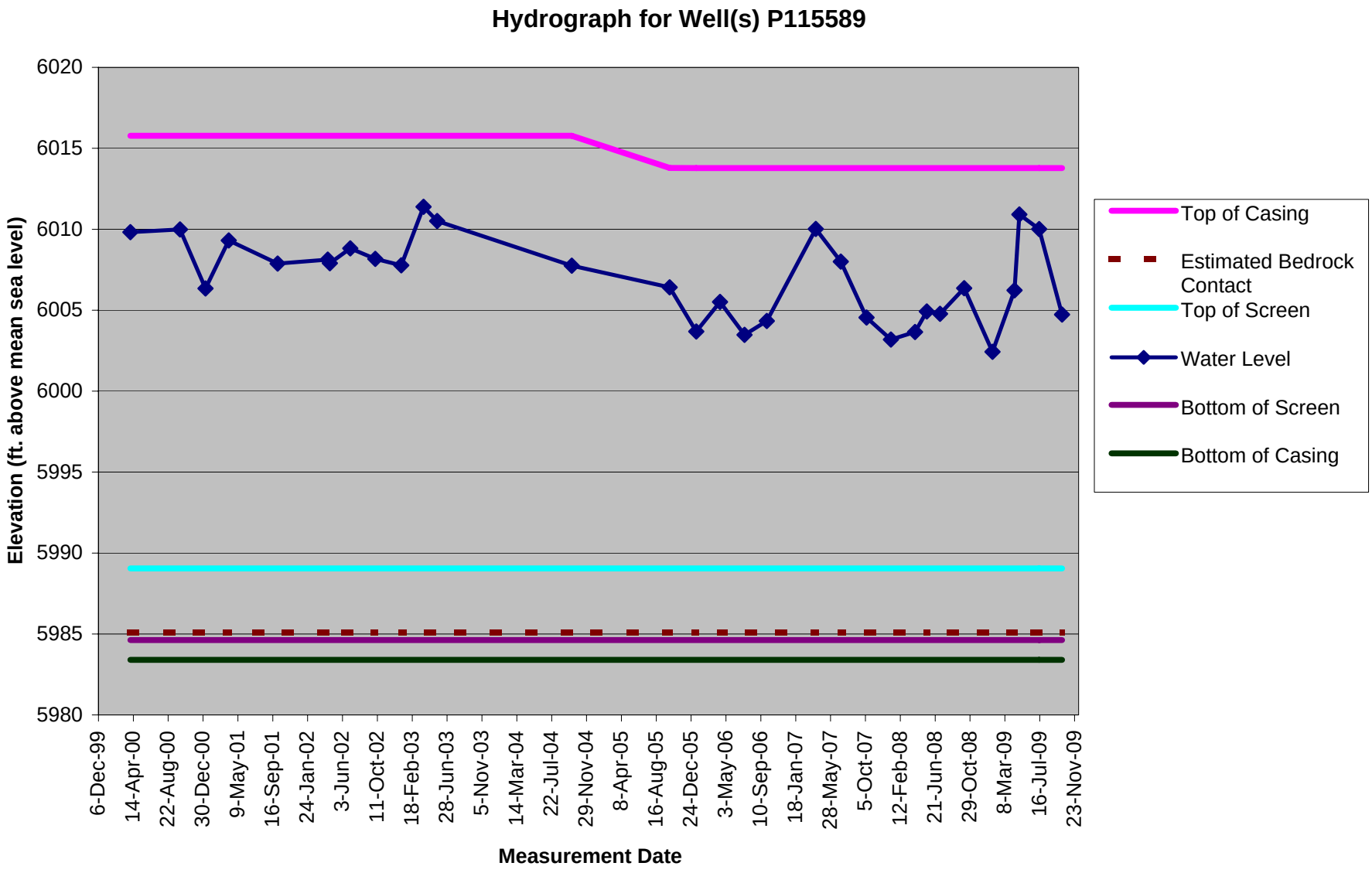

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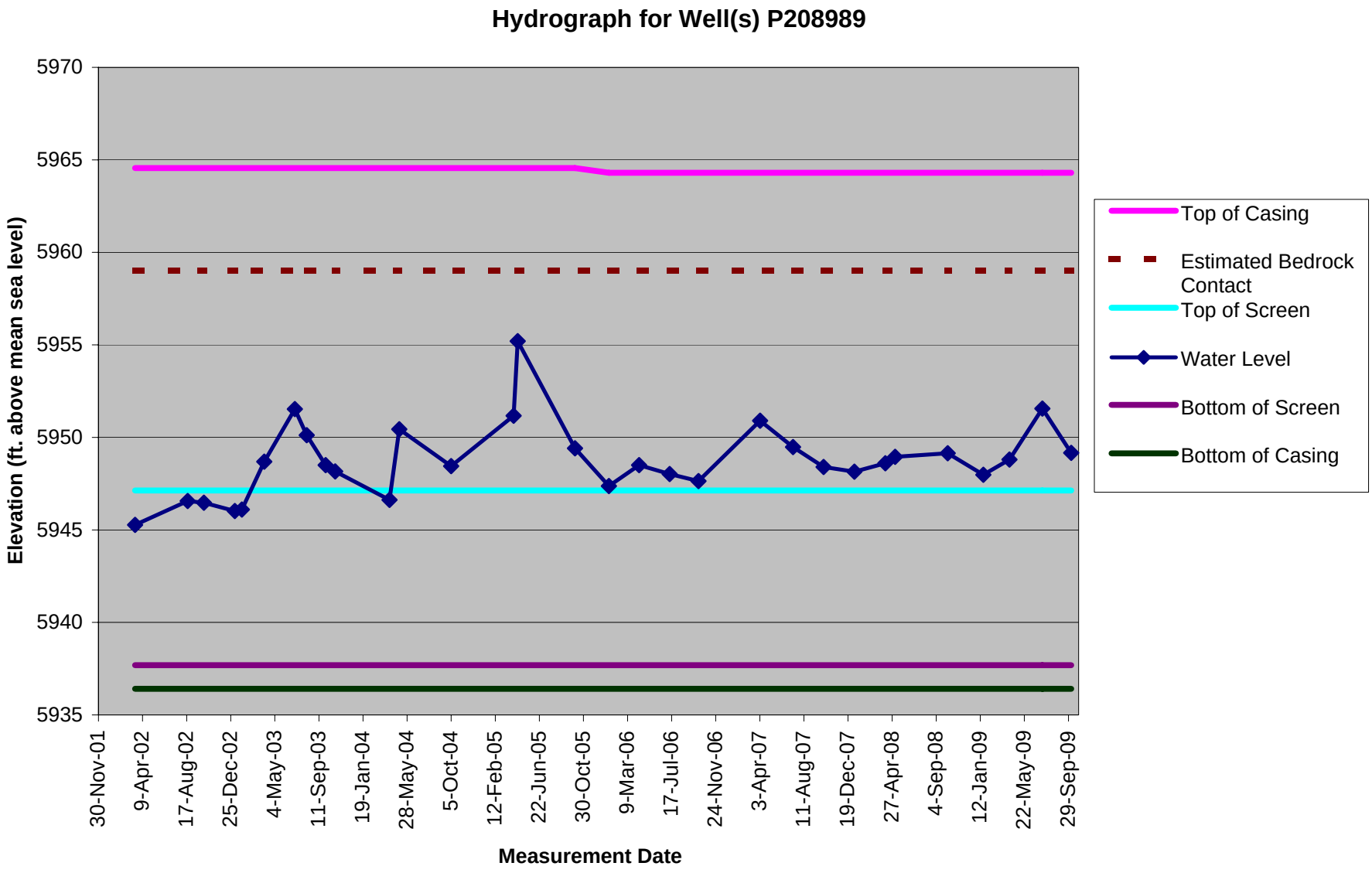

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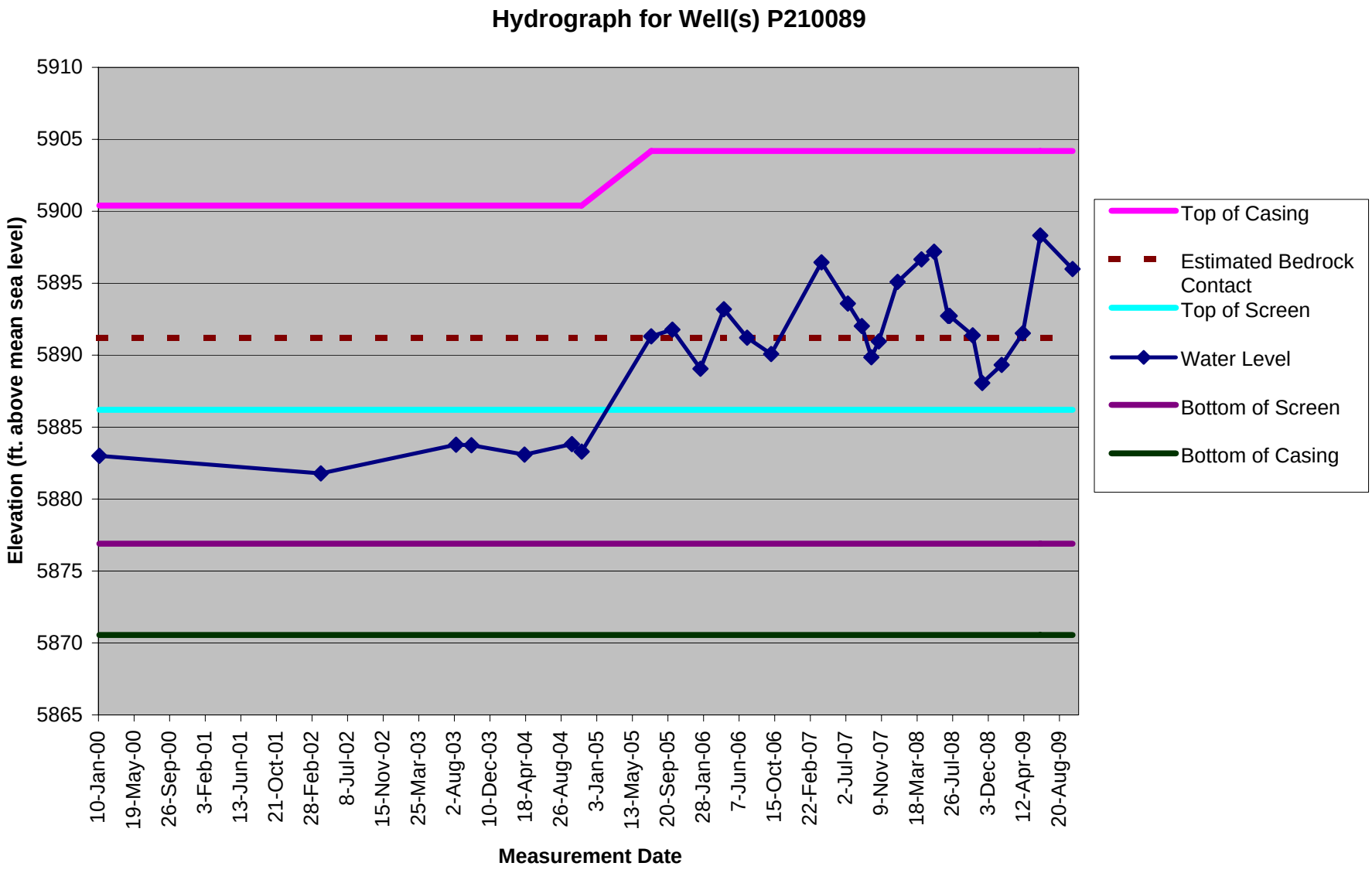

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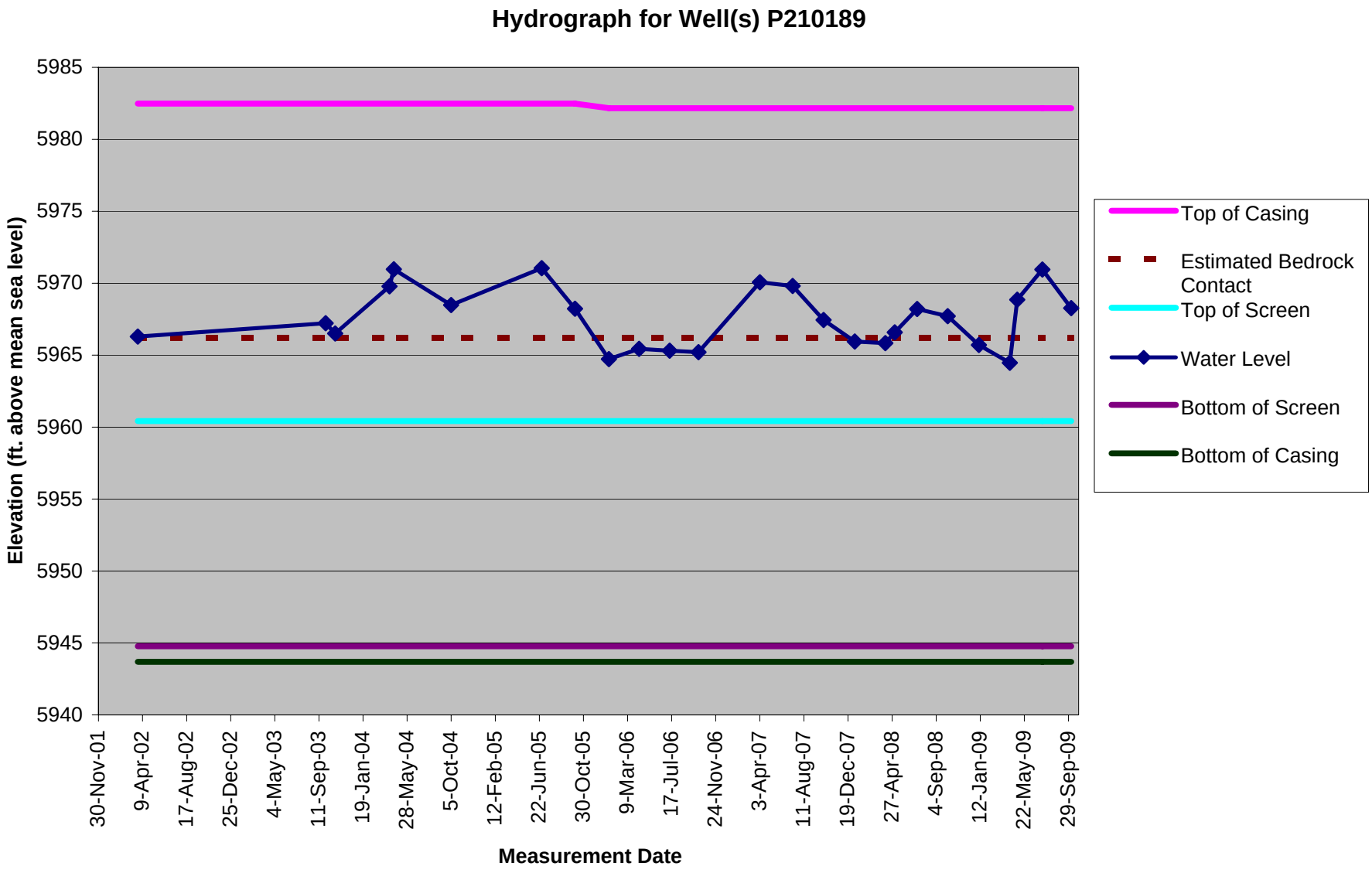

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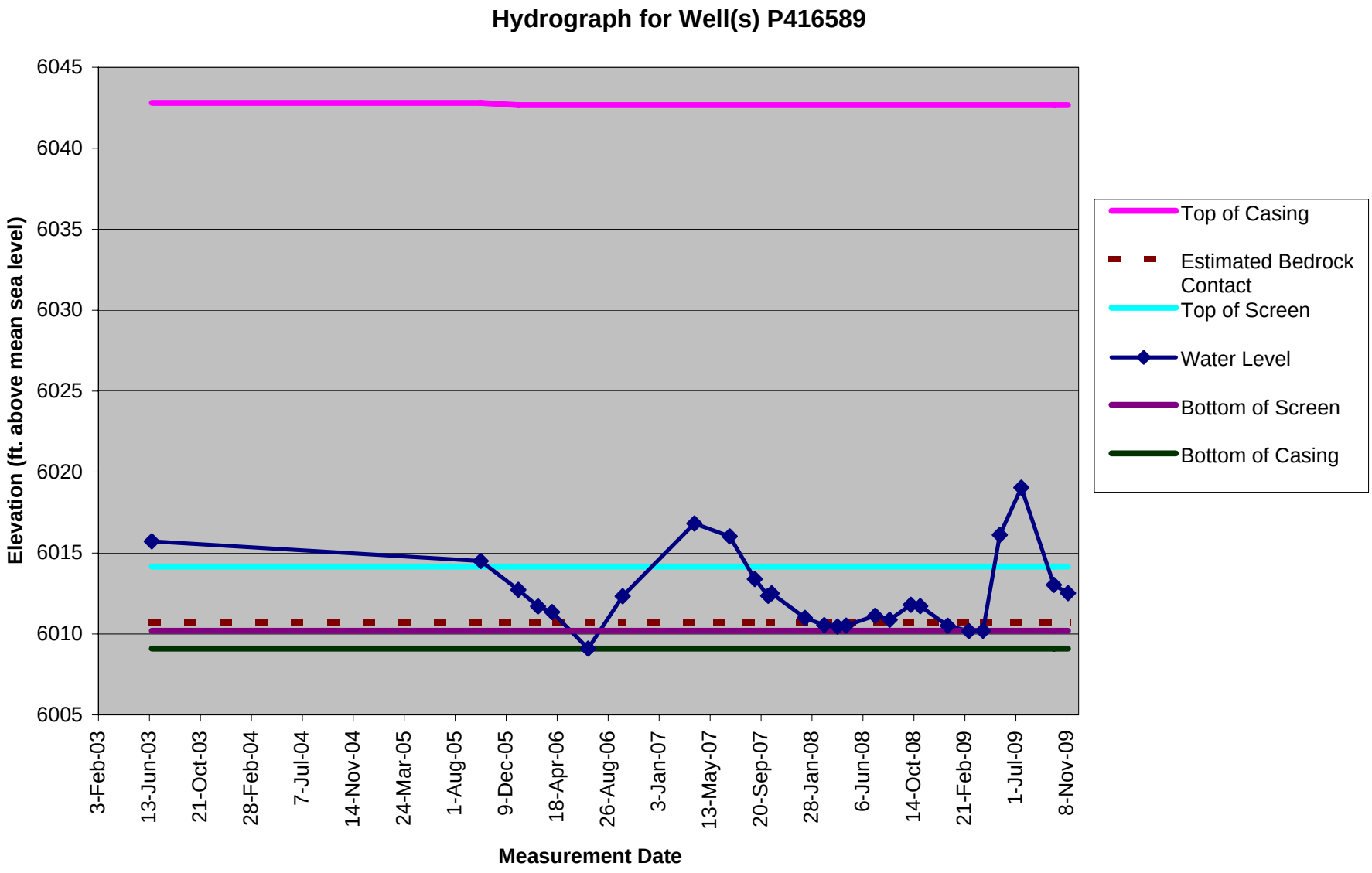

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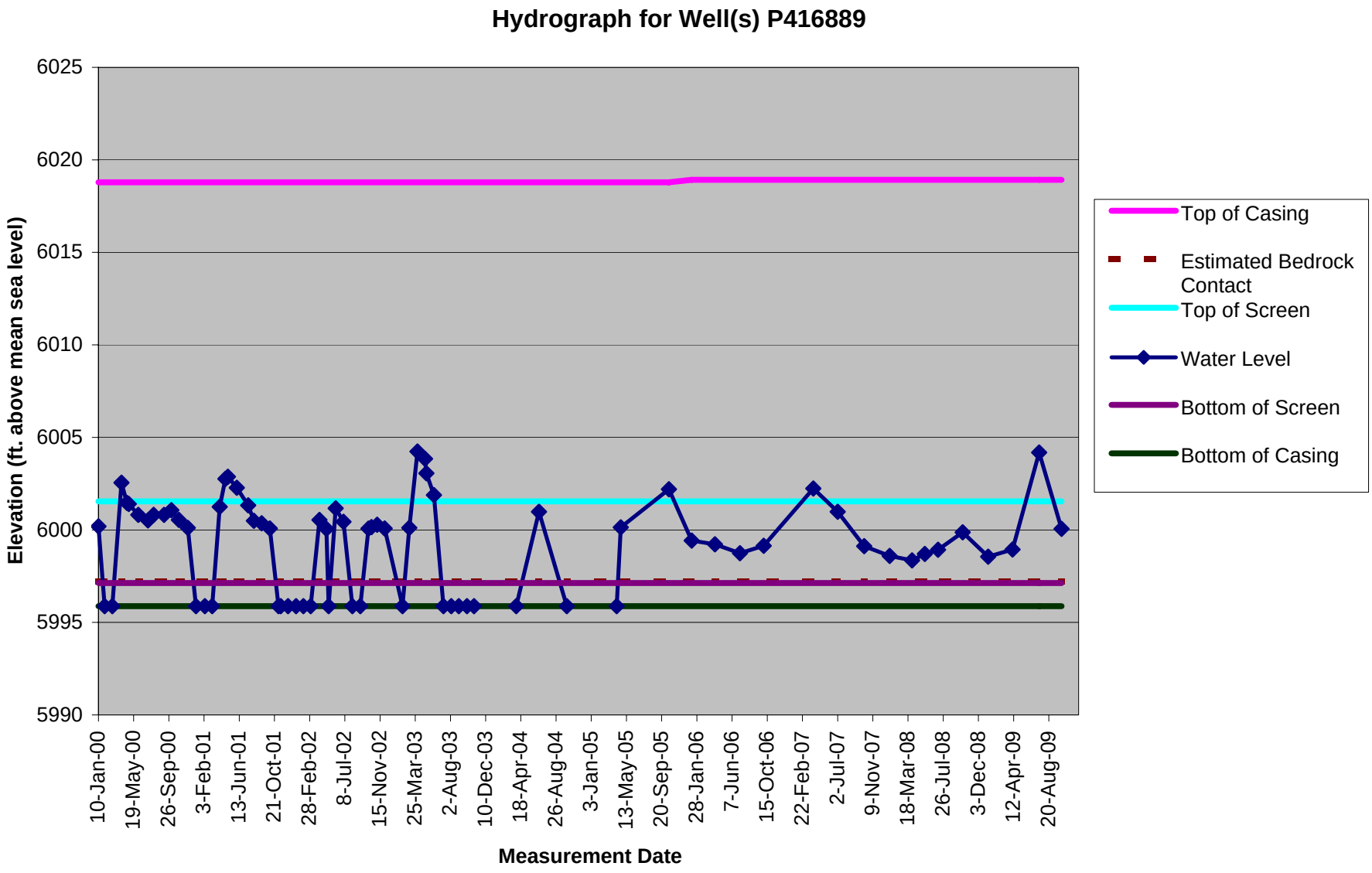

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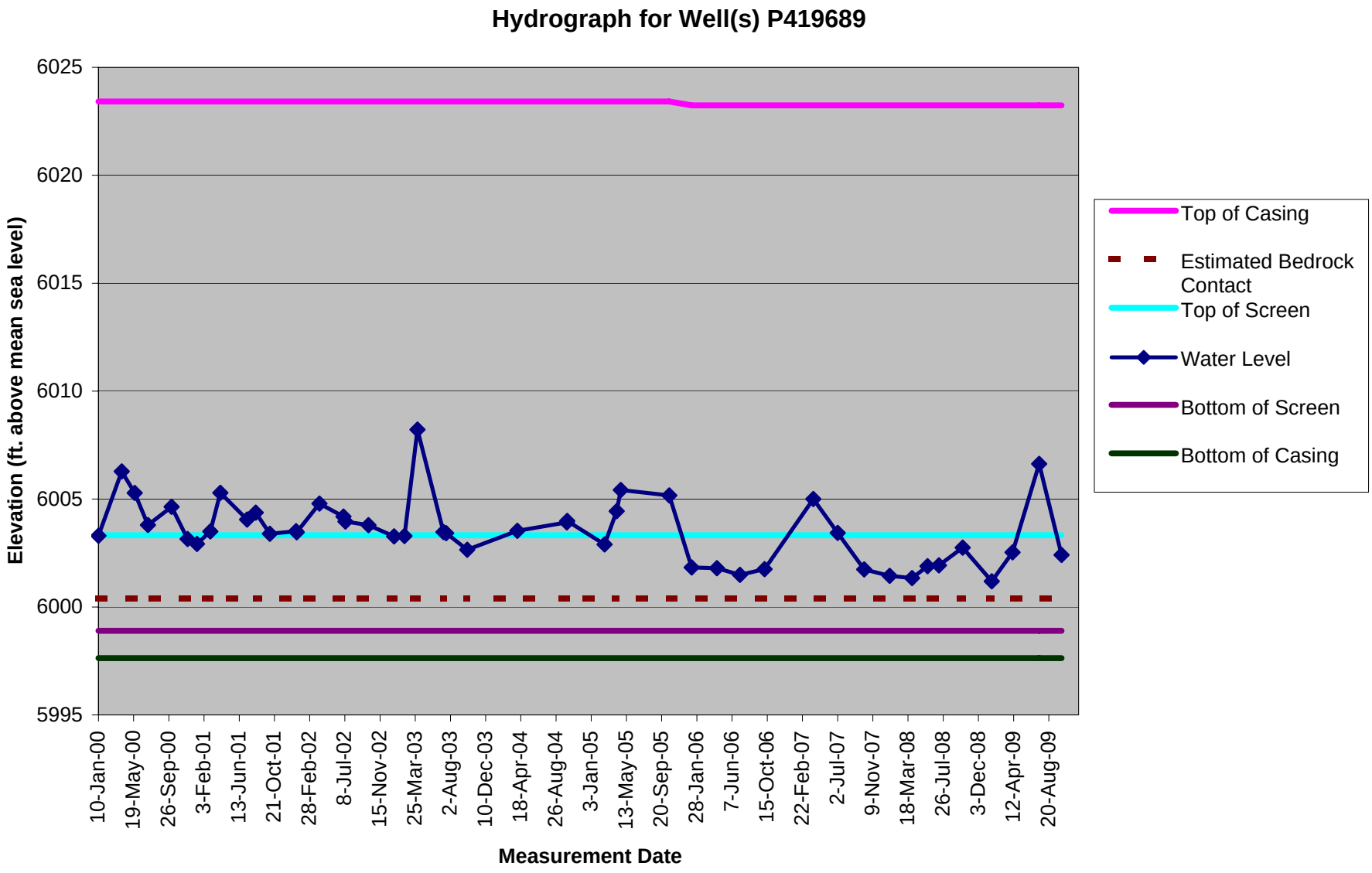

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A.4.2 Hydrographs for Automated Water Level Data

Continuous automated water level collection has taken place at the Rocky Flats Site since late 1998, with temporary and project specific automated collection conducted prior to this. Over time the program has been both expanded and scaled back to include various Site wells. As with any automated instrumentation, certain problems and errors result in inaccurate or missing data; the resulting uncertainties are discussed below. Despite uncertainties, the major benefit of the automated water level collection program is increased resolution of hydrographs, revealing short-term changes in water levels not visible using quarterly water level measurements alone. These data are collected in case updates to a groundwater flow model are desired. The automated water level collection program will be used to augment quarterly water level data until it is determined this is no longer necessary, at which point the program will be discontinued.

All wells currently included in the automated water level collection program are equipped with In-Situ Inc. miniTroll® data loggers. The miniTroll® is a downhole instrument containing a data logger, temperature sensor, pressure transducer, and battery in a self-contained watertight unit. The transducer is vented at the surface, negating the effects of barometric pressure changes. The instrument measures and records water levels at a user defined frequency, allowing for unattended long-term monitoring. It is programmed and downloaded using a PDA equipped with In-Situ Inc.'s Pocket-Situ® software. At the Rocky Flats Site, water levels are measured and recorded every four hours, and the data downloaded on a routine basis—generally twice per year.

In calendar year 2009, transducers were in place at 30 groundwater wells. The automated water level data is compiled and graphed and compared to the manual water level hydrograph for the same well. The automated water level hydrographs superimposed over the manual water level curves are included at the end of this appendix. Although a greater number of wells have historically been a part of this network, for simplicity and relevance only those wells with 2009 data are included in this discussion. Nine transducers malfunctioned over the course of 2009, requiring removal from the well. Four of these wells, 23296, 33905, 37705, and 73105, are not included with the superimposed hydrographs since the transducers malfunctioned before any 2009 data could be downloaded. Additionally, transducers were removed from nineteen wells for a portion of 2009 due to installation of dedicated pumps within those wells. These transducers were re-deployed in early 2010. As of March 2010, transducers are in place at 21 Site wells.

Uncertainties in the automated water level data have arisen, and can be separated into three general classes: Reference Elevation Uncertainty, Unexplained Uncertainty, and Explained Data Gaps. See Table A−26 for a listing of uncertainty types present in each hydrograph.

Reference Elevation Uncertainty ("Ref." on hydrographs) occurs when the user-defined reference elevation was entered incorrectly. When initiating data collection using a miniTroll®, the water level elevation in the subject well is measured manually and entered into the miniTroll® program as the starting water level for that "test." Any changes in water level for the remainder of the test are measured against this reference elevation. Therefore if the reference elevation is entered incorrectly, the subsequent dataset is inaccurate in its entirety. Such systematic uncertainties are usually easy to identify and correct, and all correctable Ref. uncertainties have been fixed. On the automated water level hydrograph for well 52505, for example, the reference elevation for the period of January 7, 2008, to July 9, 2008, was off by just over 2 feet. The resulting curve differed from the manual water level curve by the same amount. This discrepancy was noted in the field logbook, allowing the data to be corrected. After

correction, the automated water level curve closely matched the manual water level curve for that time period.

Unexplained Uncertainty ("Unexplained" on hydrographs) occurs when there are data gaps not explained by the field logbook, or when the automated water level curve differs from the manually collected water level data points. These uncertainties are not correctable and the most likely explanation is instrument malfunction or drift over time, resulting in inaccurate readings. (Alternatively, the errors could reside in the manually-collected data, but because typically more than one manual water level measurement is made over the course of an automated test, it would be easy to spot and correct the manual data for those errors.) An example of this type of uncertainty can be seen on the hydrograph for well 20205. On February 5, 2008, a new test was begun and a new reference elevation entered. Shortly after the test beginning, the automatically measured water level began rising sharply, recording water levels that were significantly higher than those manually measured during the test period. By the time the next test was begun and a new reference elevation entered on July 9, 2008, the automated water level data indicated a water level 10 feet higher than that manually observed. The most likely explanation for this uncertainty is instrument malfunction, and no attempt was made to rectify the unreliable data. Clear instances of instrument malfunction can also be seen on the hydrographs for wells 20902 and 99405, which both show automated water level measurements of up to 50 feet above the top of casing or below the bottom of the well. These data points have not been removed, but obviously should not be interpreted as actually representing water levels within those wells.

Explained Data Gaps ("Explained Gap" on hydrographs) are gaps in the data record which are explained by the field logbook. The most common explanation for data gaps are instrument batteries dying, problems downloading data, and the instrument being removed from the well. For example, the transducer in well 70099 was removed on June 29, 2005, and replaced on October 31 of that same year.

Gaps in the data record (both explained and unexplained) and sudden drastic changes in water level caused by reference elevation changes are marked as areas of Systematic Uncertainty on the hydrographs. These portions of the curves (marked by a dashed red line) do not contain data recorded by a transducer. Rather, they represent an interpolated curve between two existing data points, and are included to enhance hydrograph readability. Areas of Systematic Uncertainty should not be read as being representative of actual water levels.

Despite the aforementioned problems in the Troll network, automated water level collection provides enhanced hydrograph resolution, revealing short term water level fluctuations not apparent with manual data collection alone. The most common cause of these short-term fluctuations is sampling events, but large precipitation events also play a role.

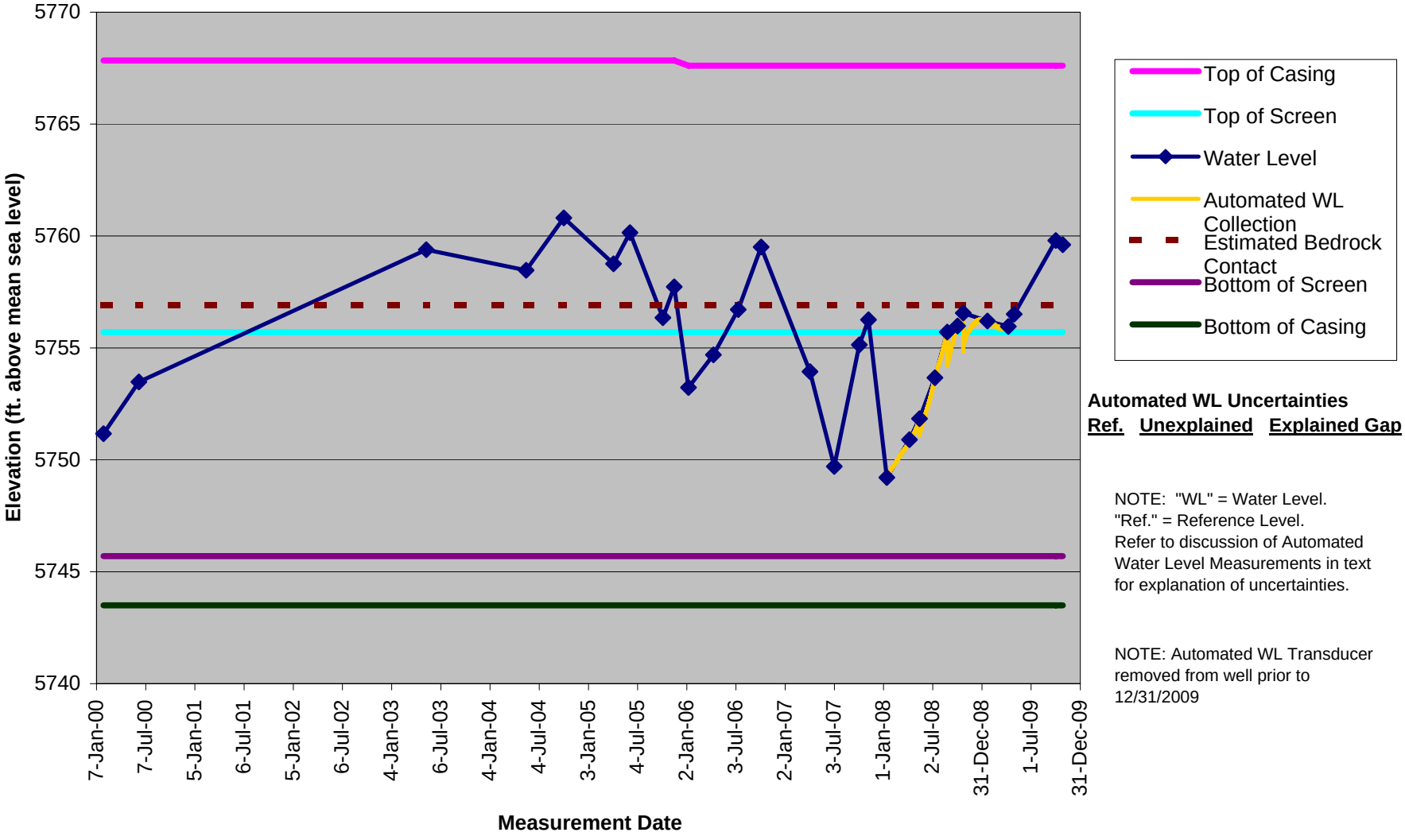
The clearest example of short-term variation caused by sampling events is seen in the hydrograph for well 80205. The automated water level hydrograph shows repeated sudden drops in water level, followed by more gradual rises. The sudden drops in water level correspond to sampling events, while the gradual rise in water level shows well recharge—the longer-term response of the well to the sampling event. These short-term variations could not be observed by examining the manually collected water level hydrograph alone, which shows a far more stable water level than the automatically collected data. It is more difficult to discern the influence of large precipitation events on the automated water level hydrographs, but some relationships can be observed. The clearest instance of this can be seen on the hydrograph for well 70393. This automated water level hydrograph shows a 7-foot increase in water level from April 18 to

April 21, 2009, corresponding to a large, wet spring snowstorm which began April 16. Water levels remained elevated through the month of May, and began falling through June. The magnitude of this water level spike was not evident in the manually collected water level hydrograph alone, since manual water level measurements were only taken on the ascending and descending limbs of this spike. This is evidenced that the automated water level program can provide increased resolution to hydrographs.

Table A–26. Automated Water Level Collection Uncertainties by Well

Well	Uncertainties		
	Ref.	Unexplained	Explained Gap
00193	None		
00797	X		
15699	None		
20205	X	X	
20902		X	X
22996			X
33703	None		
42505		X	X
52505	X		
70099	X	X	X
70393	X	X	X
70705	None		
79102			X
79302	X		
79605	None		
80205		X	
88104	None		
91203	X	X	X
91305			X
99305	None		
99405		X	
B206989		X	X
B210489	None		
P115589	None		
P208989	None		
P210089	None		

Automated and Manual Water Level Measurements from Well(s) 00193



Automated WL Uncertainties

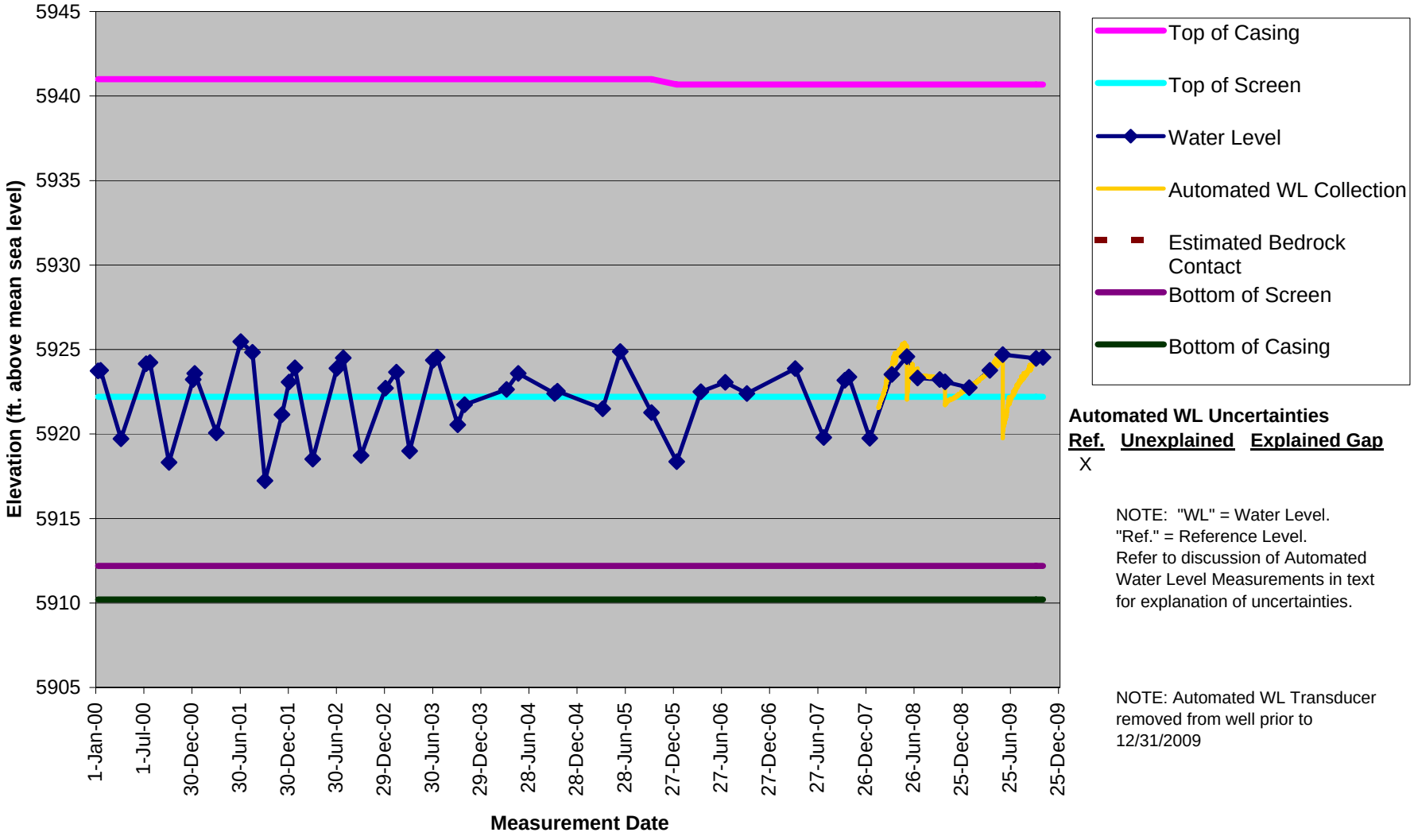
Ref.	Unexplained	Explained Gap

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer removed from well prior to 12/31/2009

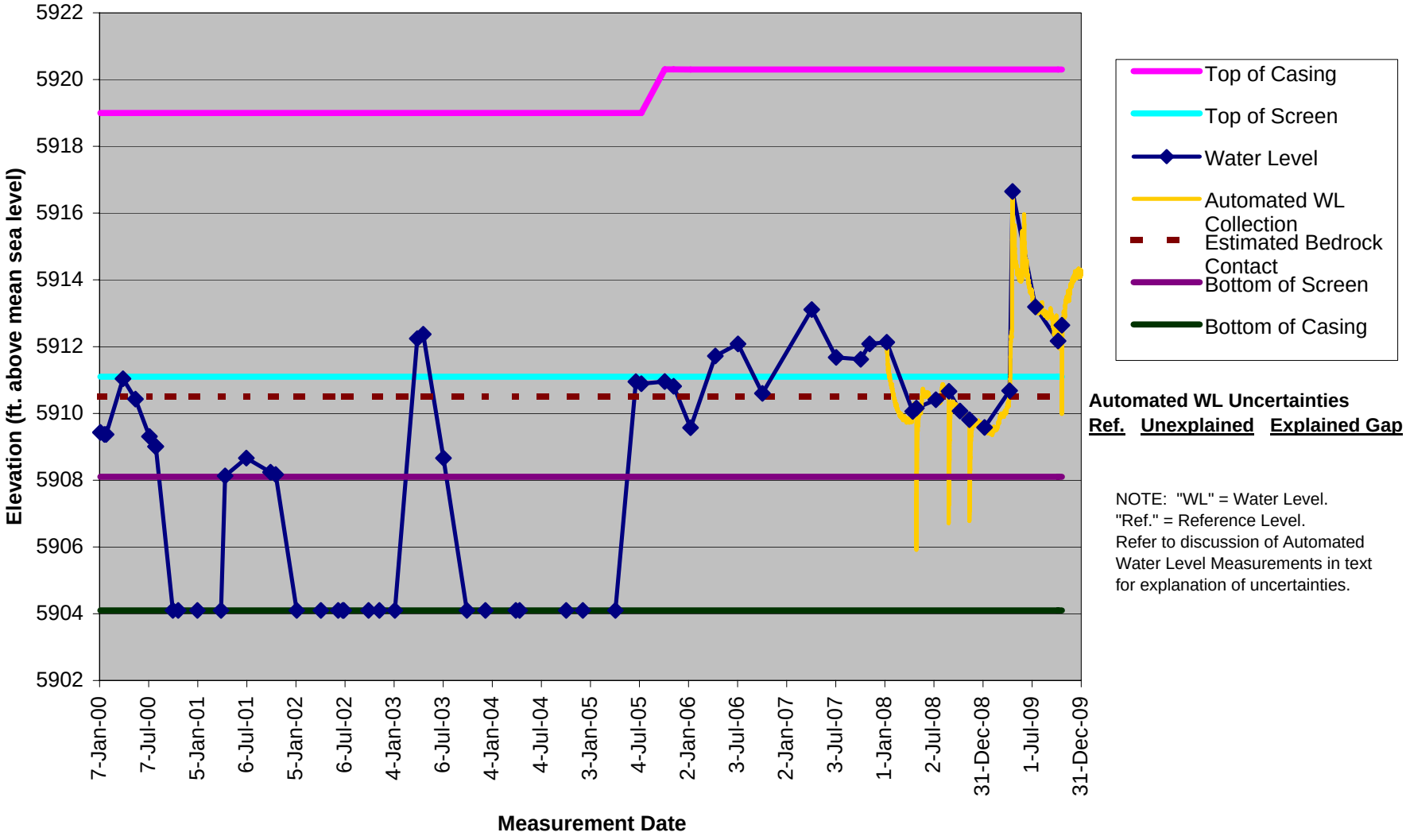
From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 00797



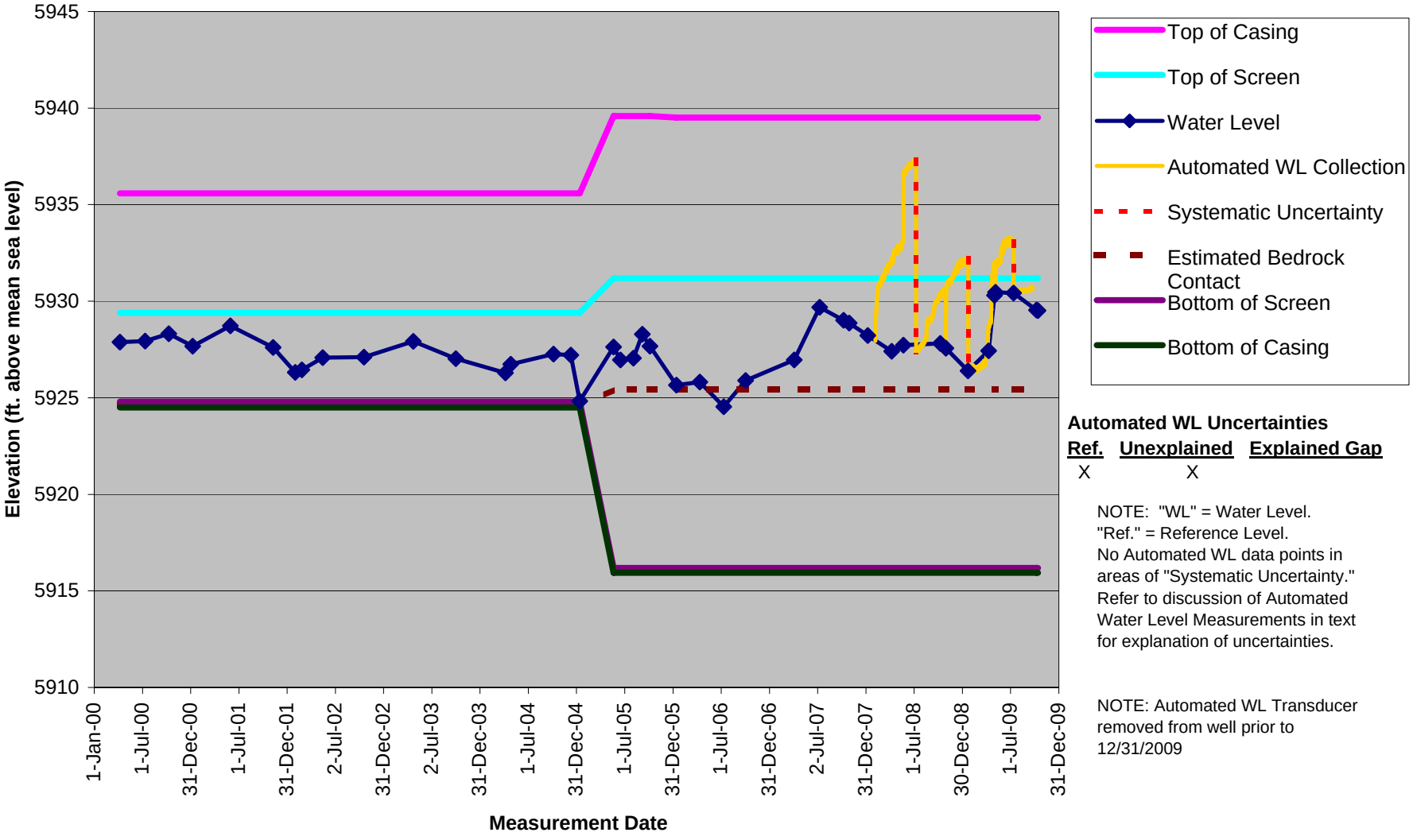
From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 15699



From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 20298 / 20205



Automated WL Uncertainties

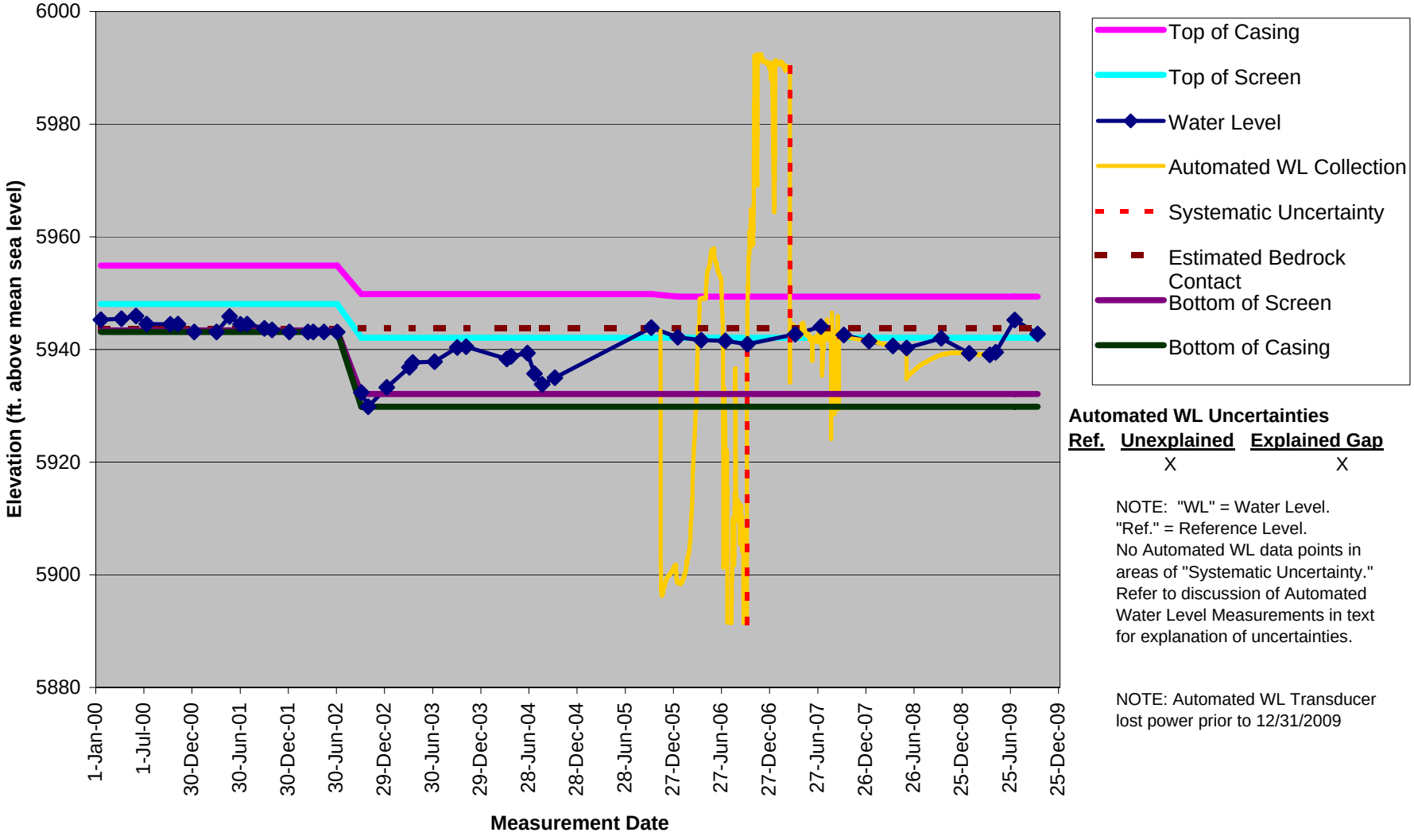
Ref.	Unexplained	Explained Gap
X	X	

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
No Automated WL data points in areas of "Systematic Uncertainty."
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer removed from well prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 20998 / 20902



Automated WL Uncertainties

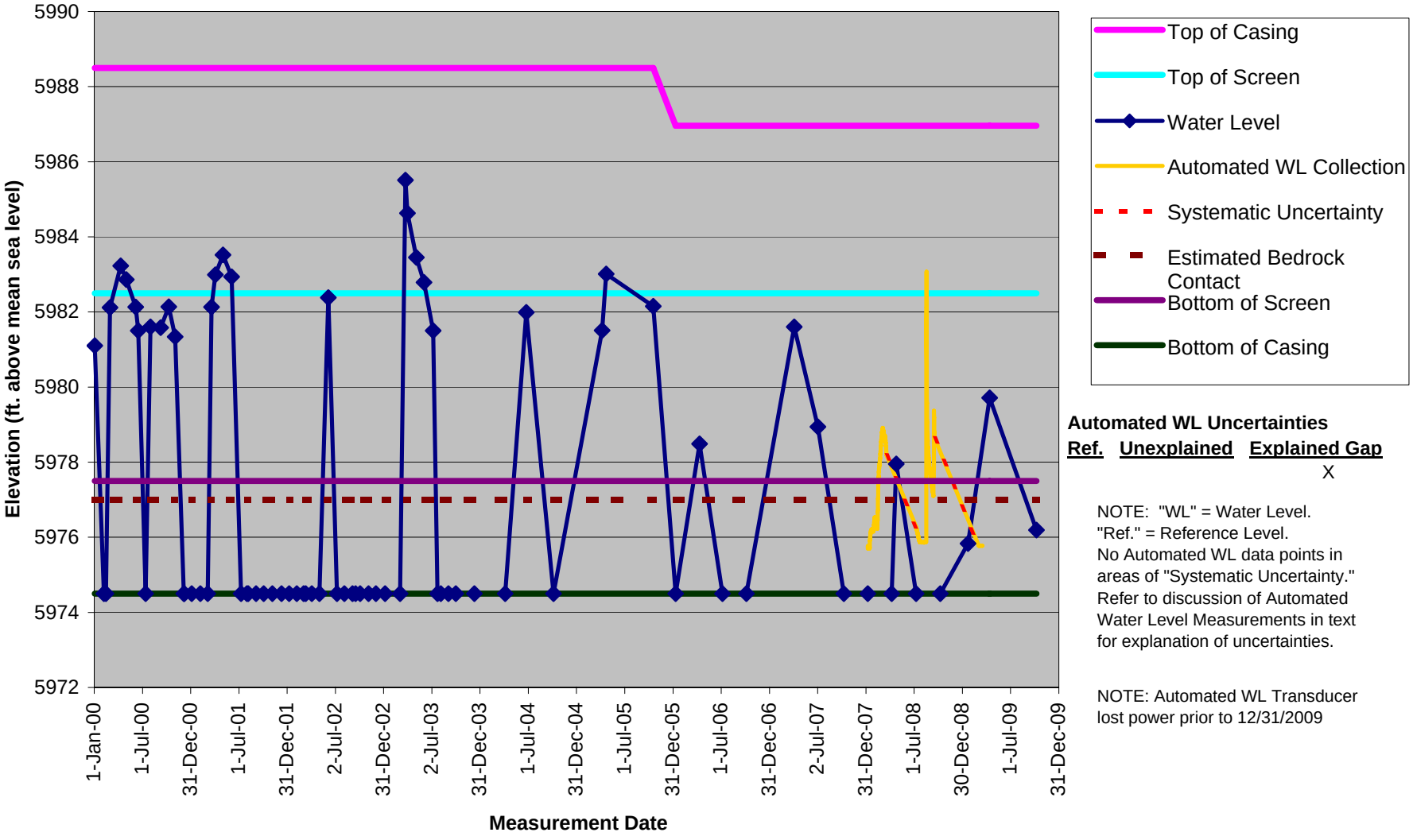
Ref.	Unexplained	Explained Gap
	X	X

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
No Automated WL data points in areas of "Systematic Uncertainty."
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer lost power prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 22996



Automated WL Uncertainties

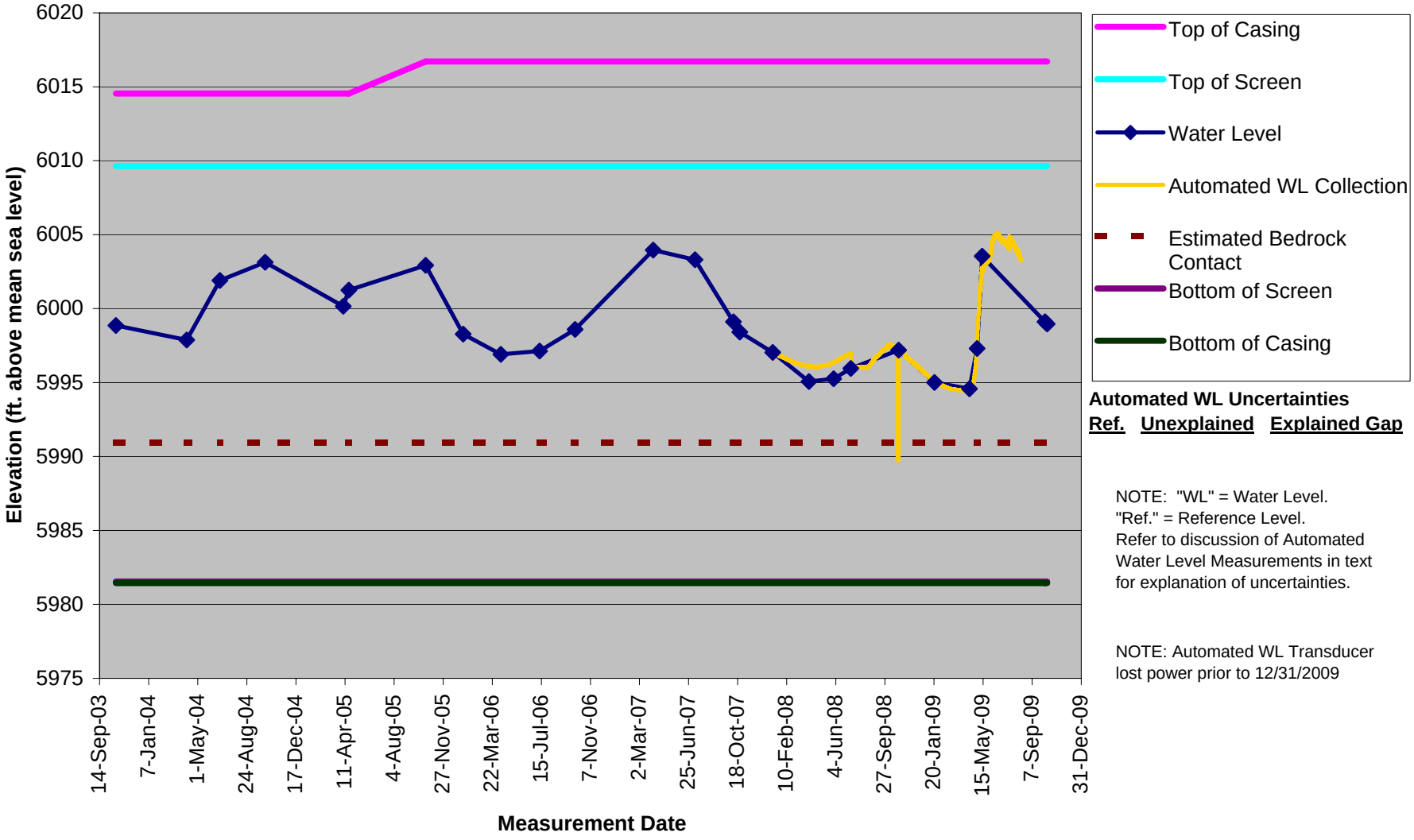
Ref.	Unexplained	Explained Gap
		X

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
No Automated WL data points in areas of "Systematic Uncertainty."
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer lost power prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 33703

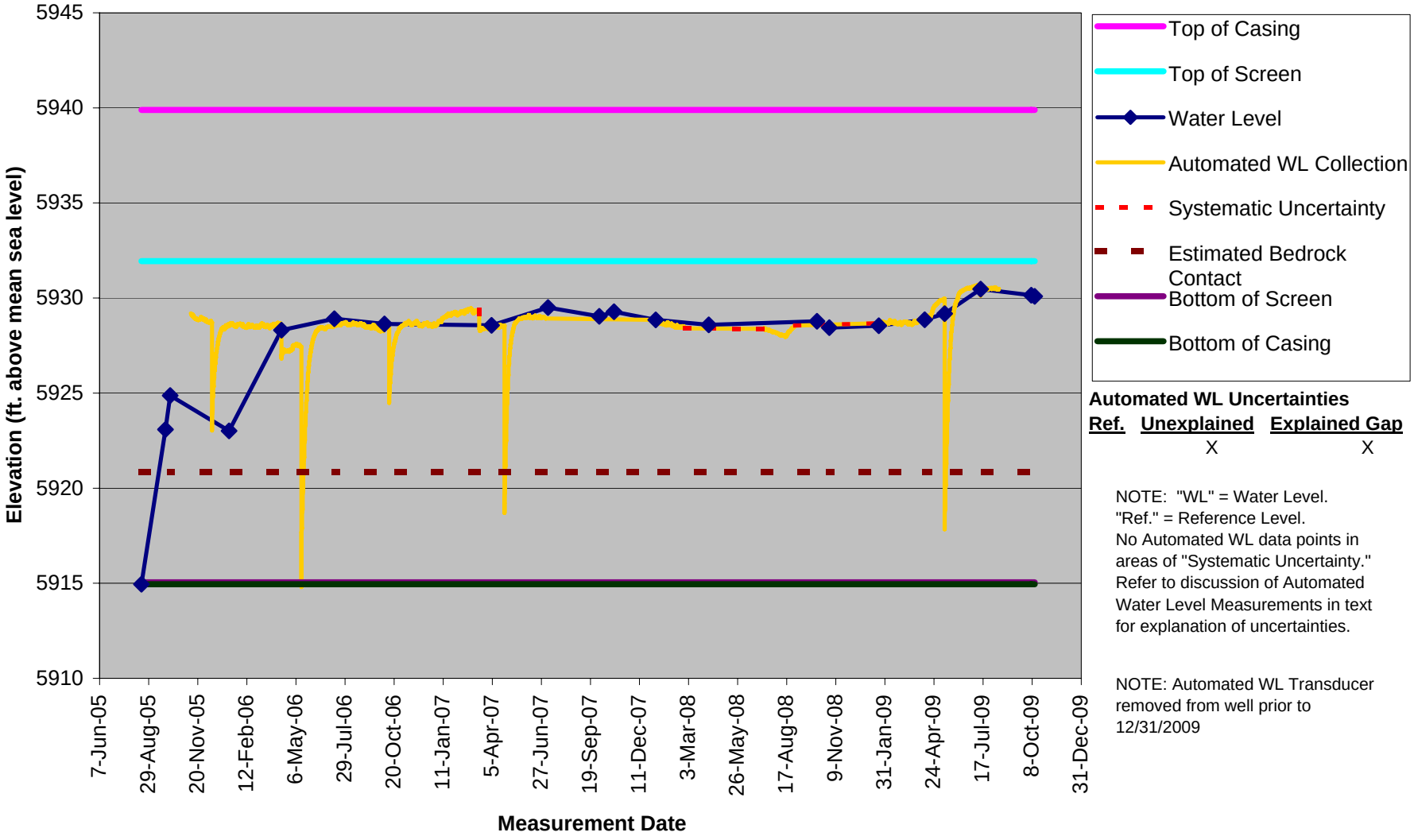


NOTE: "WL" = Water Level.
"Ref." = Reference Level.
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer lost power prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 42505



Automated WL Uncertainties

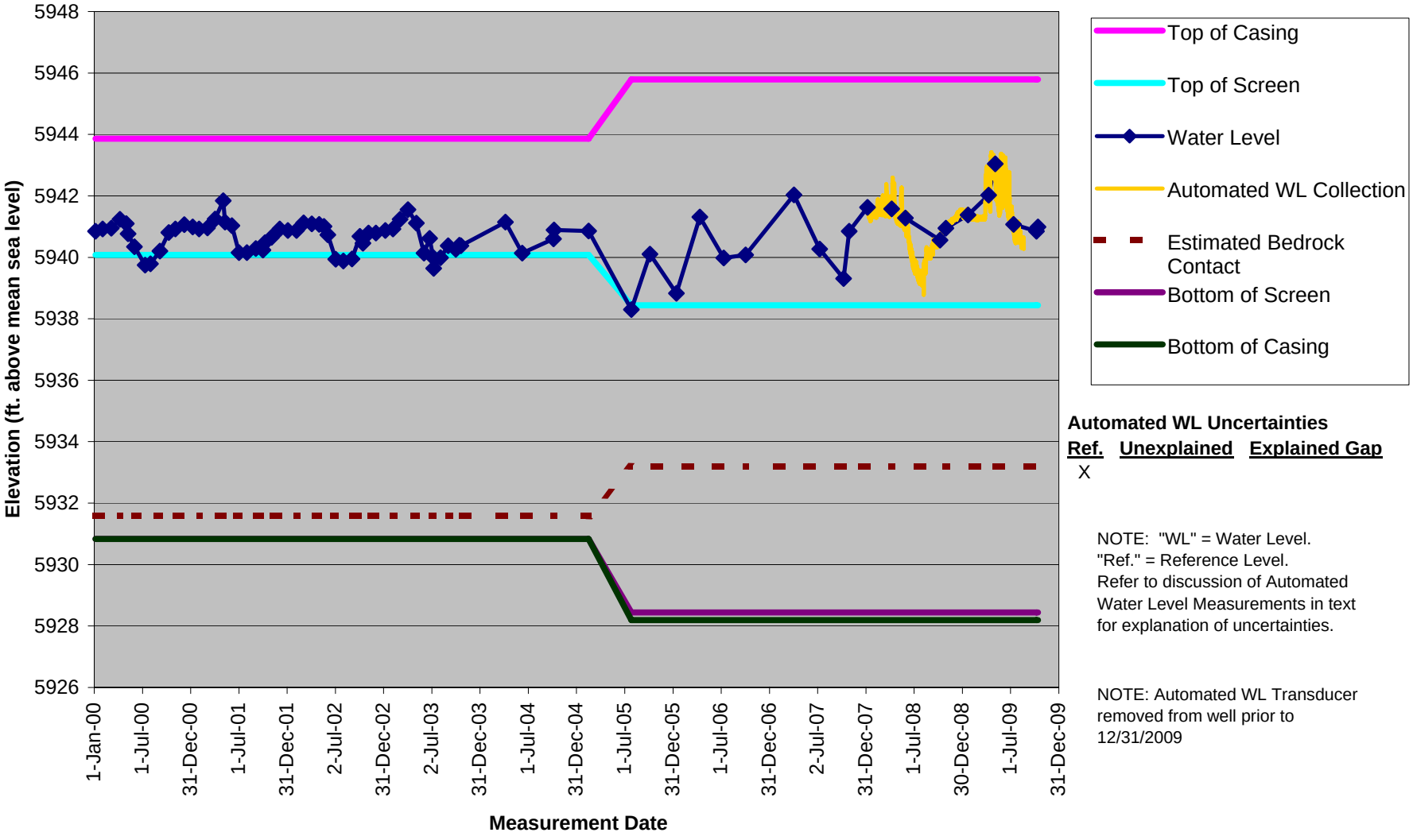
Ref.	Unexplained	Explained Gap
	X	X

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
No Automated WL data points in areas of "Systematic Uncertainty."
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer removed from well prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 1986 / 52505



Automated WL Uncertainties

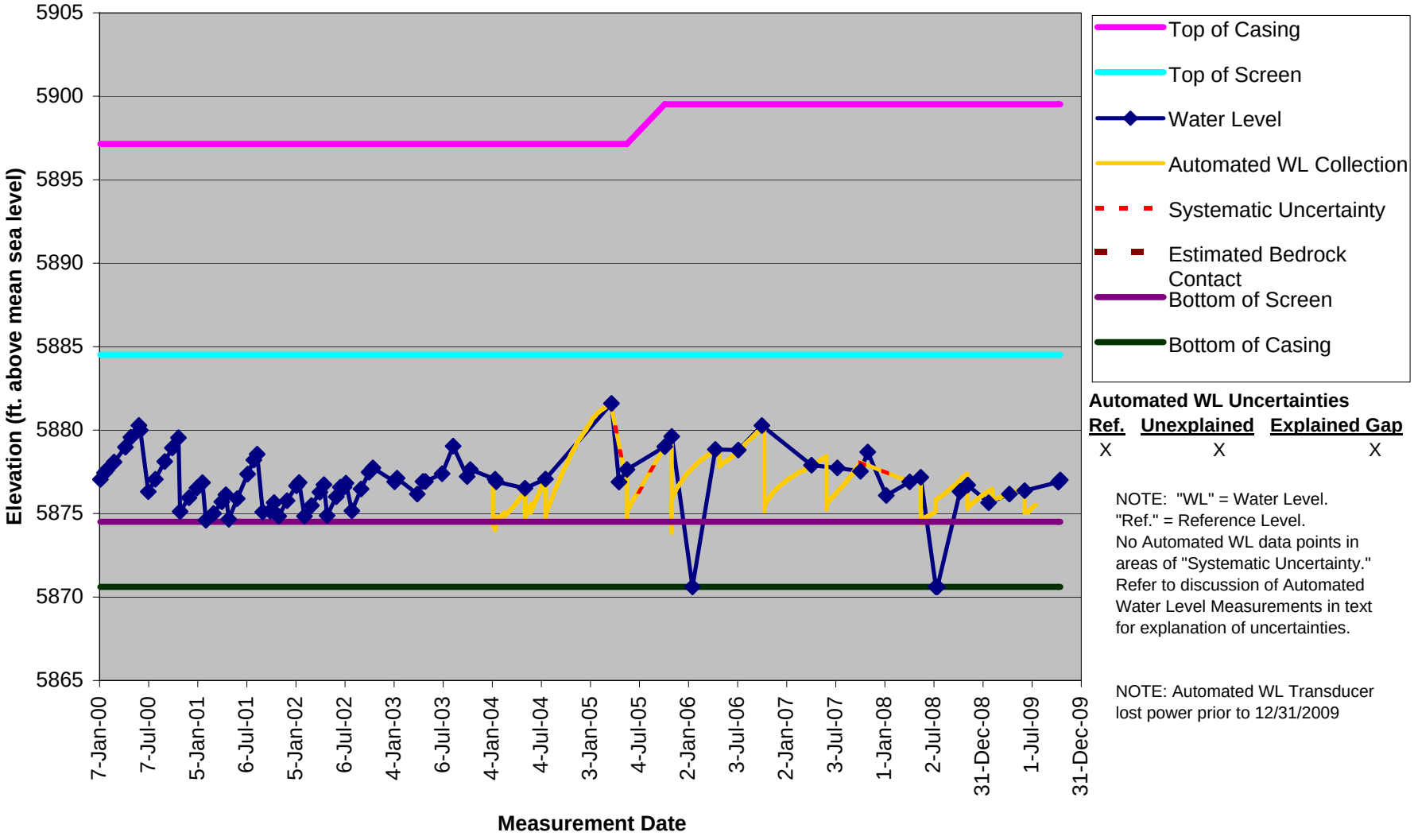
Ref.	Unexplained	Explained Gap
X		

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer removed from well prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 70099



Automated WL Uncertainties

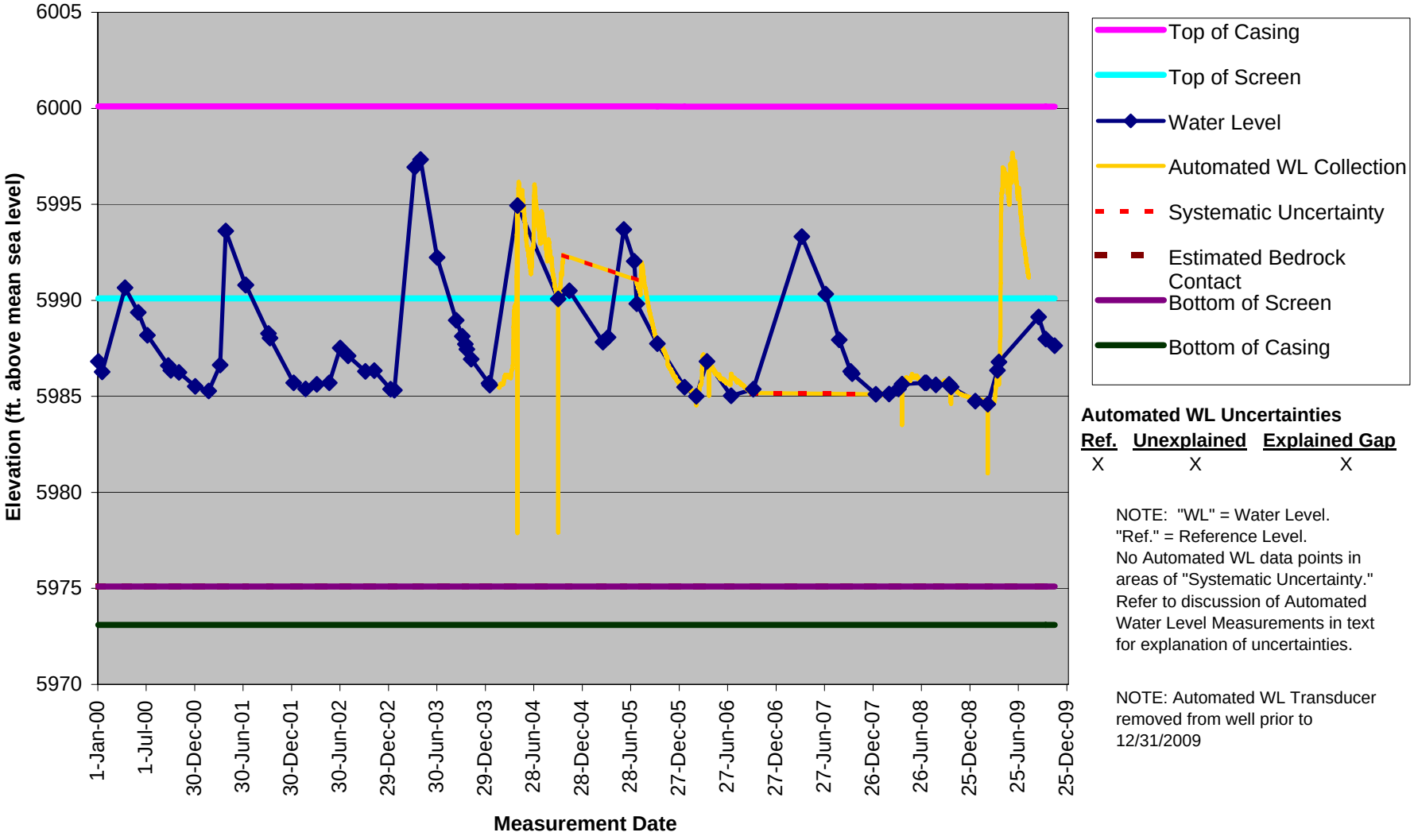
Ref.	Unexplained	Explained Gap
X	X	X

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
No Automated WL data points in areas of "Systematic Uncertainty."
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer lost power prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 70393



Automated WL Uncertainties

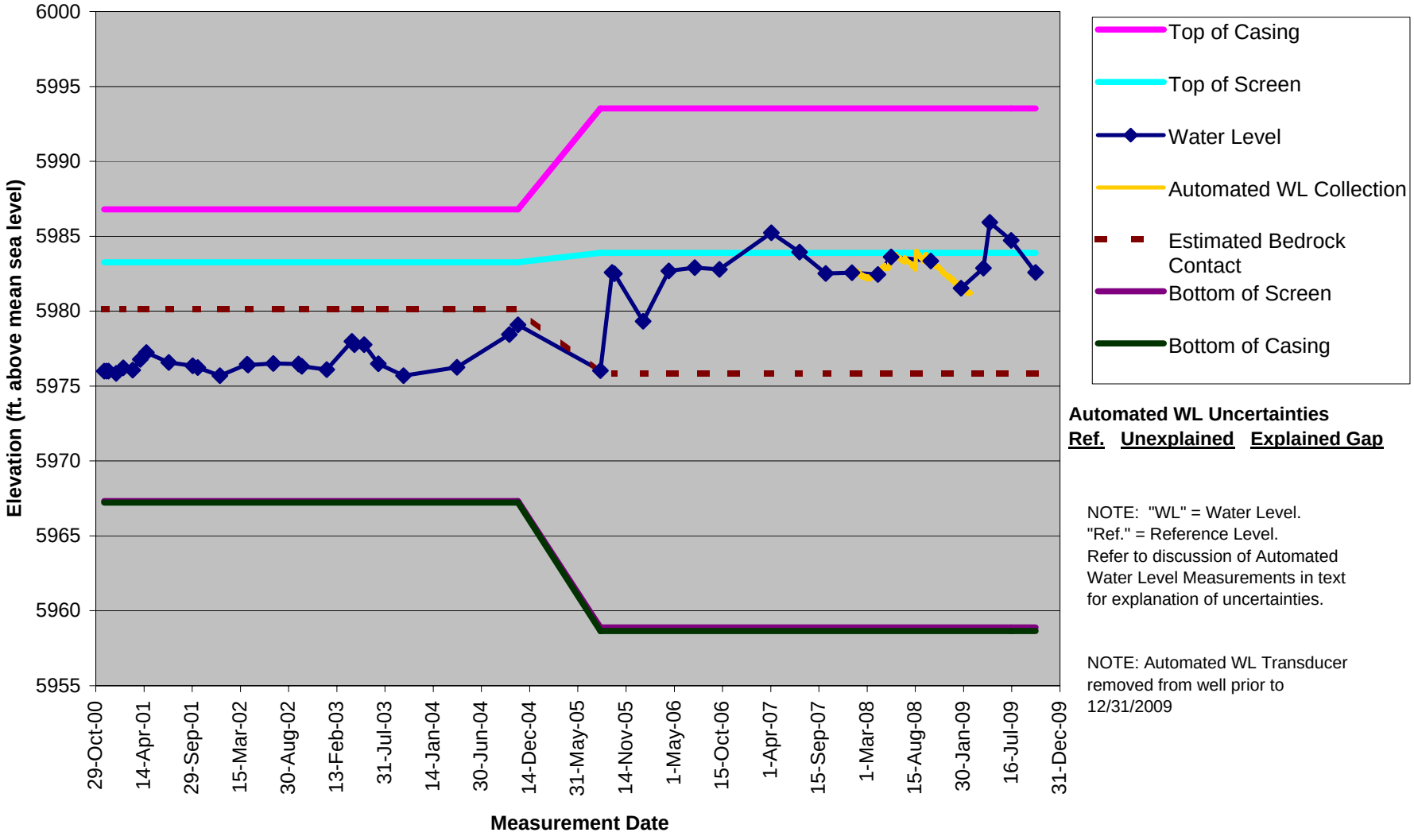
Ref.	Unexplained	Explained Gap
X	X	X

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
No Automated WL data points in areas of "Systematic Uncertainty."
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer removed from well prior to 12/31/2009

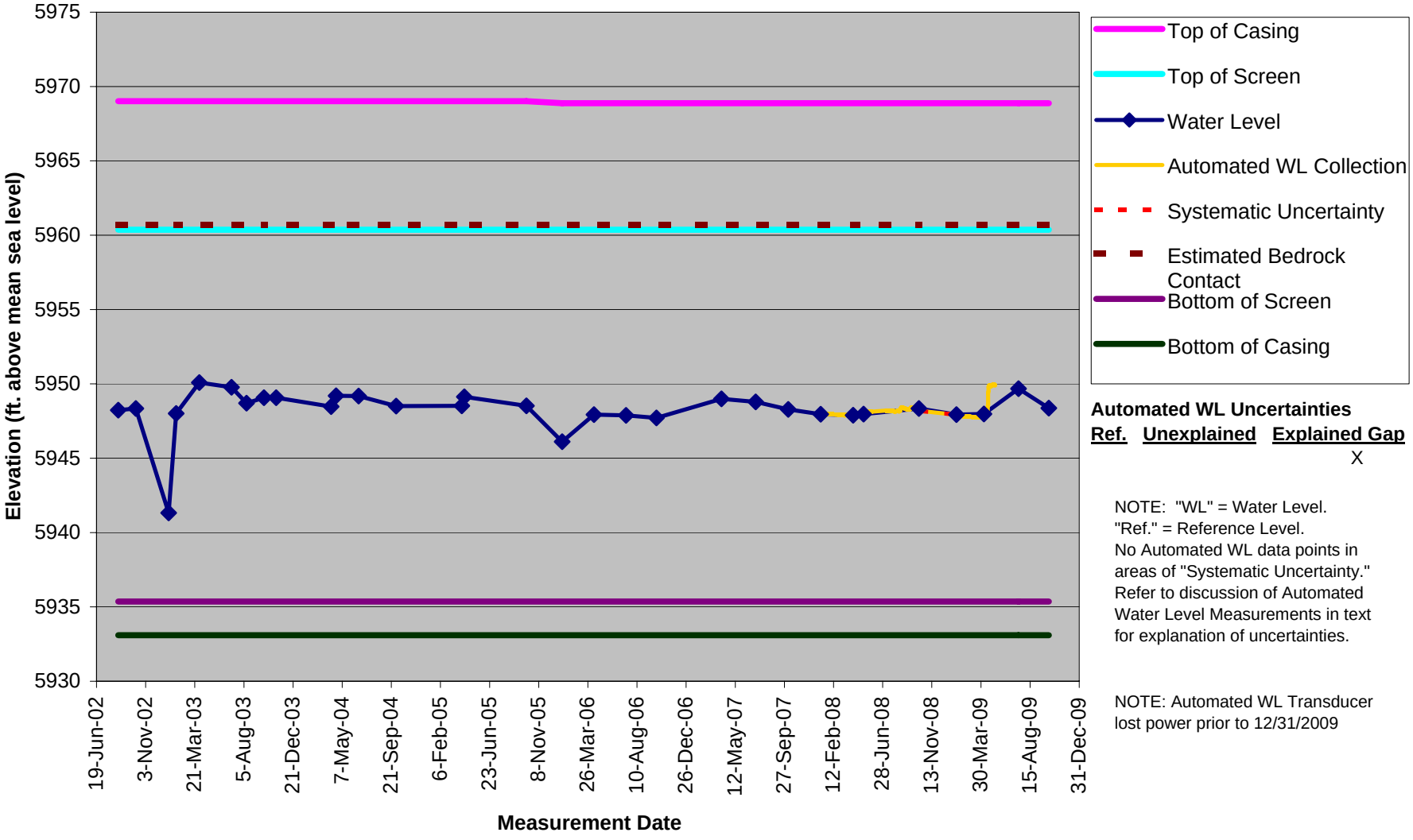
From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 00200 / 70705



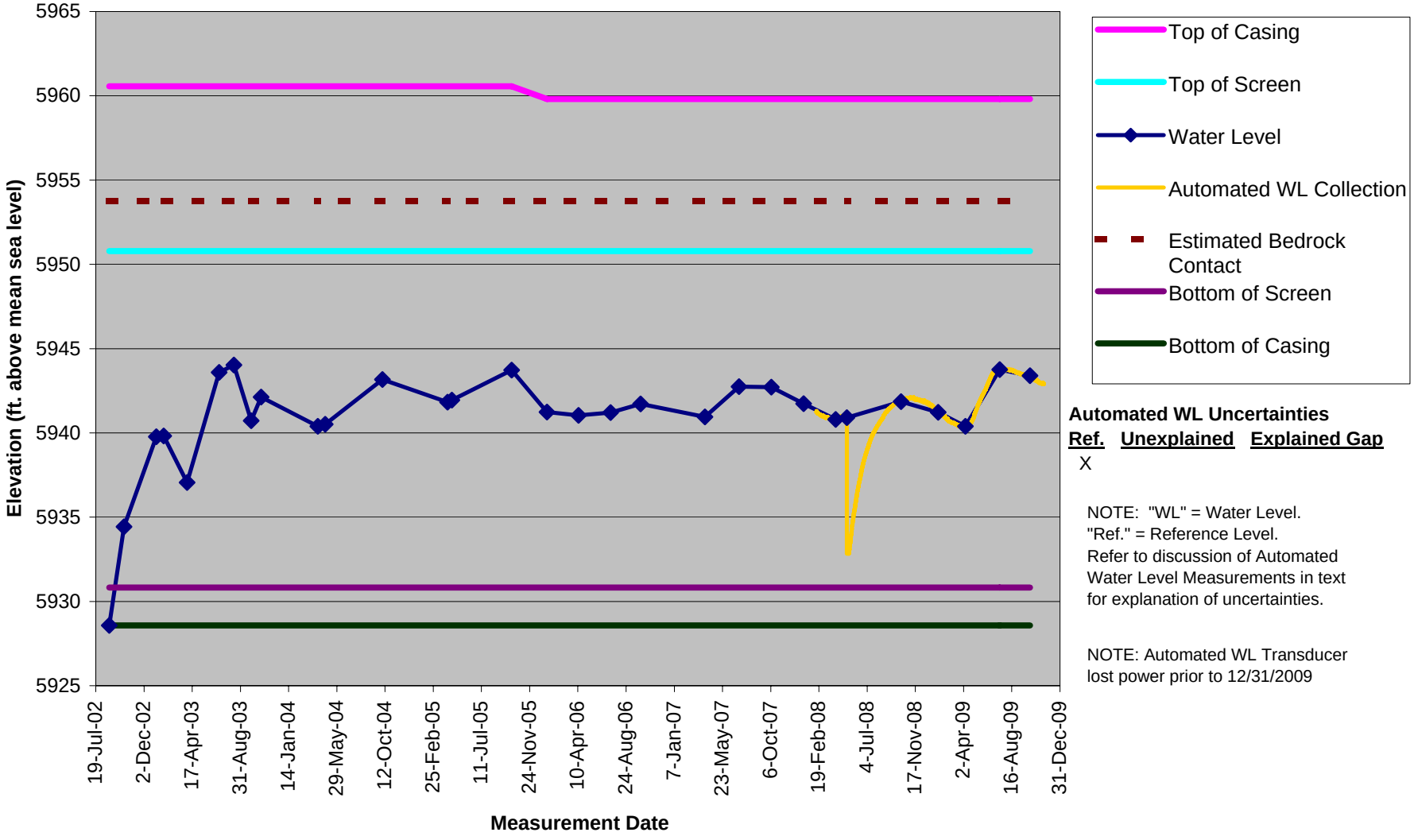
From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 79102



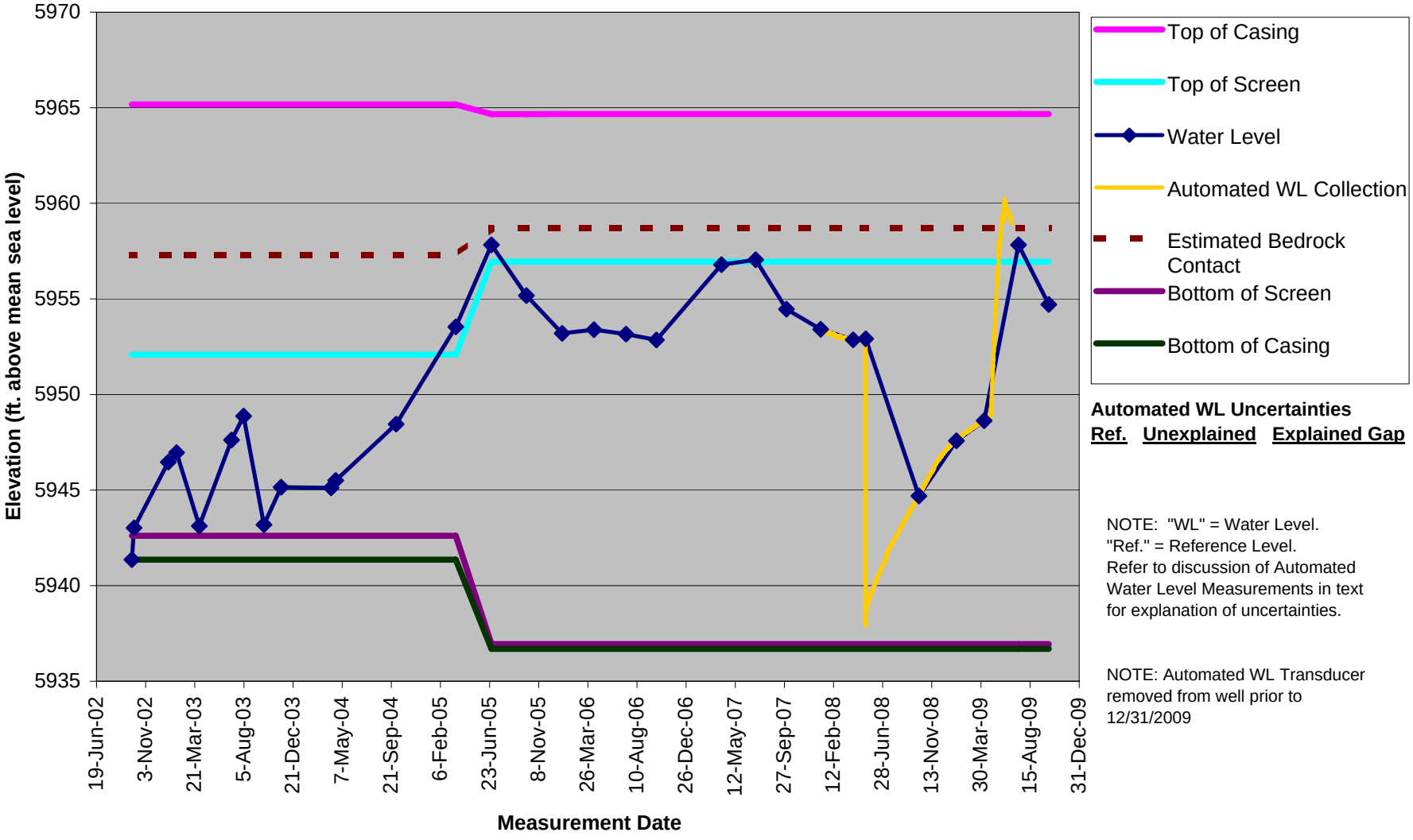
From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 79302



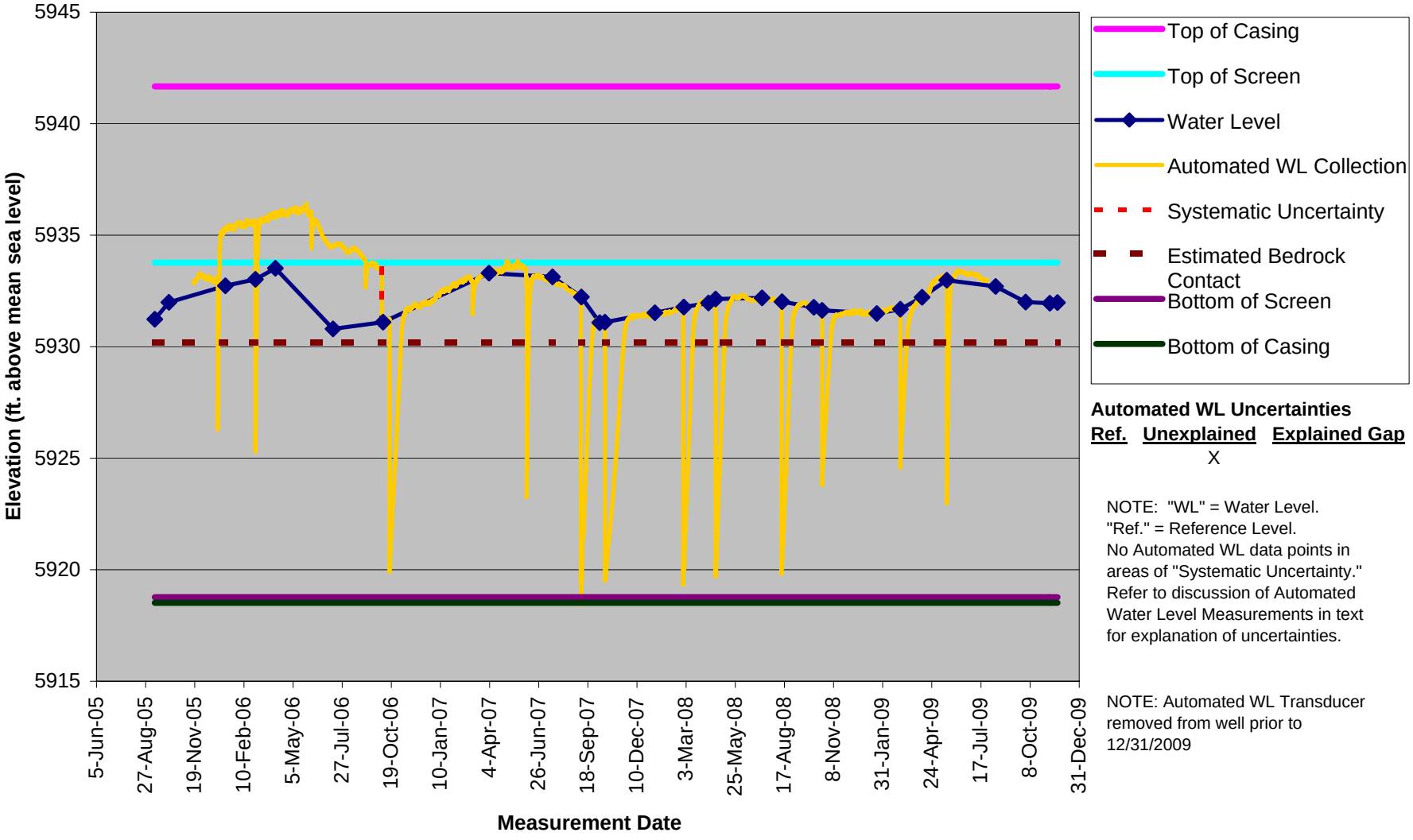
From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) P207989 / 79605



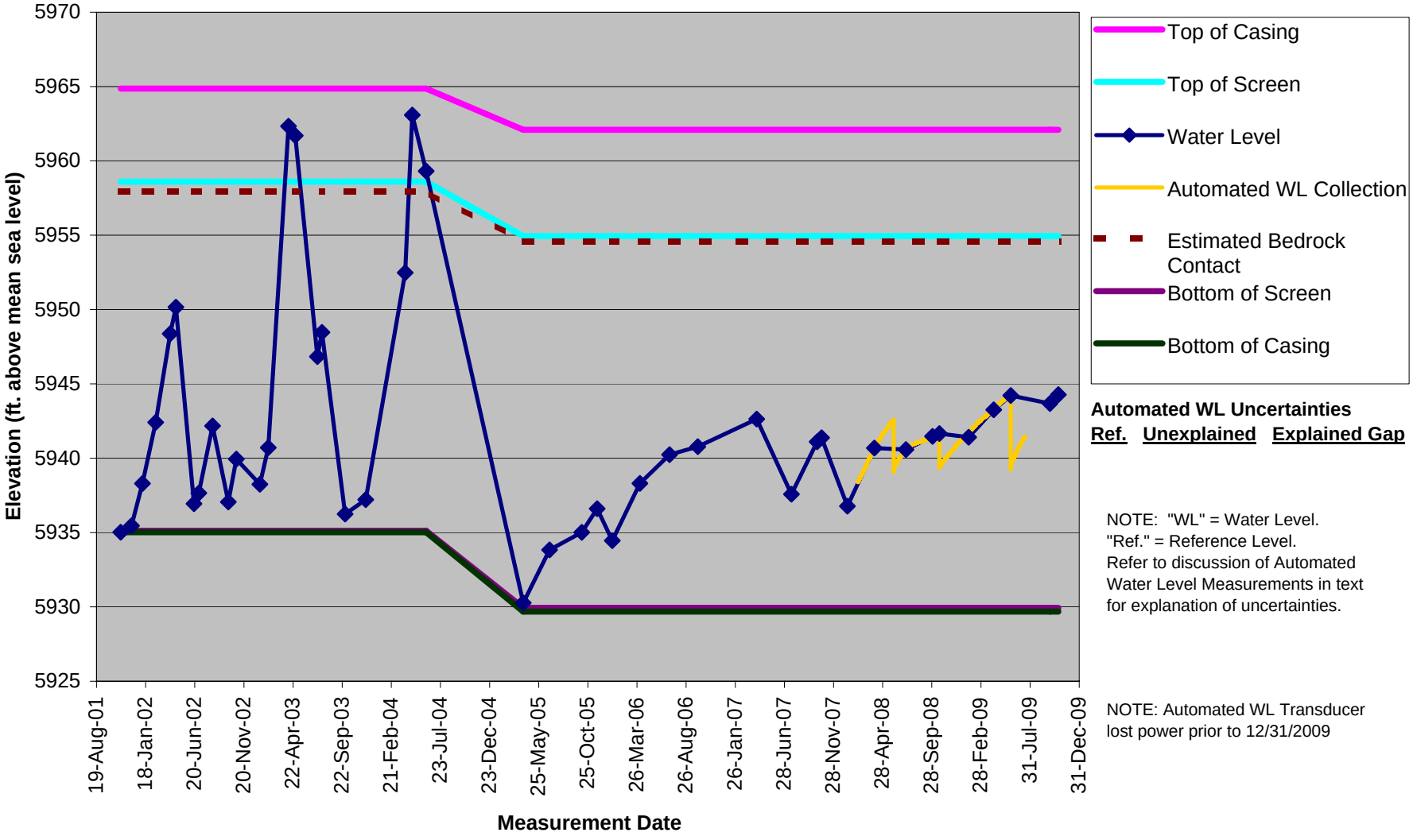
From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 80205



From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 88101 / 88104

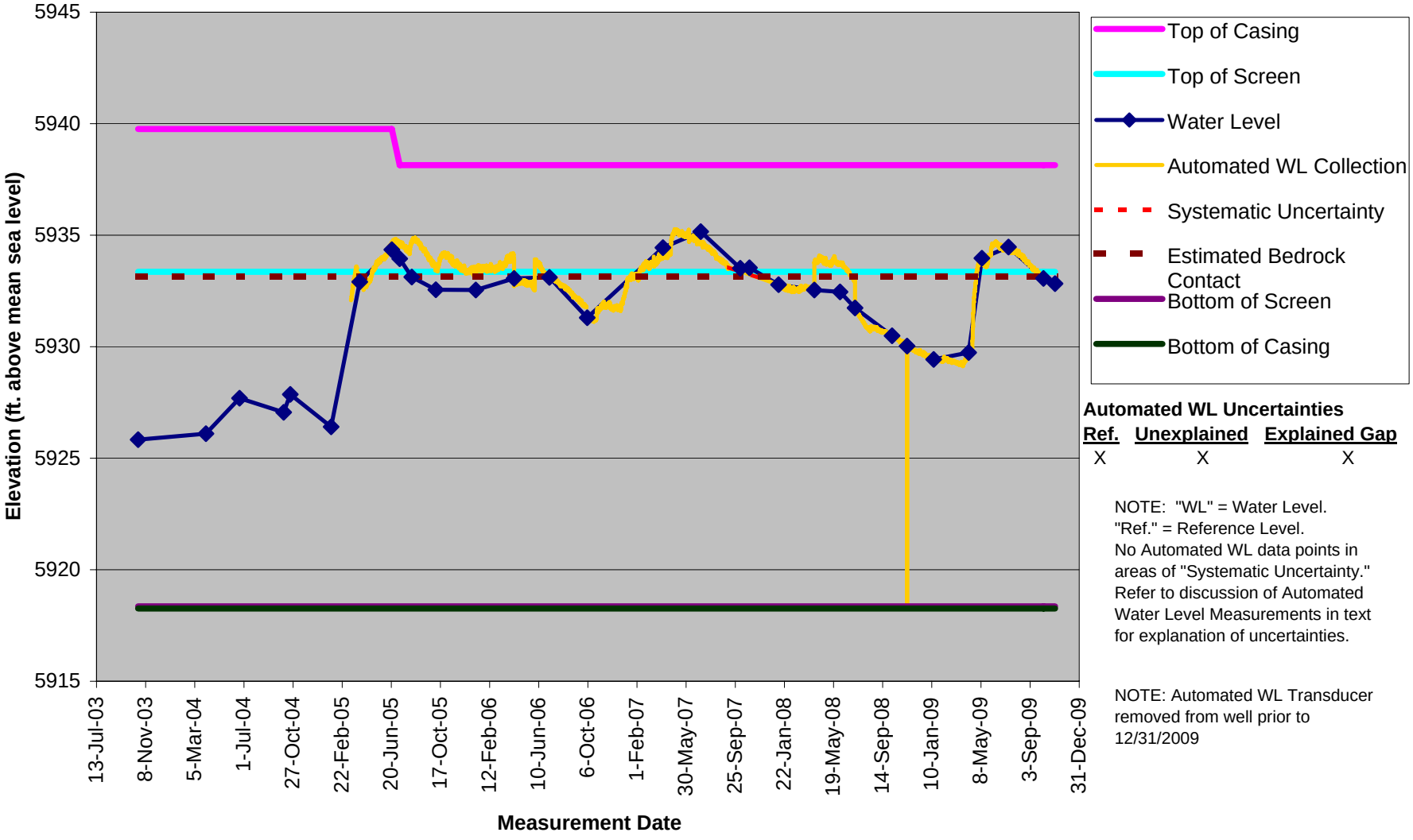


NOTE: "WL" = Water Level.
"Ref." = Reference Level.
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer lost power prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 91203



Automated WL Uncertainties

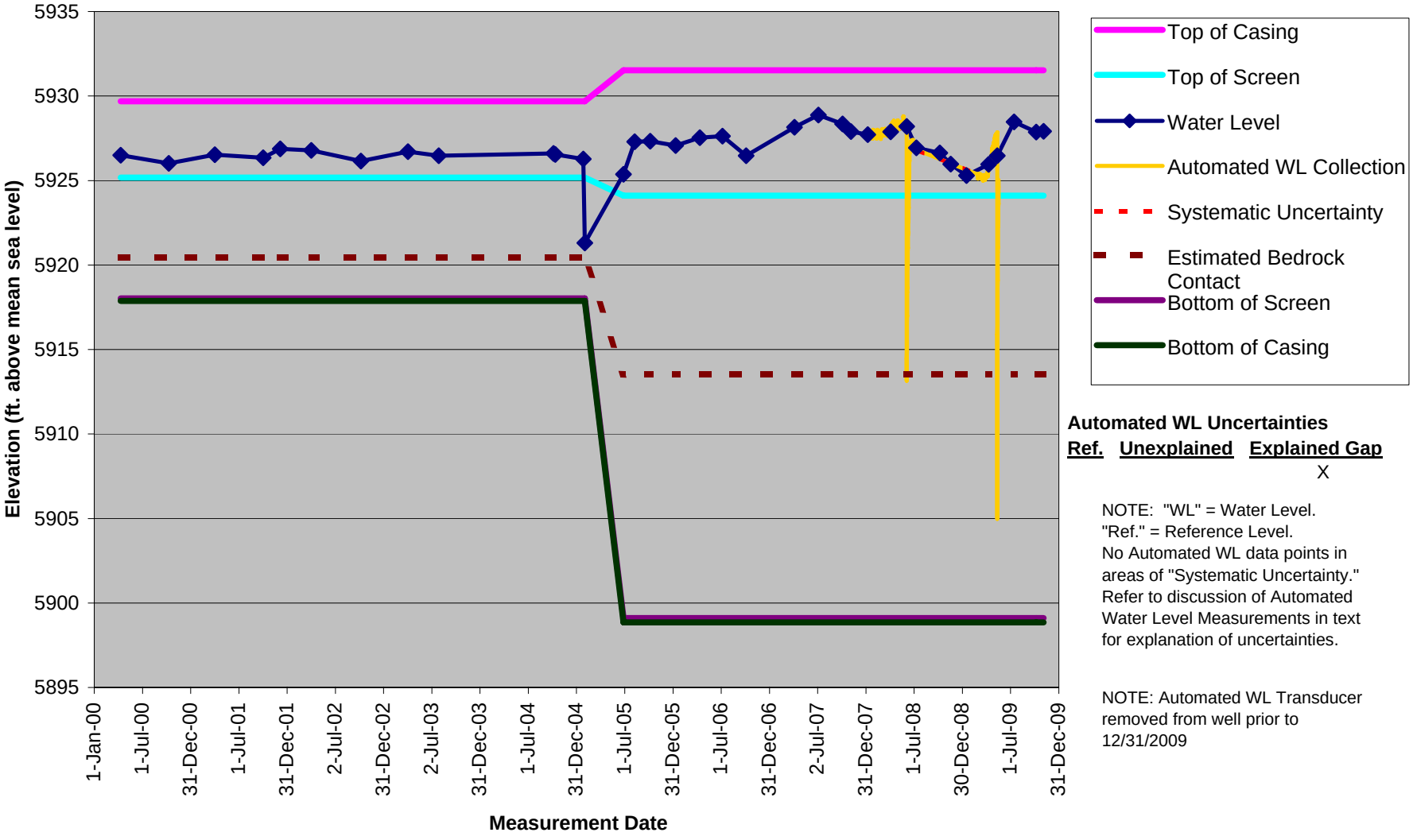
Ref.	Unexplained	Explained Gap
X	X	X

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
No Automated WL data points in areas of "Systematic Uncertainty."
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer removed from well prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 2187 / 91305



Automated WL Uncertainties

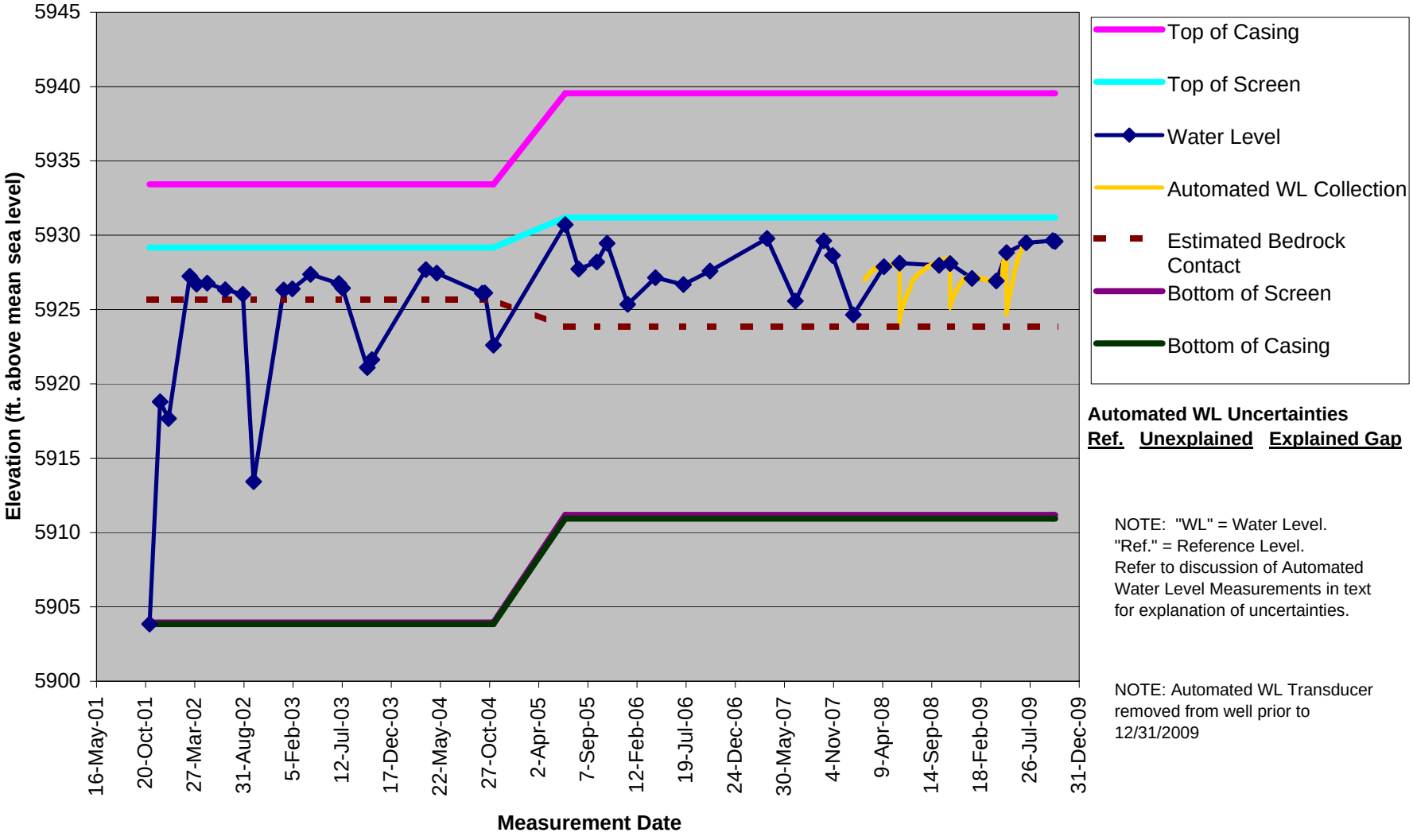
Ref.	Unexplained	Explained Gap
		X

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
No Automated WL data points in areas of "Systematic Uncertainty."
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer removed from well prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 99301 / 99305



Automated WL Uncertainties

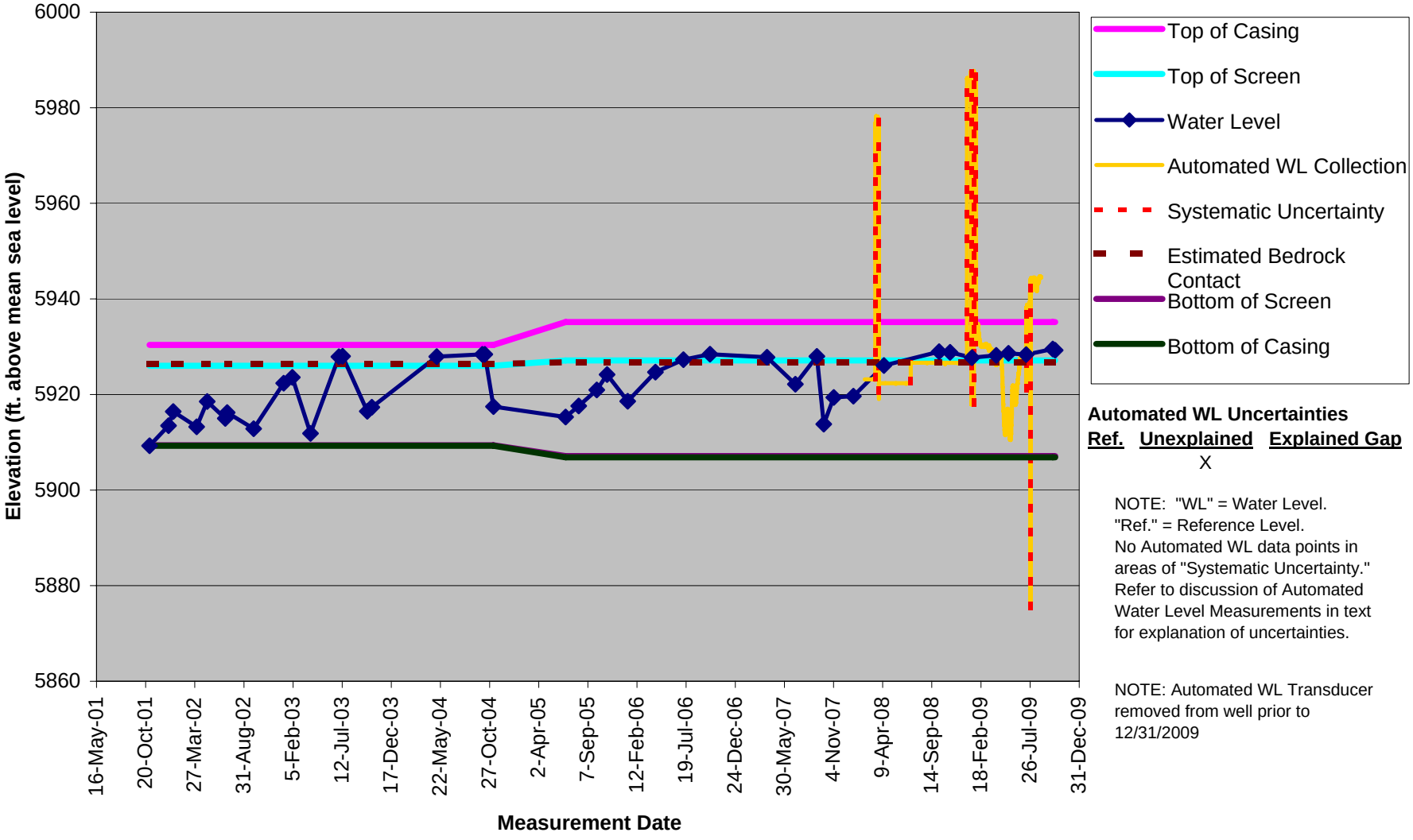
Ref.	Unexplained	Explained Gap

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer removed from well prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) 99401 / 99405



Automated WL Uncertainties

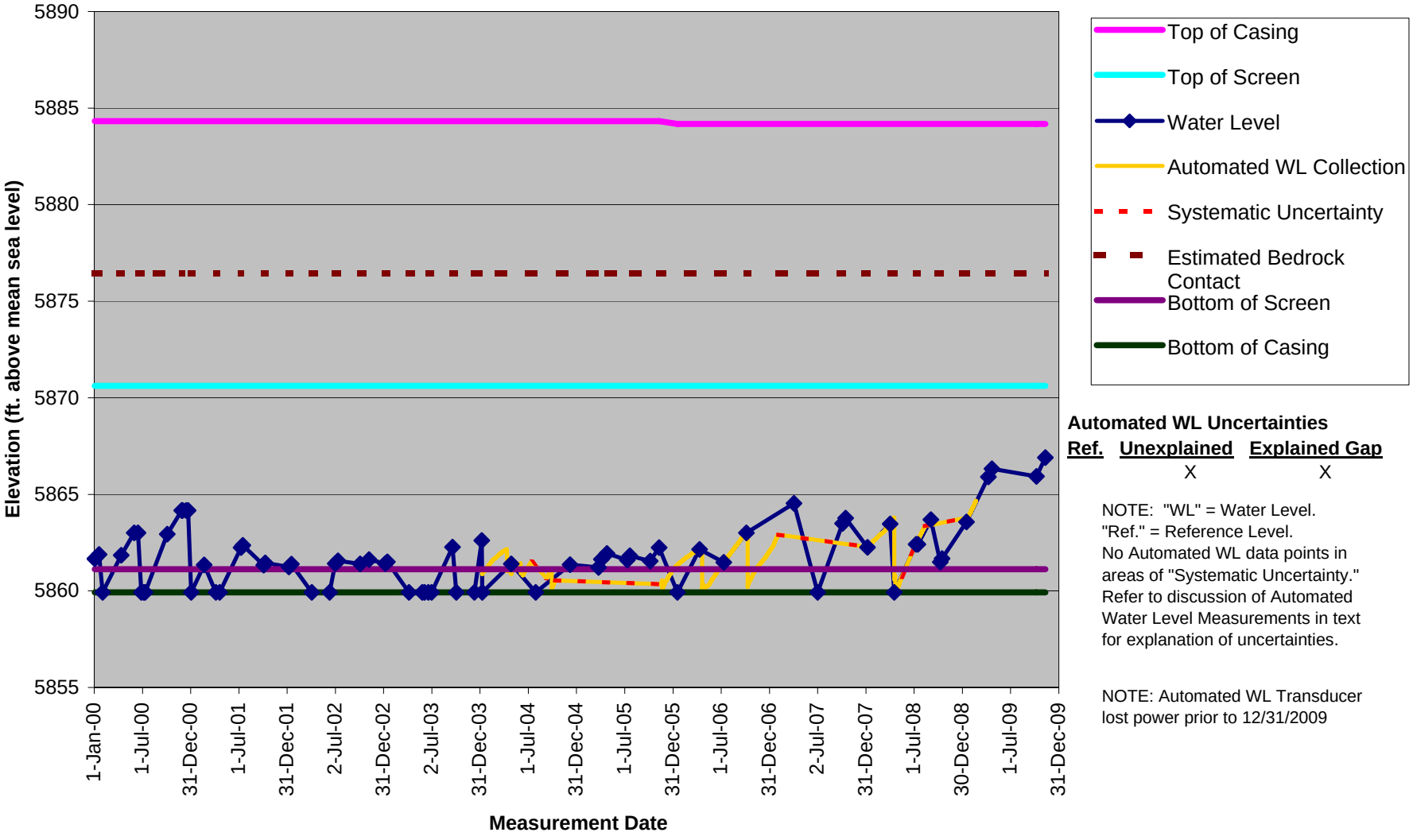
Ref.	Unexplained	Explained Gap
	X	

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
No Automated WL data points in areas of "Systematic Uncertainty."
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer removed from well prior to 12/31/2009

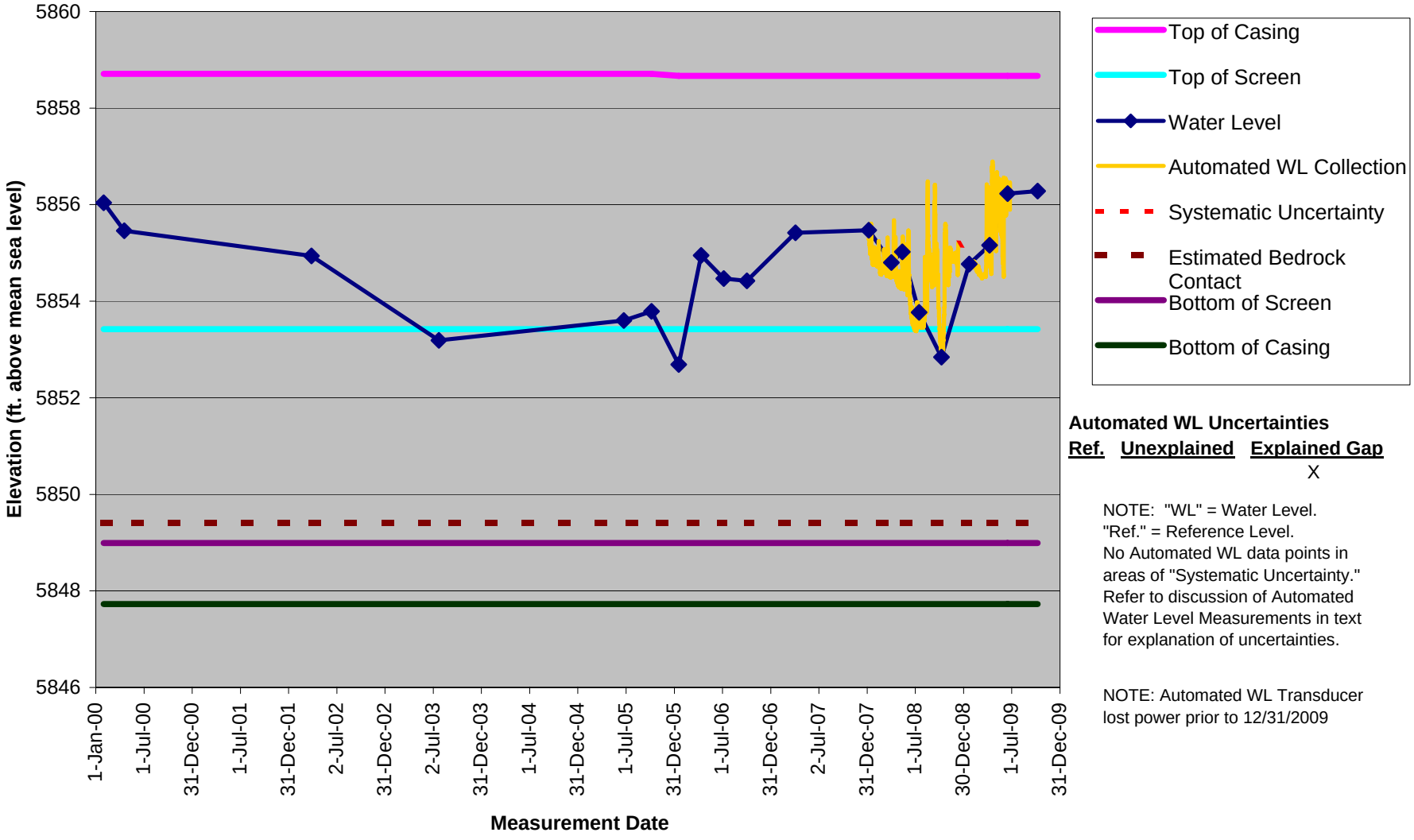
From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) B206989



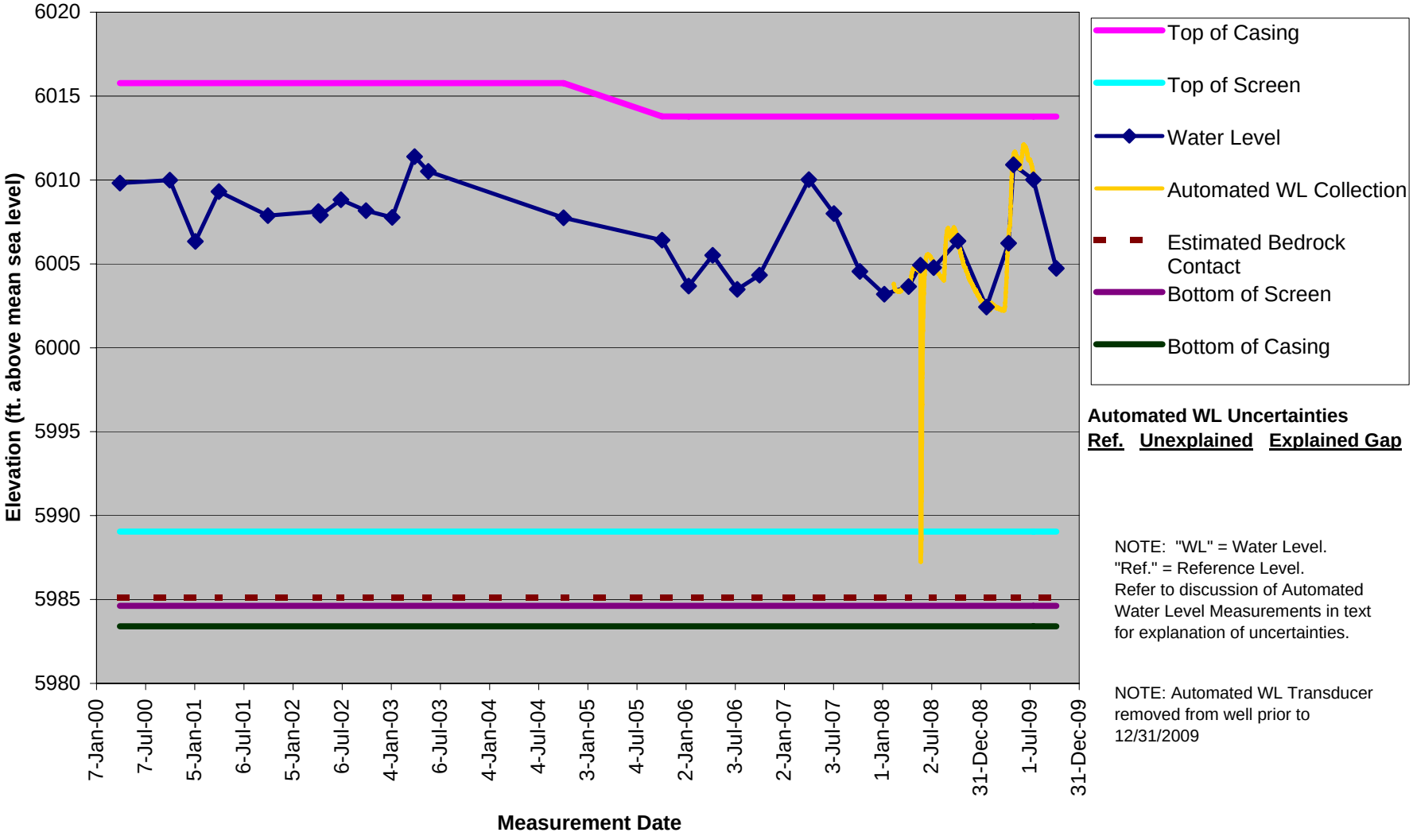
From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) B210489



From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) P115589



Automated WL Uncertainties

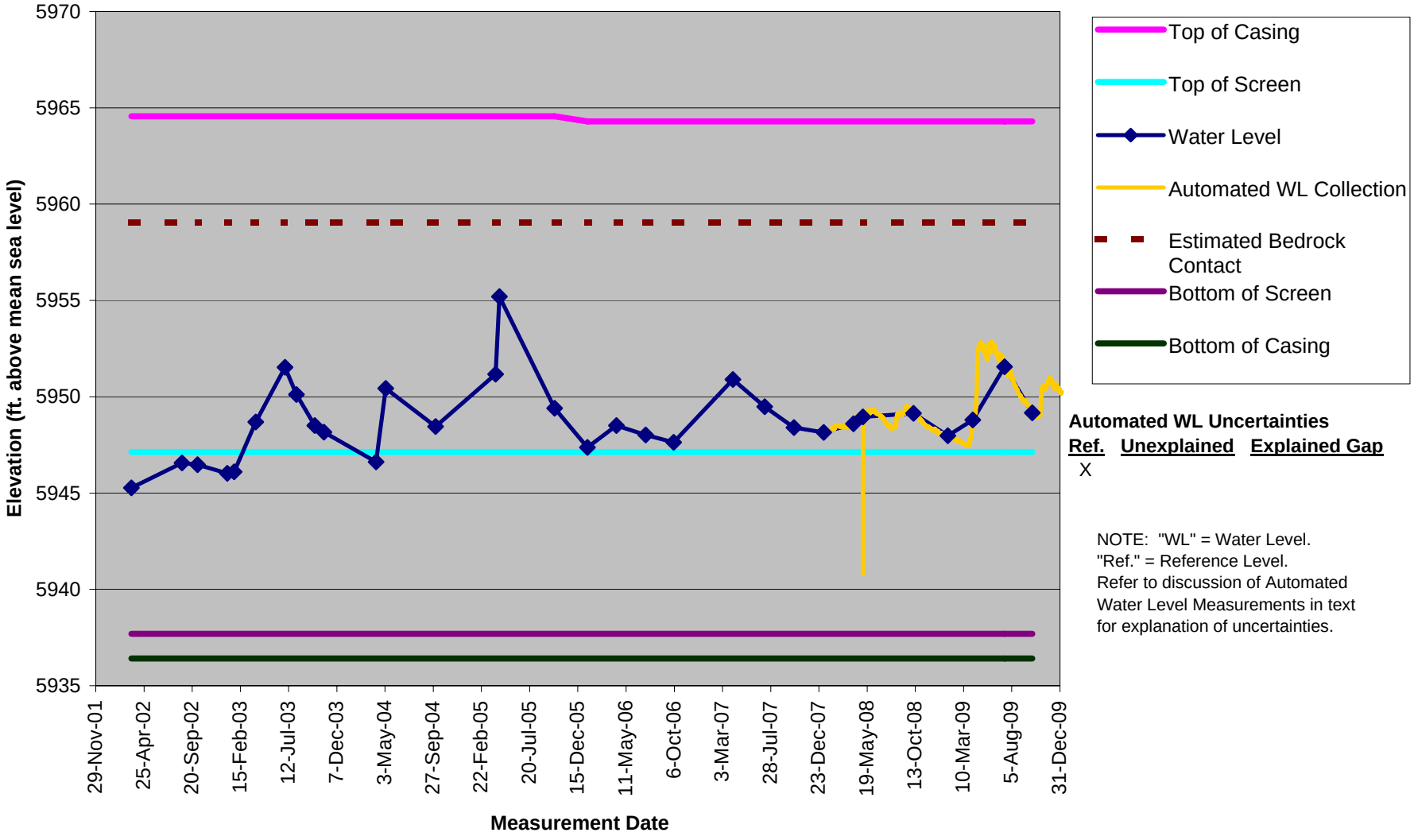
Ref.	Unexplained	Explained Gap

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer removed from well prior to 12/31/2009

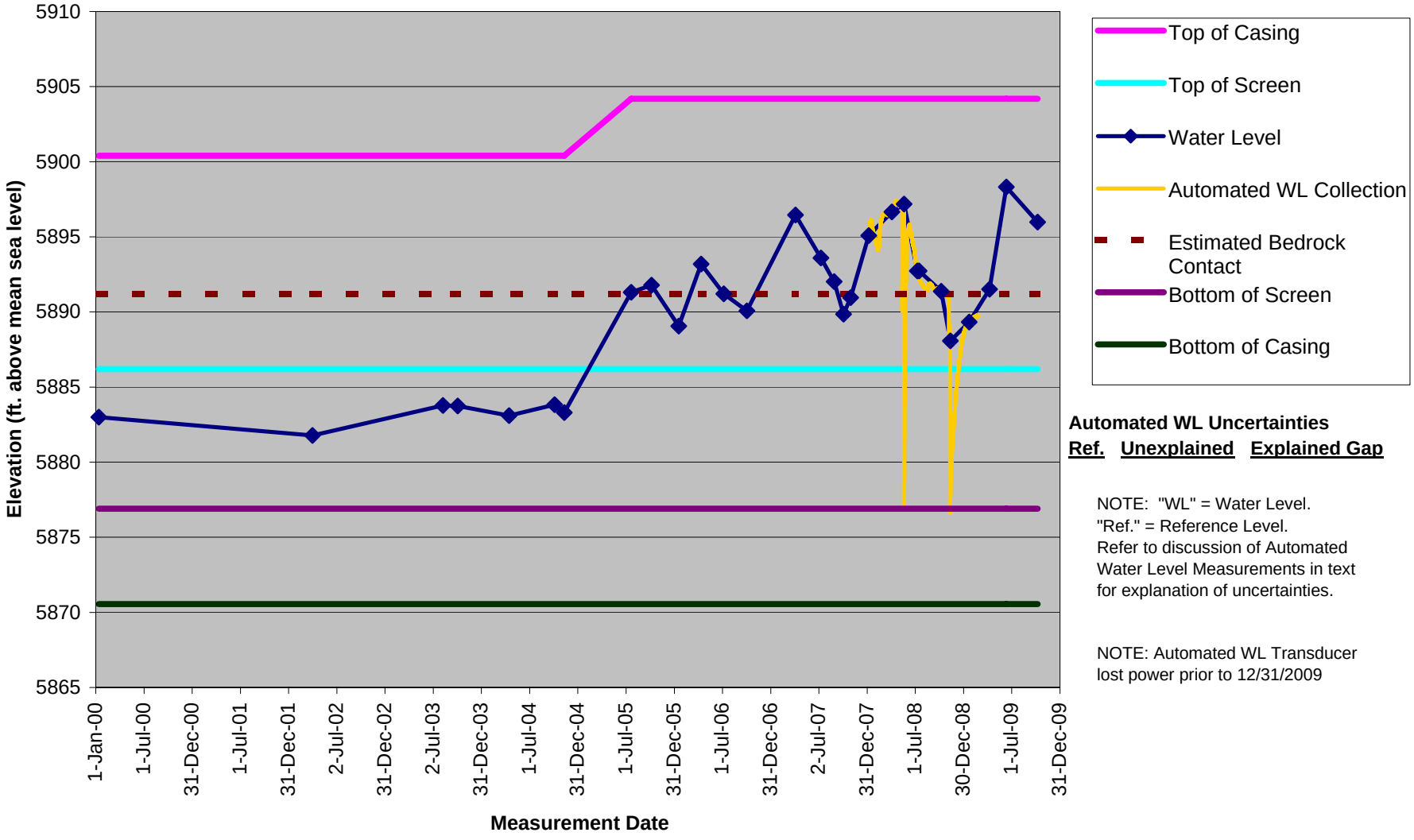
From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) P208989



From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

Automated and Manual Water Level Measurements from Well(s) P210089



Automated WL Uncertainties

Ref.	Unexplained	Explained Gap

NOTE: "WL" = Water Level.
"Ref." = Reference Level.
Refer to discussion of Automated Water Level Measurements in text for explanation of uncertainties.

NOTE: Automated WL Transducer lost power prior to 12/31/2009

From: Calendar Year 2009 Annual Report for the Rocky Flats Site, Appendices. (See report text for additional information.)

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Appendix B: Water-Quality Data

B.1 Surface-Water Analytical Data Evaluation Methods
- B.1.1 30-Day Volume-Weighted Moving Averages
- B.1.2 Rolling 12-Month Volume-Weighted Averages
- B.1.3 Volume-Weighted Averages for Various Time Periods (Periodic Averages)
- B.1.4 Loading Analysis
  - B.1.4.1 Continuous Flow-Paced Sampling Analytical Results

B.2 Surface-Water Sample Collection Methods
- B.2.1 Sample Types
  - B.2.1.1 Continuous Flow-Paced Composite Samples
- B.2.2 Flow Pacing of Automated Samplers
  - B.2.2.1 Continuous Flow-Paced Composite Samples

B.3 Results of Statistical Assessments of Water-Quality Data
- B.3.1 Seasonal-Kendall Trend Plots and Summary Tables
  - B.3.1.1 Sentinel Wells
  - B.3.1.2 Selected AOC Well Data
- B.3.2 ANOVA and Seasonal-Kendall Results for the PLF and OLF
  - B.3.2.1 PLF ANOVA Summary
  - B.3.2.2 PLF S-K Plots and Summary Tables
  - B.3.2.3 OLF ANOVA Summary
  - B.3.2.4 OLF S-K Plots and Summary Tables

B.4 PARCC Evaluation

B.5 Automated Surface-Water Sample Collection Field Information
- B.5.1 Location GS01
- B.5.2 Location GS03
- B.5.3 Location GS05
- B.5.4 Location GS08
- B.5.5 Location GS10
- B.5.6 Location GS11
- B.5.7 Location GS13
- B.5.8 Location GS31
- B.5.9 Location GS51
- B.5.10 Location GS59
- B.5.11 Location SW018
- B.5.12 Location SW027
- B.5.13 Location SW093

B.6 Analytical Results for Water Samples—4th Quarter of CY 2009

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Appendix B: Water-Quality Data

B.1 Surface-Water Analytical Data Evaluation Methods

B.1.1 30-Day Volume-Weighted Moving Averages

Evaluation of analytical data using 30-day volume-weighted moving averages applies to the POE and POC monitoring objectives. The method is as follows:

- 30-day averages are calculated semi-monthly for each location (within one week of the 15th and last day of each month).
- Calculations are performed using daily time steps. The 30-day average for a particular day is calculated using a 'window' of time, which includes the previous 30 days that had both flow and analytical measurements. Therefore, for a location with continuous flow and complete analytical results, 365 (366 in a leap year) 30-day average values are calculated annually. For a location that flows intermittently, the 30-day window includes the previous 30 days with greater than zero flow. Therefore, the 30-day average at an intermittently flowing location will include more than 30 *calendar* days.
- When no analytical result or measured flow value is available for a particular day, then no 30-day average is calculated for that day. No analytical result may be available either due to a non-sufficient quantity for analysis (referred to as an NSQ condition) or a failed lab analysis. Flow measurement may be missing due to equipment failures or adverse weather conditions (winter freezing).
- When a negative radionuclide result (e.g., −0.002 pCi/L) is returned from the lab due to blank correction, then a value of 0.0 pCi/L is used for calculation purposes. When an undetect is returned from the lab for metals and nitrate analyses, then half the detection limit is used for calculation purposes.
- When a sample has a corresponding duplicate or reanalysis ("re-run'), **AND** *neither* result is greater than the Standard, **THEN** the value used in calculations is the arithmetic average of the two values.
- When a sample has a corresponding duplicate or reanalysis ("re-run'), **AND** *either* result is greater than the Standard, **THEN** an evaluation of the data pair is performed to determine the representativeness of the sample results.[1] The method for determining representativeness is as follows:

  1a. The Relative Percent Difference (RPD) for the metal/nitrate data pair is calculated.

$$RPD(\%) = \frac{|R_1 - R_2|}{(R_1 + R_2)/2} * 100$$

where (Equation B−1)

$R_1 = \text{value of initial result}$

$R_2 = \text{value of duplicate result}$

[1] Significant differences in values for a data pair are an indication of potential problems with sample preparation and/or analysis. Under these circumstances, an applicable value to be used for the calculation of 30-day averages can not be determined with sufficient confidence to make compliance decisions. As such, a evaluation is required to assess the representativeness of the sample and it's usability for compliance decisions.

1b. The Duplicate Error Ratio (DER) for the radionuclide data pair is calculated.

$$DER = \frac{|R_1 - R_2|}{\sqrt{(2\sigma_{R1})^2 + (2\sigma_{R2})^2}}$$

where

$R_1 = \textit{value of initial result}$

$R_2 = \textit{value of duplicate result}$

$2\sigma_{R1} = 2\ \textit{sigma error of initial result}$

$2\sigma_{R2} = 2\ \textit{sigma error of duplicate result}$

(Equation B−2)

2a**.** **IF** the RPD is greater than or equal to 100 percent ([higher result] >= 3× [lower result]), **THEN** the results will be determined to be non-representative. The results will not be used for the calculation of 30-day averages, and no 30-day average values will be computed for the days during which the sample was collected.

2b**.** **IF** the RPD is less than 100 percent ([higher result] < 3× [lower result]), **THEN** the results will be determined to be sufficiently representative. The arithmetic average of the two results will be used for the calculation of 30-day average values.

2c. **IF** the DER is greater than or equal to 1.5, **THEN** the radionuclide results will be determined to be non-representative. The results will not be used for the calculation of 30-day averages, and no 30-day average values will be computed for the days during which the sample was collected.

2d**.** **IF** the DER is less than 1.5, **THEN** the radionuclide results will be determined to be sufficiently representative. The arithmetic average of the two results will be used for the calculation of 30-day average values.

- Each calendar day is assigned the activity or concentration (analytical result in pCi/L, mg/L, or µg/L, as determined above) of the composite sample that was filling at the end of that day (specifically, at 23:59:59).
- Each calendar day has an associated surface-water volume (liters) that was measured by the flow meter. Flow record may contain estimated values for certain conditions.[2]
- The daily surface-water volume is then multiplied by the corresponding activity/concentration to calculate a load (in pCi, mg, or µg) for each day.
- The sum of the daily loads (pCi, mg, or µg) for the preceding 30-days (with both flow and an analytical result) is divided by the sum of the daily surface-water volumes (liters) for the preceding 30 days to calculate the volume-weighted 30-day average (pCi/L, mg/L, or µg/L). The equation can be given as follows:

$$\frac{\sum_{day=0}^{day=-29}[pCi,\ mg,\ \ or\ \mu g]}{\sum_{day=0}^{day=-29}[liters]} = 30day\ Average_{day=0}[pCi/L,\ mg/L\ ,\ or\ \mu g/L]$$

(Equation B−3)

[2] Estimation is required when flow rates exceed the capacity of the flow-control structure (e.g., a flume), winter ice conditions result in an inaccurate measurement, or there is an equipment failure.

- The 30-day average values are then rounded to 2 significant figures. No rounding occurs with the measured input numbers prior to calculation of the rolling 30-day averages. Only the final calculated value is rounded. For example, a calculated value of 0.124 pCi/L would be rounded to 0.12 pCi/L. Similarly, a value of 0.246 pCi/L would be rounded to 0.25 pCi/L.
- These 30-day averages are then compared to the appropriate Standards and reported according to the requirements of the RFLMA.

B.1.2 Rolling 12-Month Volume-Weighted Averages

Evaluation of analytical data using rolling 12-month volume-weighted averages applies to the POE and POC (terminal ponds only) monitoring objectives. The method is as follows:

- Rolling 12-month averages are calculated monthly for each location (on last day of each month).
- Calculations are performed using daily time steps. The rolling 12-month average for a particular day (specifically the last day of each month) is calculated using a 'window' of time which includes the previous 365 calendar days. Therefore, for a location with continuous flow and complete analytical results, 365 daily values are included in each 'window' (12 'windows' per year). For a location that flows intermittently, the rolling 12-month window will include fewer than 365 daily values, since days of zero flow have no applicable analytical result or discharge volume.
- When no analytical result or measured flow value is available for a particular day, then the day is not included in the rolling 12-month 'window'. No analytical result may be available either due to a non-sufficient quantity for analysis (referred to as an NSQ condition) or a failed lab analysis. Flow measurement may also be missing due to equipment failures or adverse weather conditions (winter freezing).
- When a negative radionuclide result (e.g., −0.002 pCi/L) is returned from the lab due to blank correction, then a value of 0.0 pCi/L is used for calculation purposes. When an undetect is returned from the lab for nitrate analyses, then half the detection limit is used for calculation purposes.
- When a sample has a corresponding duplicate or reanalysis ("re-run'), **AND** *neither* result is greater than the Standard, **THEN** the value used in calculations is the arithmetic average of the two values.
- When a sample has a corresponding duplicate or reanalysis ("re-run'), **AND** *either* result is greater than the Standard, **THEN** an evaluation of the data pair is performed to determine the representativeness of the sample result.[3] The method for determining representativeness is as follows:

[3] Significant differences in values for a data pair are an indication of potential problems with sample preparation and/or analysis. Under these circumstances, an applicable value to be used for the calculation of 30-day averages can not be determined with sufficient confidence to make compliance decisions. As such, a evaluation is required to assess the representativeness of the sample and it's usability for compliance decisions.

1a. The Relative Percent Difference (RPD) for the nitrate data pair is calculated.

$$RPD(\%) = \frac{|R_1 - R_2|}{(R_1 + R_2)/2} * 100$$

where (Equation B−4)

$R_1 = value\ of\ initial\ result$

$R_2 = value\ of\ duplicate\ result$

1b. The Duplicate Error Ratio (DER) for the radionuclide data pair is calculated.

$$DER = \frac{|R_1 - R_2|}{\sqrt{(2\sigma_{R1})^2 + (2\sigma_{R2})^2}}$$

where (Equation B−5)

$R_1 = value\ of\ initial\ result$

$R_2 = value\ of\ duplicate\ result$

$2\sigma_{R1} = 2\ sigma\ error\ of\ initial\ result$

$2\sigma_{R2} = 2\ sigma\ error\ of\ duplicate\ result$

2a**.** **IF** the RPD is greater than or equal to 100 percent ([higher result] >= 3× [lower result]), **THEN** the results will be determined to be non-representative. The results will not be used for the calculation of 12-month rolling averages, and no 12-month rolling average values will be computed for the days during which the sample was collected.

2b**.** **IF** the RPD is less than 100 percent ([higher result] < 3× [lower result]), **THEN** the results will be determined to be sufficiently representative. The arithmetic average of the two results will be used for the calculation of 12-month rolling average values.

2c. **IF** the DER is greater than or equal to 1.5, **THEN** the radionuclide results will be determined to be non-representative. The results will not be used for the calculation of 12-month rolling averages, and no 12-month rolling average values will be computed for the days during which the sample was collected.

2d**.** **IF** the DER is less than 1.5, **THEN** the radionuclide results will be determined to be sufficiently representative. The arithmetic average of the two results will be used for the calculation of 12-month rolling average values.

- Each calendar day is assigned the activity or concentration (analytical result in pCi/L or mg/L) of the composite sample that was filling at the end of that day (specifically, at 23:59:59).
- Each calendar day has an associated surface-water volume (liters) that was measured by the flow meter. Flow record may contain estimated values for certain conditions.[4]
- The daily surface-water volume is then multiplied by the corresponding activity to calculate a load (in pCi or mg) for each day.

[4] Estimation is required when flow rates exceed the capacity of the flow-control structure (e.g., a flume), winter ice conditions result in an inaccurate measurement, or there is an equipment failure.

- The sum of the daily loads (pCi or mg) for the preceding 365 calendar-days (with both flow and an analytical result) is divided by the sum of the daily surface-water volumes (liters) for the preceding 365 calendar-days to calculate the 12-month rolling average (pCi/L or mg/L). The equation can be given as follows:

$$\frac{\sum_{day=0}^{day=-364}[pCi\ or\ mg]}{\sum_{day=0}^{day=-364}[liters]} = Rolling\ 12-Month\ Average_{day=0}[pCi/L\ or\ mg/L] \qquad \text{(Equation B−6)}$$

where day = 0 is the last day of each month

- The 12-month rolling average values are then rounded to 2 significant figures. No rounding occurs with the measured input numbers prior to calculation of the rolling 12-month averages. Only the final calculated value is rounded. For example, a calculated value of 0.124 pCi/L would be rounded to 0.12 pCi/L. Similarly, a value of 0.246 pCi/L would be rounded to 0.25 pCi/L.
- These 12-month rolling averages are then compared to the appropriate Standards and reported according to the requirements of the RFLMA.

B.1.3 Volume-Weighted Averages for Various Time Periods (Periodic Averages)

The method is as follows:

- The time-period for the volume-weighted average is selected (e.g., monthly, seasonal, annual, period of sampling).
- When a negative radionuclide result (e.g., −0.002 pCi/L) is returned from the lab due to blank correction, then a value of 0.0 pCi/L is used for calculation purposes. When an undetect is returned from the lab for metals or nitrate analyses, then half the detection limit is used for calculation purposes. When a sample has a corresponding field duplicate, the value used in calculations is the arithmetic average of the 'real' value and the 'duplicate'. When a sample has multiple 'real' analyses ('re-runs'), the value used in calculations is the arithmetic average of the multiple 'real' analyses.
- When no analytical result or measured flow value is available for a particular day, then an applicable activity (pCi/L) is estimated based on Pu/Am ratios, recent values on either side of the missing result, the annual volume-weighted average, etc. No analytical result may be available either due to a non-sufficient quantity for analysis (referred to as an NSQ condition) or a failed lab analysis. Flow measurement may be missing due to equipment failures or adverse weather conditions (winter freezing).
- The analytical result (pCi/L, mg/L, or µg/L) for a particular composite sample period[5] is multiplied by the associated flow volume (streamflow in liters) to obtain a load for each composite sample period (pCi, mg, or µg).[6]

[5] When no analytical result is available due to a failed lab analysis or a sample of non-sufficient quantity, the activity for the period of the missing analytical result is estimated. The activity is estimated using the annual or seasonal volume-weighted average or based on the location-specific Pu/Am ratio when only one analyte result is available. The estimation technique is chosen using professional judgment based on location.

[6] When a composite-sample period overlaps the selected time-period for loading, then a proportion of the load for the entire sampling period is calculated based on relative streamflow volume.

- The sum of the individual composite-sampling period loads (for the selected time-period) is calculated in pCi, mg, or µg.
- The sum of the sample-period loads (pCi, mg, or µg) for the selected time-period is divided by the sum of the sample-period surface-water volumes (liters) to calculate the volume-weighted average (pCi/L, mg/L, or µg/L). The equation can be given as follows:

$$\frac{\sum[pCi,\ mg,\ or\ \mu g]}{\sum[liters]} = Periodic\ Average\ [pCi/L,\ mg/L,\ or\ \mu g/L] \qquad \text{(Equation B−6)}$$

B.1.4 Loading Analysis

B.1.4.1 Continuous Flow-Paced Sampling Analytical Results

Load estimation for continuous flow-paced sampling is generally used to evaluate the relative radionuclide loads of tributary monitoring locations and as an estimation of actual loads at specific monitoring locations. The nature of the continuous sampling during all flow conditions allows for more accurate load calculations compared to storm-event sampling. The method is as follows:

- The time-period for loading comparison is selected (e.g., monthly, seasonal, annual).
- When a negative radionuclide result (e.g., −0.002 pCi/L) is returned from the lab due to blank correction, then a value of 0.0 pCi/L is used for calculation purposes. When a sample has a corresponding field duplicate, the value used in calculations is the arithmetic average of the 'real' value and the 'duplicate'. When a sample has multiple 'real' analyses ('re-runs'), the value used in calculations is the arithmetic average of the multiple 'real' analyses.
- When no analytical result or measured flow value is available for a particular day, then an applicable activity (pCi/L) is estimated based on Pu/Am ratios, recent values on either side of the missing result, the annual volume-weighted average, etc. No analytical result may be available either due to a non-sufficient quantity for analysis (referred to as an NSQ condition) or a failed lab analysis. Flow measurement may be missing due to equipment failures or adverse weather conditions (winter freezing).
- The analytical result (pCi/L) for a particular composite sample period[5] is multiplied by the associated flow volume (streamflow in liters) to obtain a load for each composite sample period (pCi).[7]
- The sum of the individual composite-sampling period loads (for the selected time-period) is calculated in pCi.

[7] When a composite-sample period overlaps the selected time-period for loading, then a proportion of the load for the entire sampling period is calculated based on relative streamflow volume.

B.2 SURFACE-WATER SAMPLE COLLECTION METHODS

Location-specific sample collection protocols are detailed in the RFSOG. The telemetry system centrally monitors the status of all automated samplers. Stations determined to have completed composites will be visited for collection, at which time the data from the flow meter will be recorded and downloaded electronically to a lap-top PC to obtain the sampling interval information. Information regarding missed grabs[8], grab sample flow-pacing, and grab sample volume is recorded directly from the sampler to field logbooks.

The composite-sample bottle is removed from the sampler, sealed, and transported to the Site office for preparation, shipment, and tracking.[9] A clean sample container will then be placed in the sampler for the next targeted sample.[10] Since some composite samples will remain in the field filling for as long as a month, samples will be acidified in the container to a pH<2 following collection from the field. The acidified samples will stand for 24 hours to remove any constituents that may have sorbed to the inside surface of the container.[11]

B.2.1 Sample Types

B.2.1.1 Continuous Flow-Paced Composite Samples

Continuous flow-paced composite samples are collected during all flow conditions. Automated samplers collect grab samples year-round at all times. When a composite sample is removed from the sampler for analysis, the next composite sample starts filling immediately, if flow is available. If the location is dry at the initiation of a new composite sample, the flow meter is programmed to trigger sample collection at the next available flow period. A composite sample consists of multiple grab samples[12] that are flow-paced. In other words, one grab sample is deposited in the sample bottle each time a specified volume of stream discharge is measured by the flow meter. Figure B−1 is an example of flow pacing of grab samples every 4,390 cubic feet of stream discharge for a continuous flow-paced sampling event. The chosen flow pace depends on expected stream discharge, the composite volume desired, and the desired composite-sampling period. Details on the method used to determine the desired flow pace are given below (see Flow Pacing of Automated Samplers: Continuous Flow-Paced Composite Samples).

---

[8] Missed grab samples may be caused by equipment malfunction or the freezing of sample intake lines.
[9] Stoller prepares, ships, and tracks all samples according to the applicable Site QA/QC documents.
[10] Stoller is responsible for the cleaning of sample bottles according to Site QA/QC requirements. All locations have dedicated sample bottles to reduce the risk of cross-contamination. Sample bottle cleaning tools are also dedicated. Clean sample bottles waiting for deployment are stored at the Site office.
[11] For analyses which can not be acidified prior to analysis (i.e., TSS), the required volume is removed from the sample bottle prior to acidification.
[12] Current grab sample volume for continuous flow-paced composite samples is 200ml. This volume was chosen to maximize the number of grabs while achieving adequate repeatability. ISCO® samplers have a sample volume repeatability of ±10ml. Therefore, a volume error of ±5 percent can be expected.

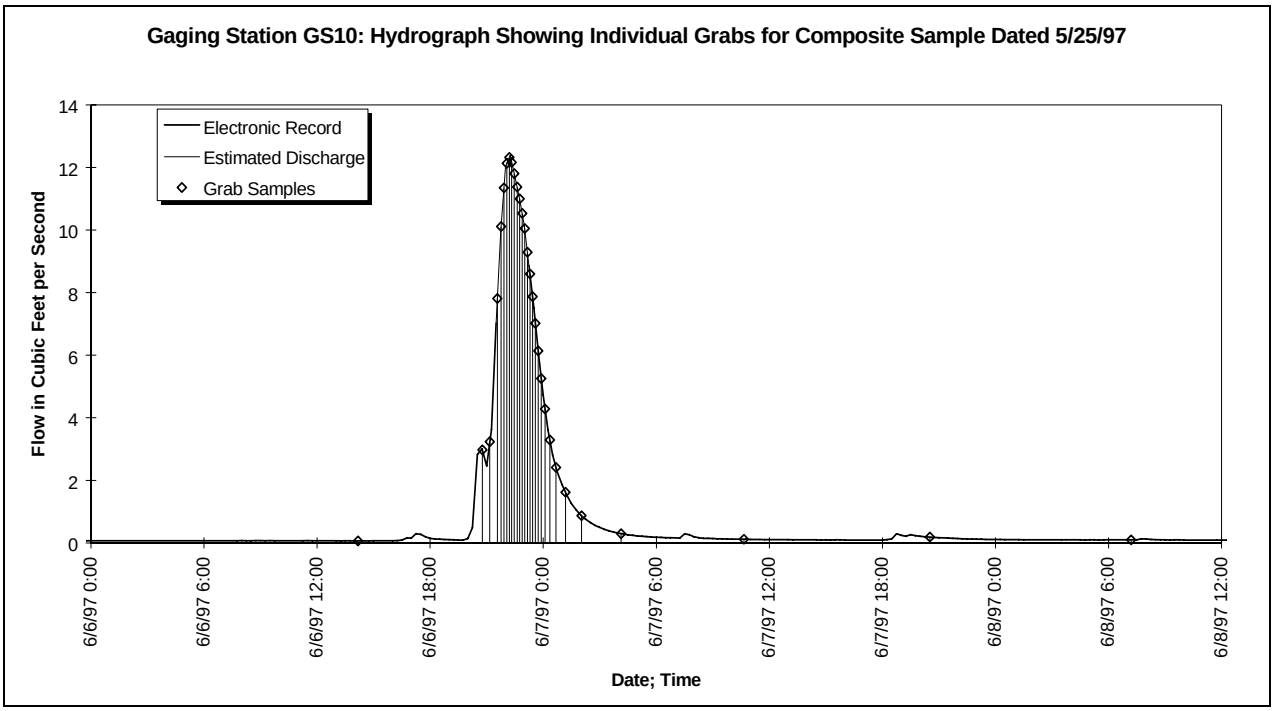

Figure B−1. Example of Hydrograph Showing Continuous Flow-Paced Composite Sampling

Ideally, by flow-pacing composite samples and effectively collecting more frequent grabs during higher flow rates, an analytical result (concentration [e.g., mg/L] or activity [e.g., pCi/L]) that is representative of the entire sampling period is obtained. This result can then be used with the corresponding discharge volume to calculate a constituent load. This sampling protocol is currently utilized at all automated surface-water monitoring locations.

B.2.2 Flow Pacing of Automated Samplers

B.2.2.1 Continuous Flow-Paced Composite Samples

The chosen flow pacing for a composite sample must satisfy the following criteria:

- The composite sample should fill during the specified time-period as determined by the targeted sample collection frequencies.[13]
- The collected sample volume must be adequate such that the location-specific analyses can be completed by the laboratory.[14]

[13] Samples are flow-paced based on average expected discharge rates calculated from historic discharge records. Consequently, samples may fill in periods shorter than the targeted period when flow rates are significantly higher than normal. Similarly, samplers may not fill during the targeted period if flow rates are significantly lower than predicted by historical flow record.

[14] Specific analyses each require some minimum volume of sample for analysis. Therefore, the minimum required sample volume depends on the location-specific analyte suite.

The following steps are used to determine the appropriate flow pace for a continuously collected composite sample.

1. The location-specific targeted time-period for the composite sample must be known.
2. For example, four composite samples are targeted for the month of May at GS10.
3. The expected discharge volume for the targeted time-period must then be calculated using historic flow record.[15] For locations without any historic flow record, professional judgment, estimations related to basin size, and/or record at upstream/downstream locations are used to determine expected discharge volumes.
4. For example, at GS10 the expected discharge volume for May is 5.48 Mgals. In order to collect four composite samples for the month, one composite sample is collected for every 1.37 Mgals.
5. The targeted number of 200 mL grab samples for the composite sample is then determined. The targeted number of grabs is set using professional judgment to collect a volume between the minimum required sample volume[14], and the maximum volume which can be contained in the sample bottle.[16] This allows for variation in total measured discharge (from the expected discharge based on historic record), while still collecting the composite sample in the targeted time-period.
6. For example, at GS10 the composite sample bottles can contain a maximum of 22 liters, and the minimum required sample volume for analysis is 7.0 liters. Consequently, the sampler at GS10 is normally programmed to collect sixty 200 mL grab samples for a targeted composite sample volume of 12 liters.
7. The expected discharge volume is then divided by the targeted number of grab samples to obtain a discharge volume per grab sample. This is the flow pace for the composite sample.

   Continuing the GS10 example, collecting 60 grab samples for a stream discharge of 1.37 Mgals gives a flow pace of 22,833 gallons per grab sample.

[15] The expected discharge volume is the historic average volume. All available flow record after October 1, 1992, is used (data prior to October 1, 1992, is considered less reliable). The actual period of record depends on monitoring location. Professional judgment is used appropriately pace samplers for post-Closure hydrologic conditions.
[16] The Site currently employs 15- and 22-liter composite bottles (carboys).

B.3 Results of Statistical Assessments of Water-Quality Data

This appendix includes statistical output generated by the commercially-available software program, Sanitas™ (Sanitas Technologies 2009). (Note: This report does not recommend the use of any specific software; this information is merely provided for completeness.) Statistical assessments are directed by the *Rocky Flats Legacy Management Agreement* (DOE 2007d).

Statistical output is provided herein for Sentinel and RCRA well classes, plus selected AOC analytes and wells. The statistical methods employed include trending calculations and comparison of upgradient and downgradient concentrations. Trending calculations utilize the Seasonal-Kendall (S-K) method, which has been determined (K-H 2004d) to be most appropriate for groundwater at the Rocky Flats Site. Comparisons of upgradient and downgradient water quality were performed using ANOVA methods; only the RCRA wells received this treatment. See the body of the Annual Report for additional discussion.

Graphical representations of S-K trends that were calculated to meet a level of significance of at least 80 percent are included for those wells so evaluated, except for the selected AOC well data (which are shown regardless of statistical significance, as the objective in performing these AOC trending calculations was to present fundamental information; see report text). Summary ANOVA reports are provided to describe the results of the statistical comparisons of upgradient vs. downgradient water quality in RCRA wells at the two landfills.

Refer to the body of this Annual Report for discussion of trends and groundwater quality in the various areas of interest.

B.3.1 Seasonal-Kendall Trend Plots and Summary Tables

B.3.1.1 Sentinel Wells

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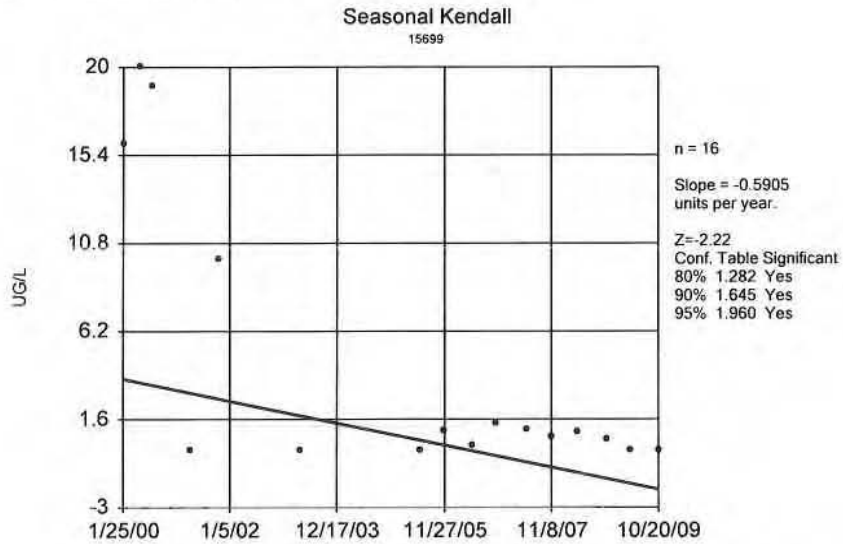

Constituent: 1,1,1-TRICHLOROETHANE Analysis Run 3/2/2010 6:25 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

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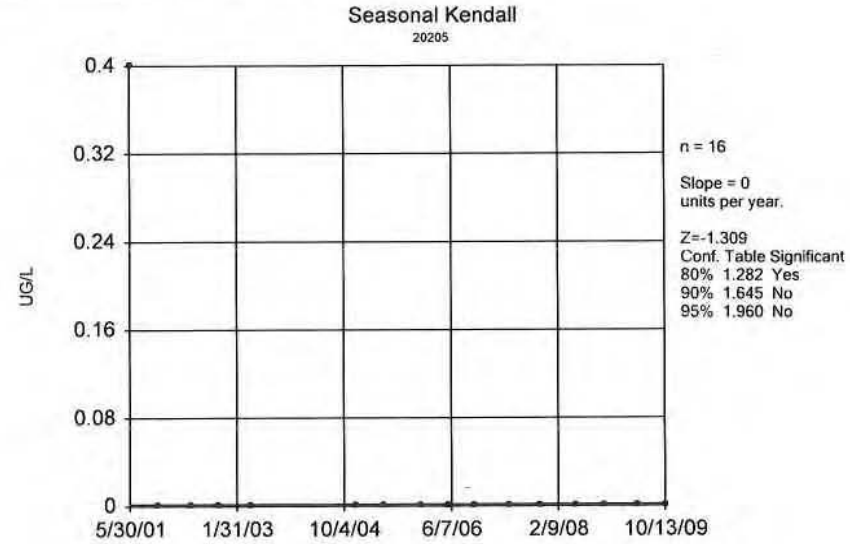

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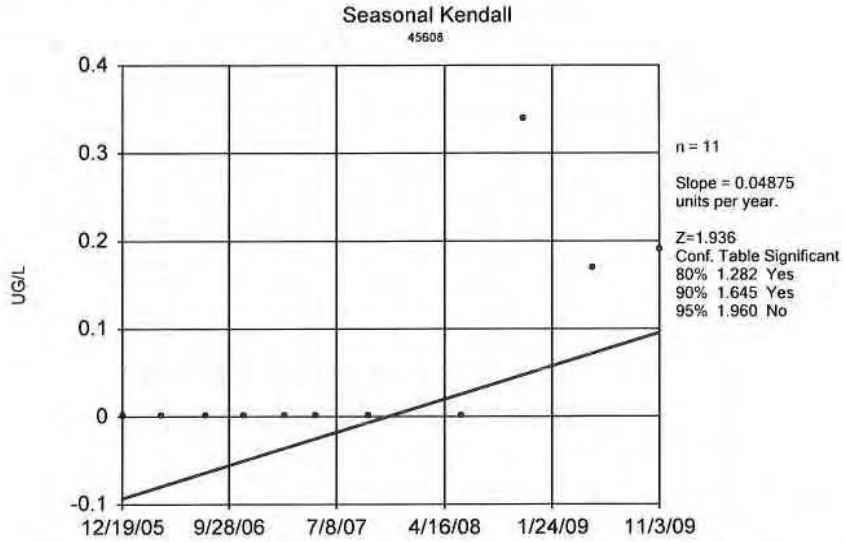

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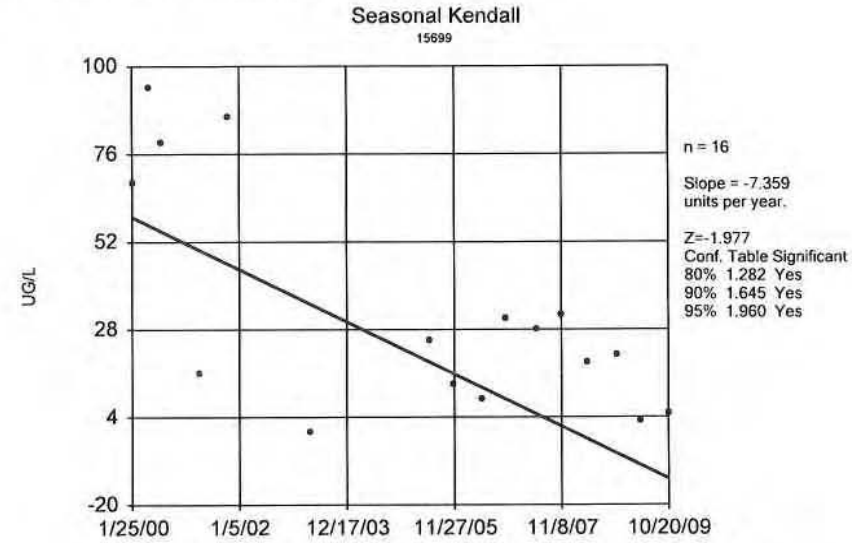

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Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

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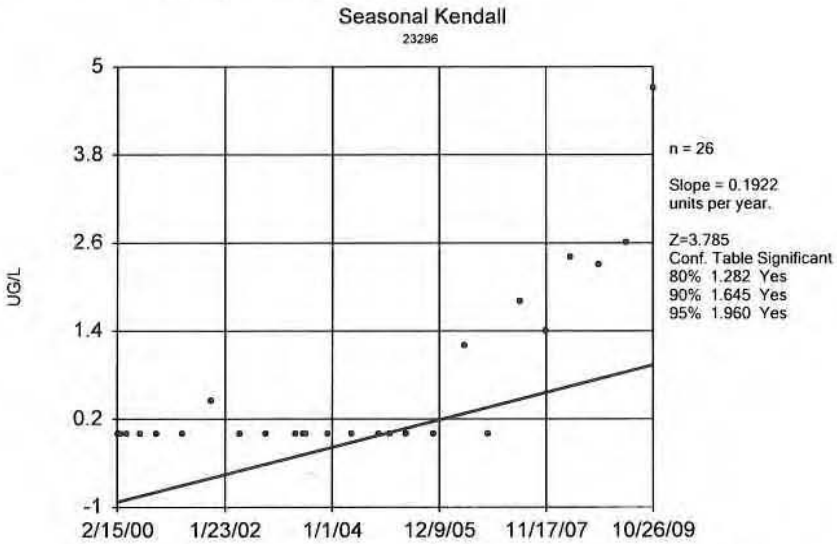
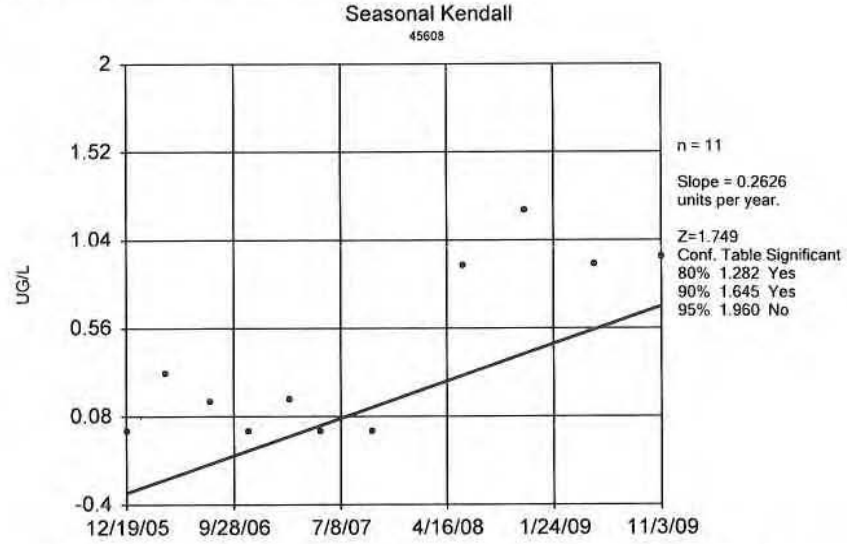


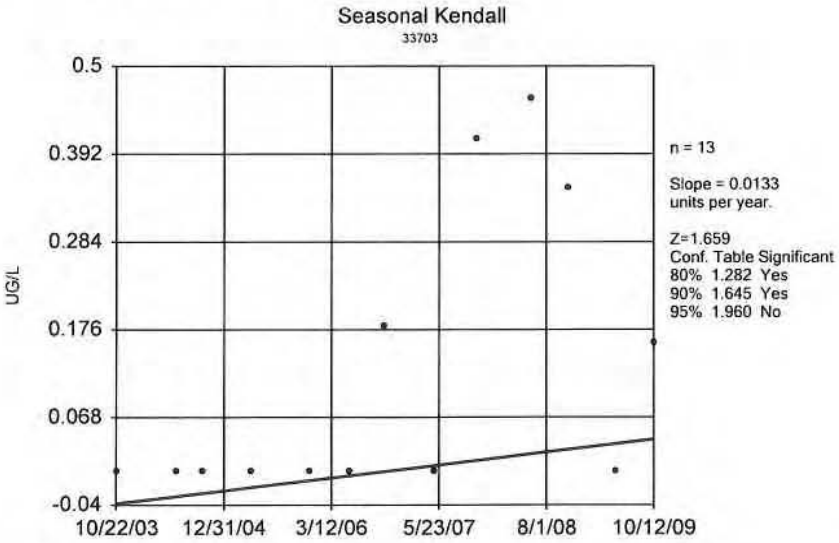
Constituent: 1,1-DICHLOROETHENE Analysis Run 3/2/2010 6:26 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: 1,1-DICHLOROETHENE Analysis Run 3/2/2010 6:26 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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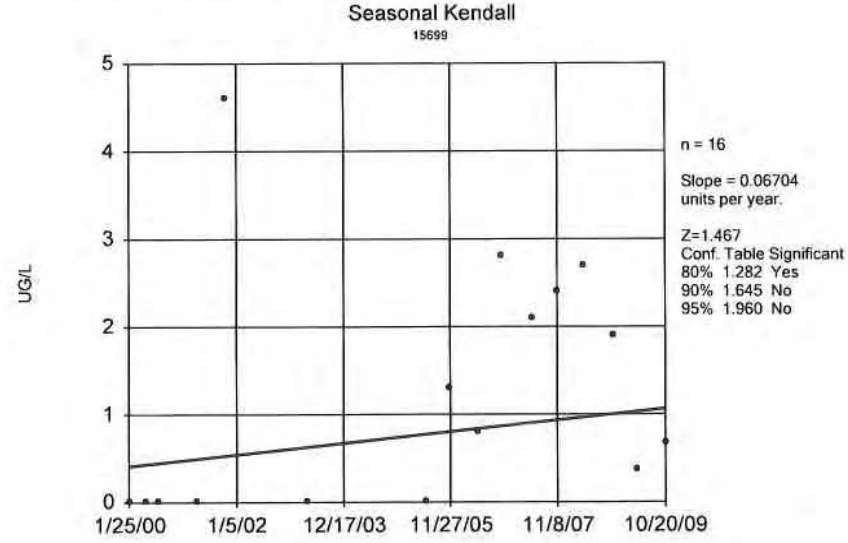
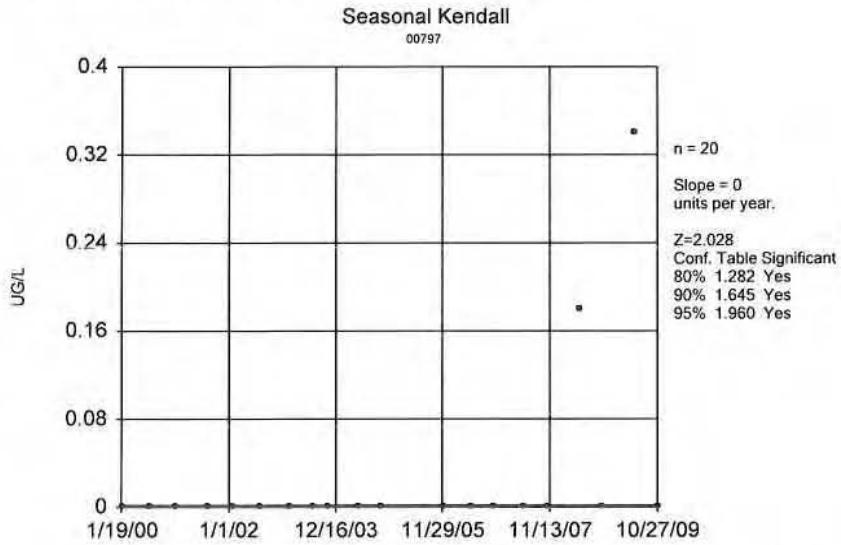
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



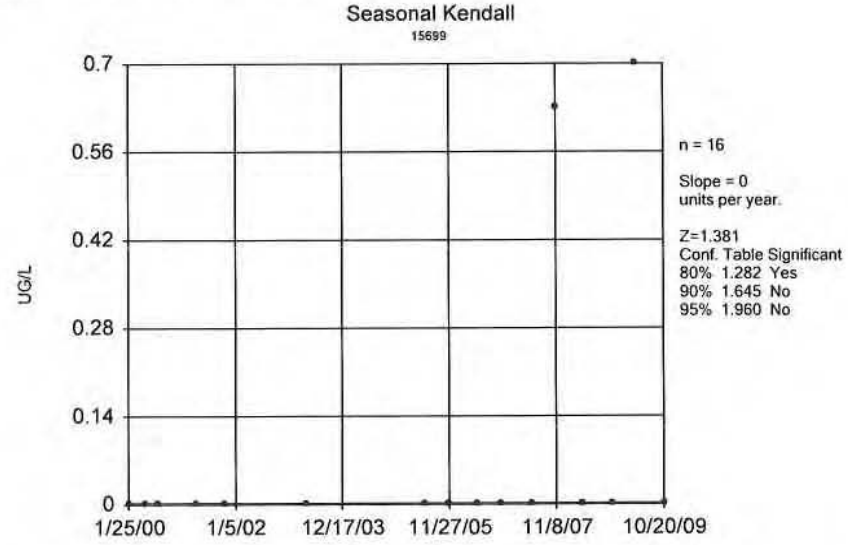
Constituent: 1,2-DICHLOROETHANE Analysis Run 3/2/2010 6:29 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: 1,3-DICHLOROBENZENE Analysis Run 3/2/2010 6:30 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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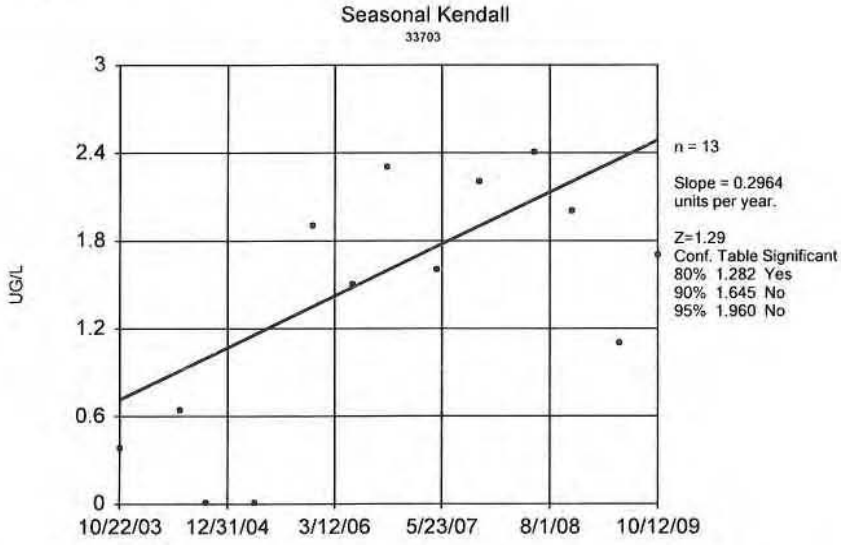
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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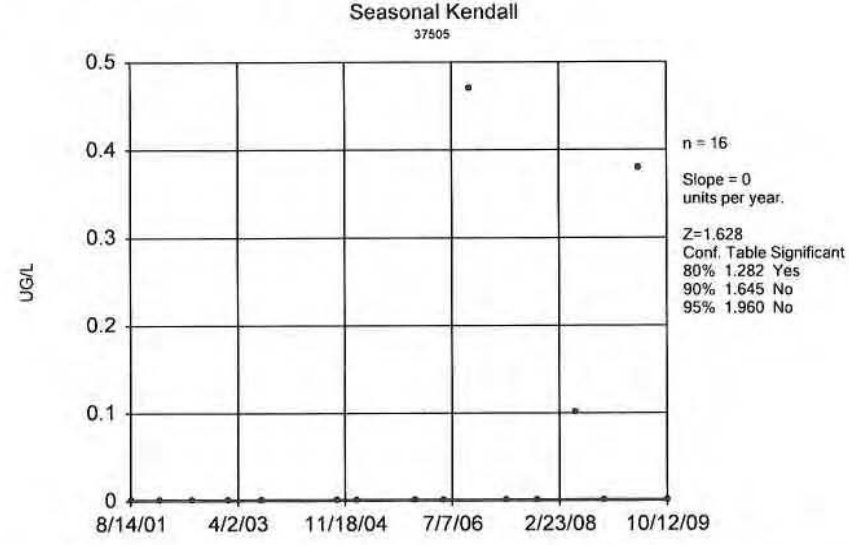
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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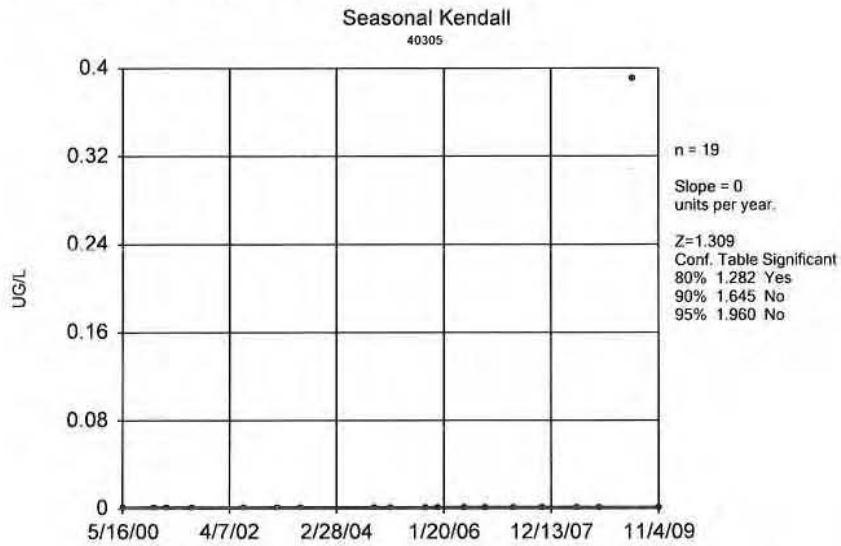
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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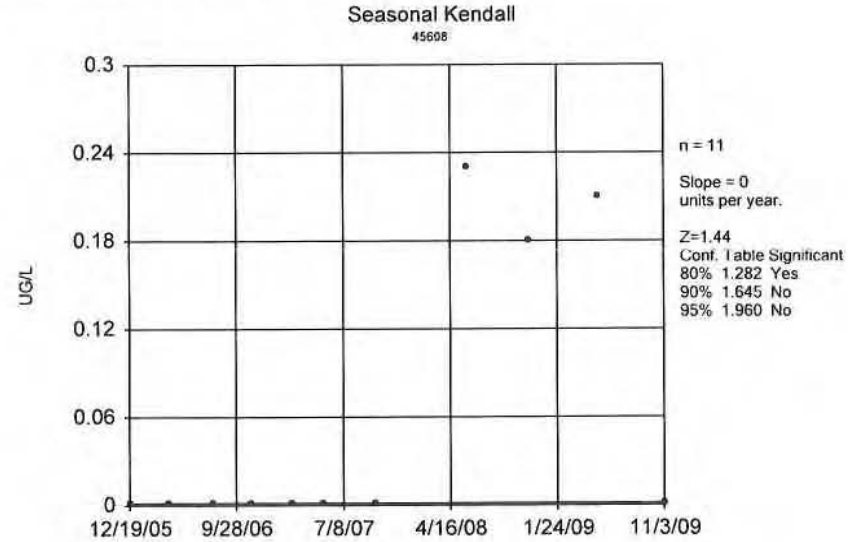
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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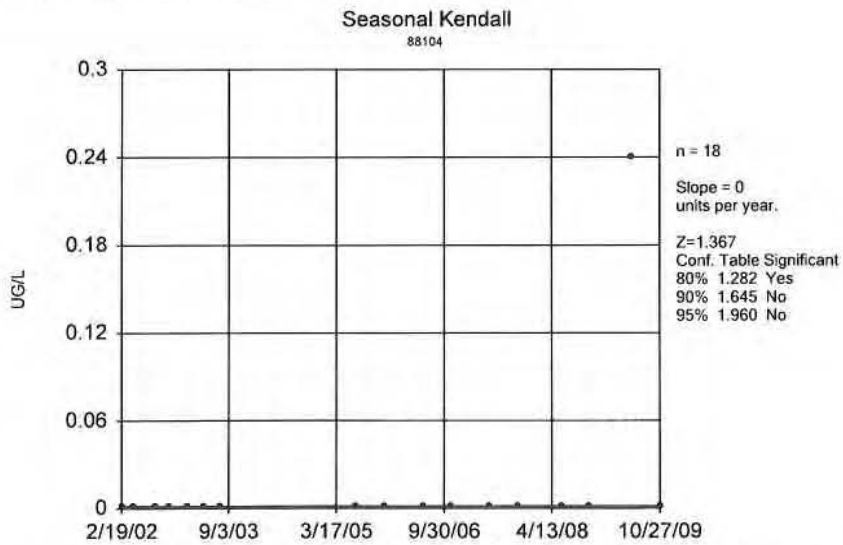
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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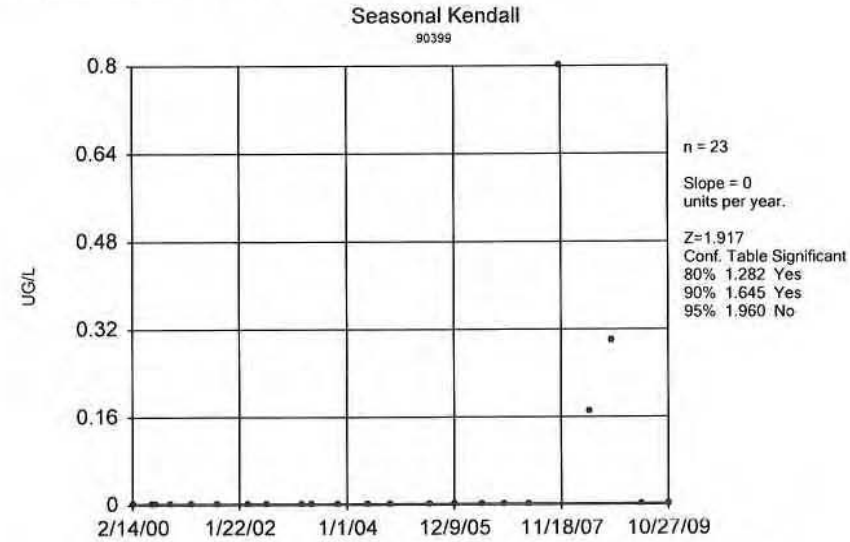
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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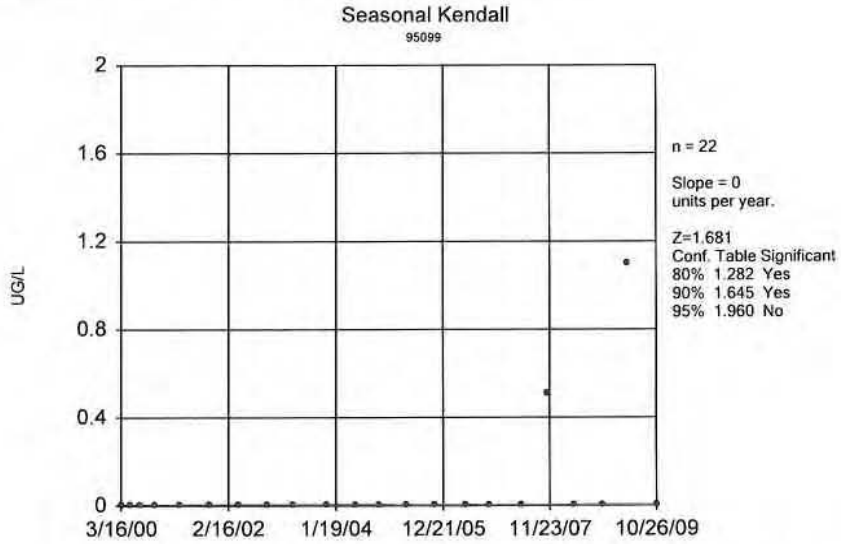
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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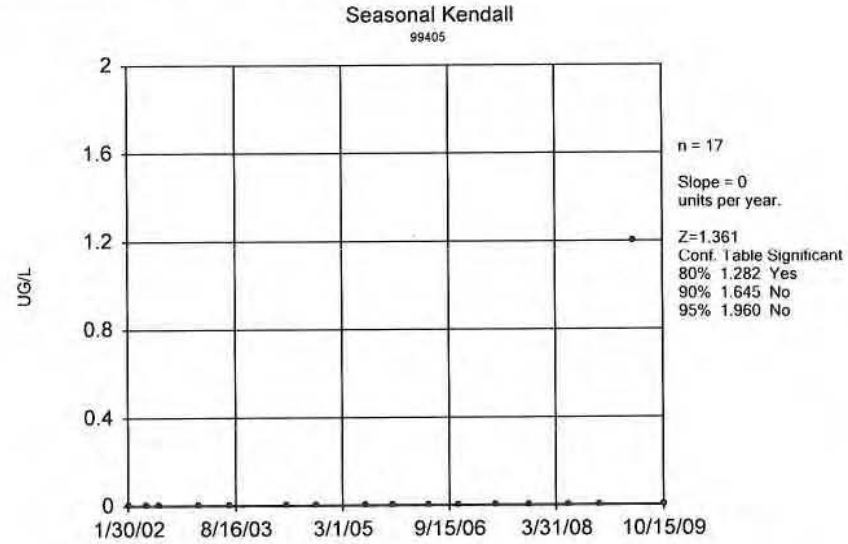
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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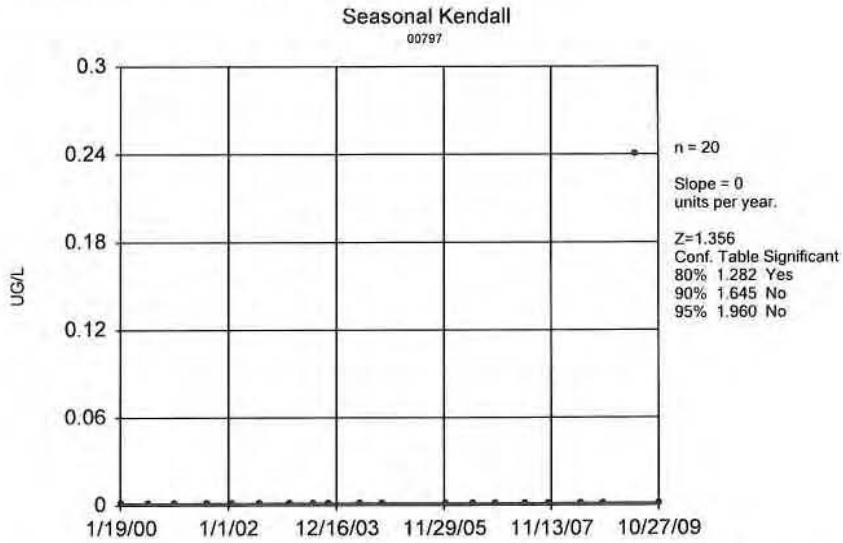
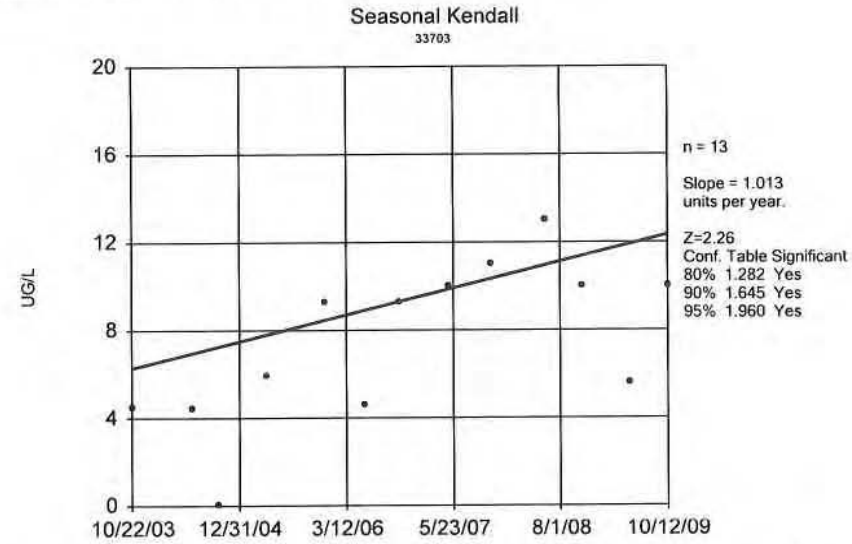
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



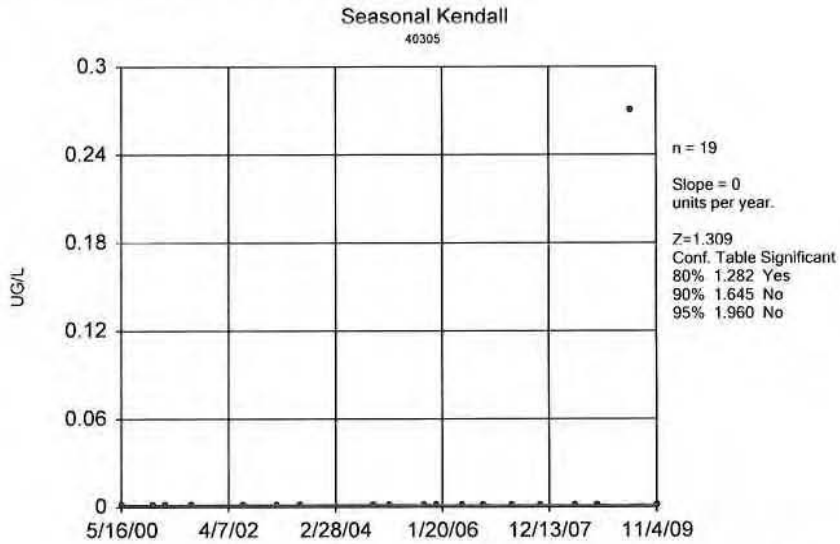
Constituent: 1,4-DICHLOROBENZENE Analysis Run 3/2/2010 6:30 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



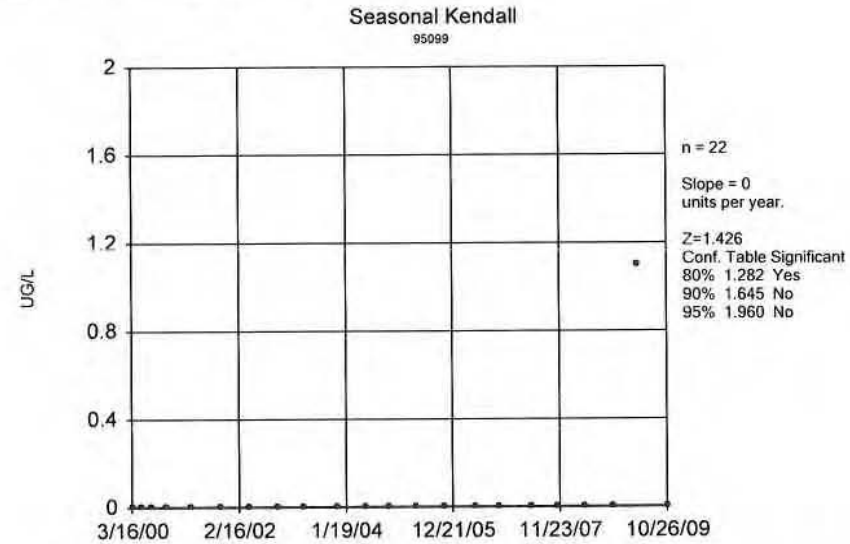
Constituent: 1,4-DICHLOROBENZENE Analysis Run 3/2/2010 6:30 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: 1,4-DICHLOROBENZENE Analysis Run 3/2/2010 6:31 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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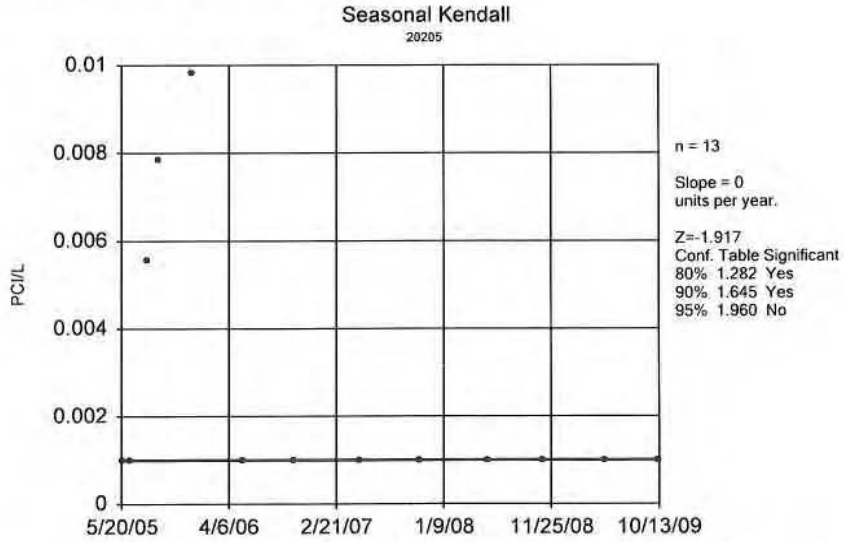
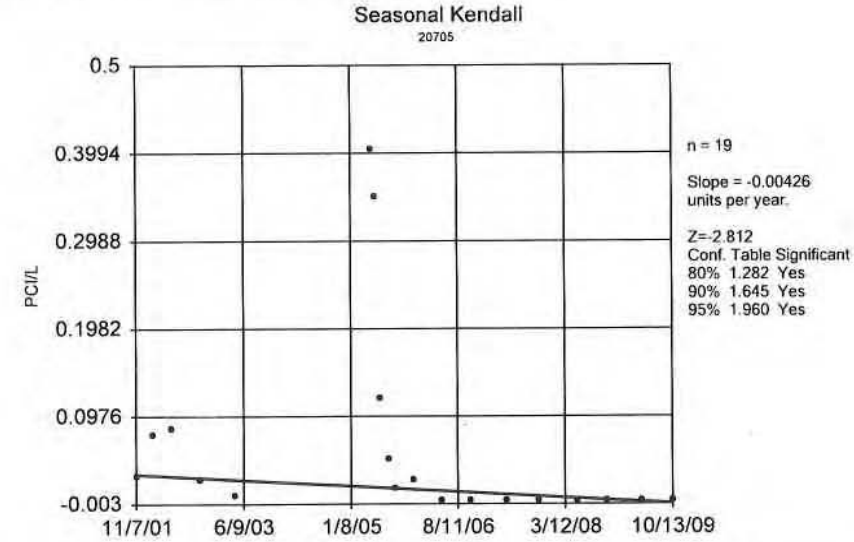
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: AMERICIUM-241 Analysis Run 3/2/2010 6:31 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: AMERICIUM-241 Analysis Run 3/2/2010 6:31 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

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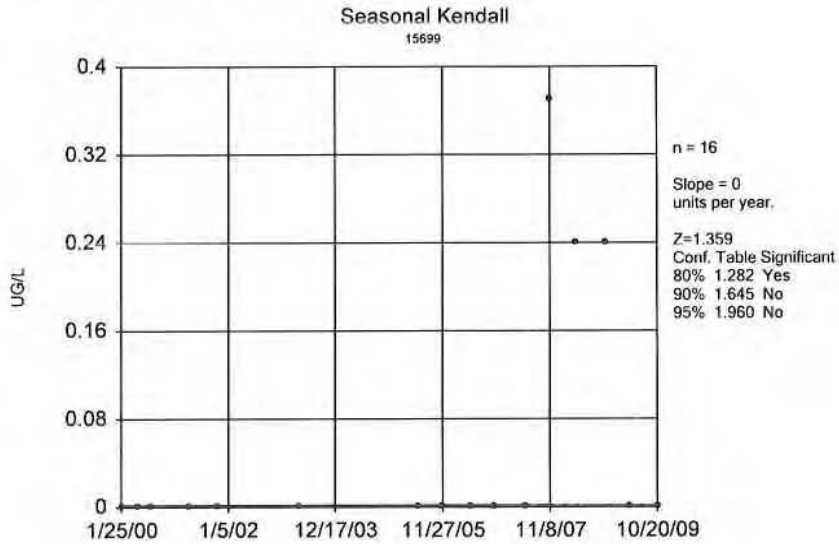
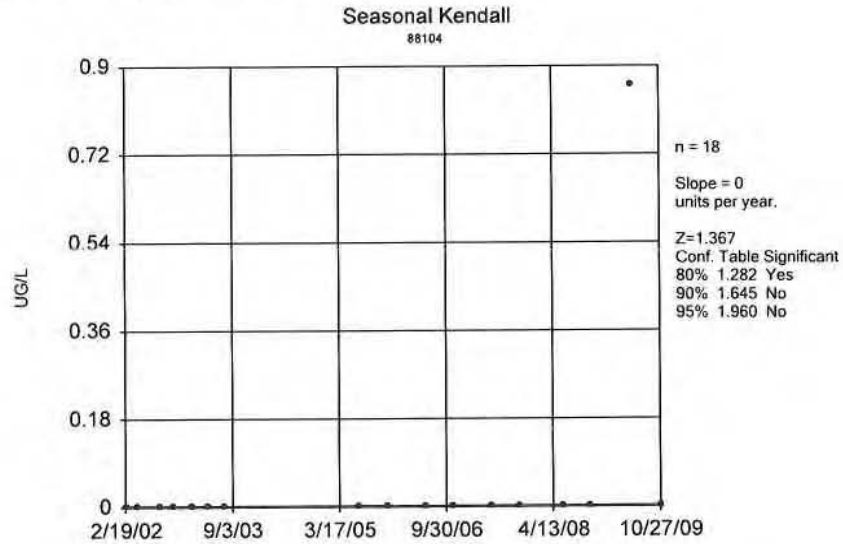


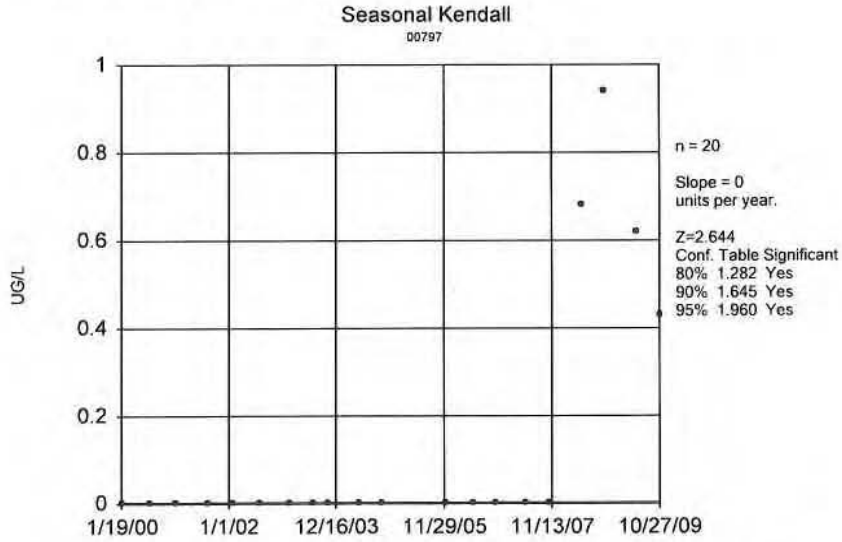
Constituent: BENZENE Analysis Run 3/2/2010 6:31 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



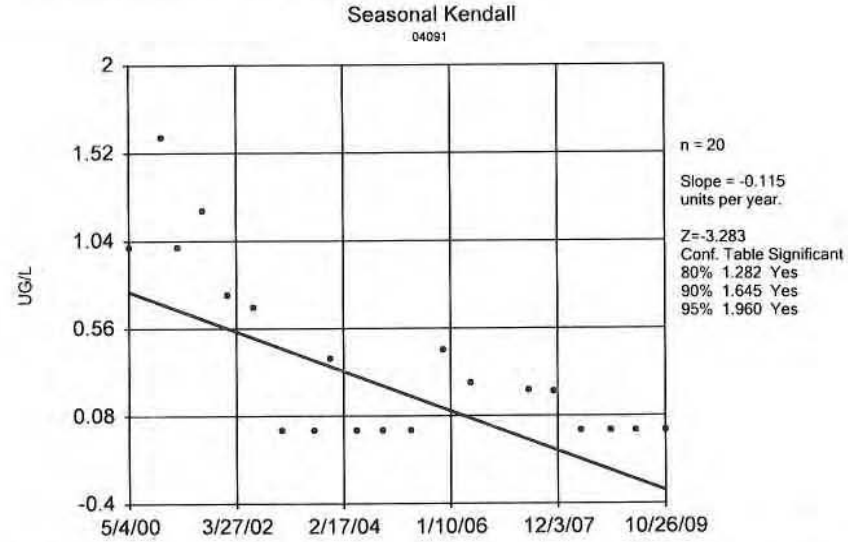
Constituent: BROMOFORM Analysis Run 3/2/2010 6:32 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: CARBON TETRACHLORIDE Analysis Run 3/2/2010 6:33 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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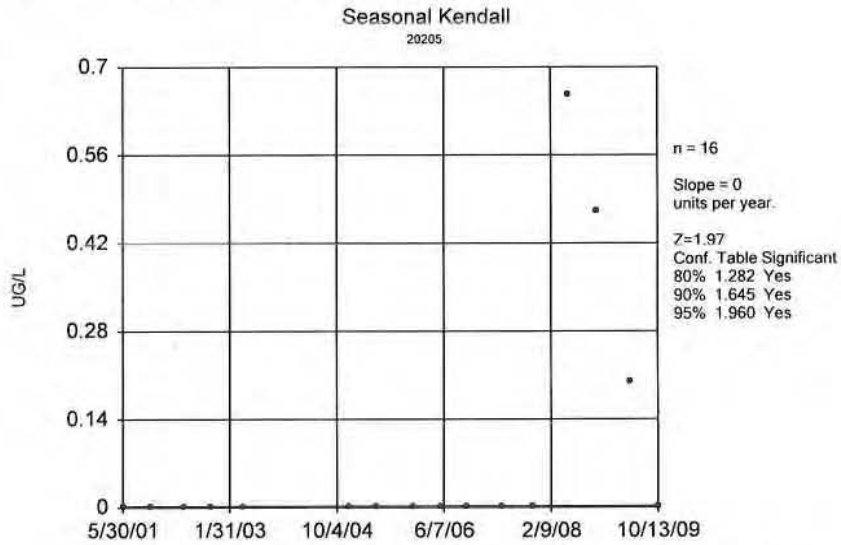
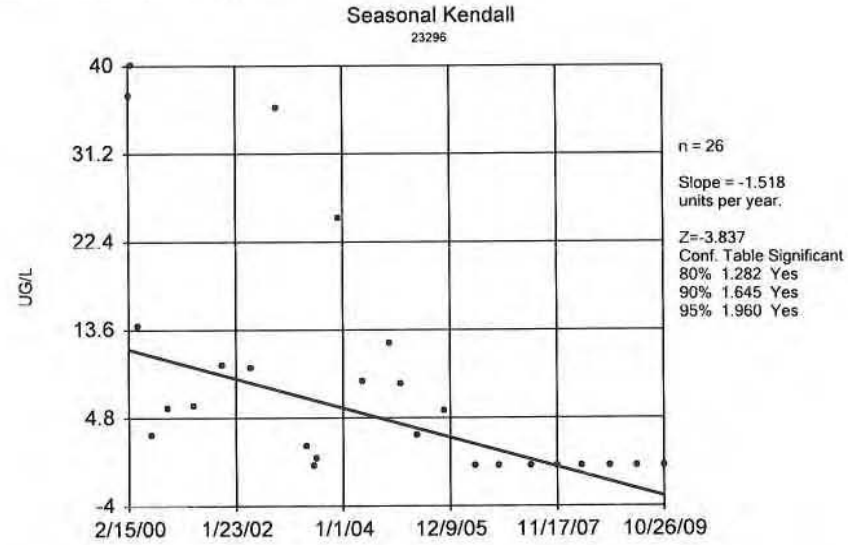
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



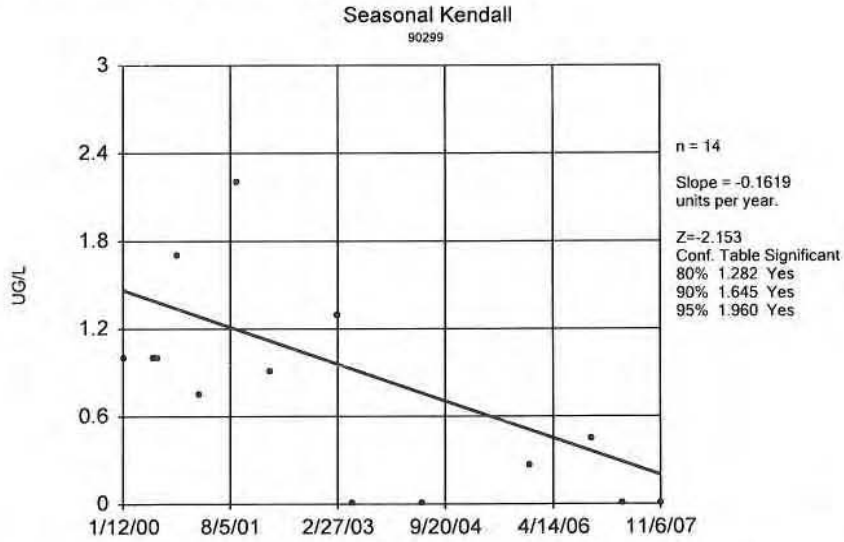
Constituent: CARBON TETRACHLORIDE Analysis Run 3/2/2010 6:33 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: CARBON TETRACHLORIDE Analysis Run 3/2/2010 6:33 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: CARBON TETRACHLORIDE Analysis Run 3/2/2010 6:33 PM
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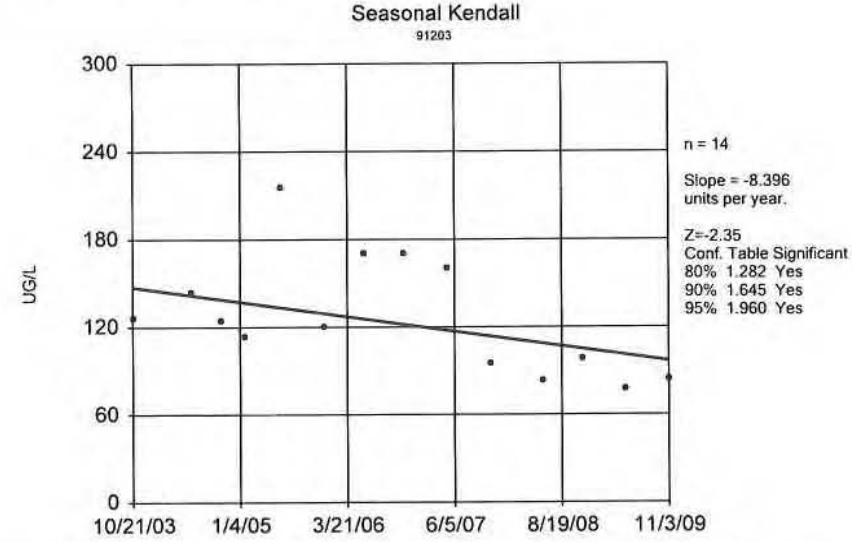

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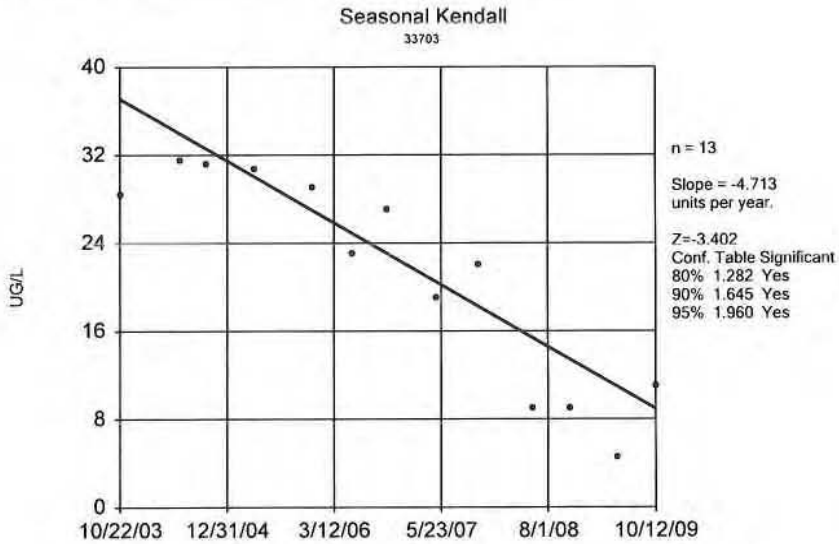
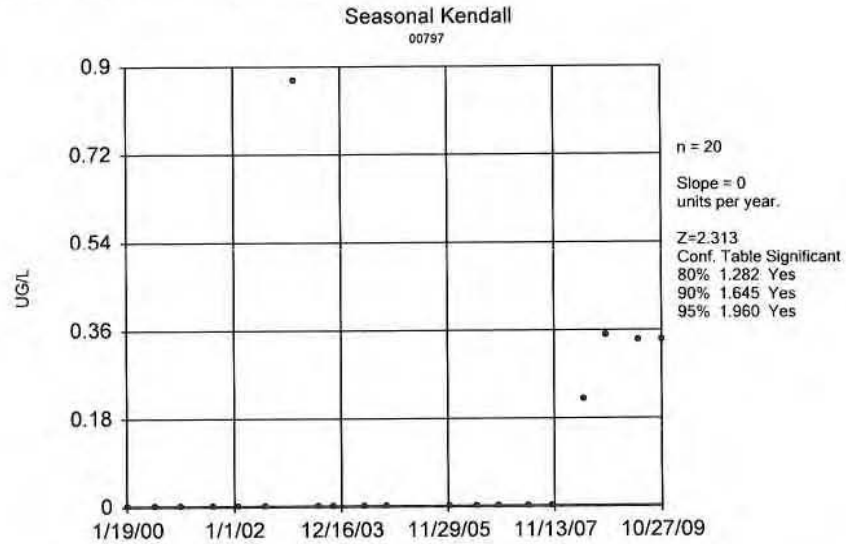
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: CHLOROBENZENE Analysis Run 3/2/2010 6:34 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: CHLOROFORM Analysis Run 3/2/2010 6:35 PM
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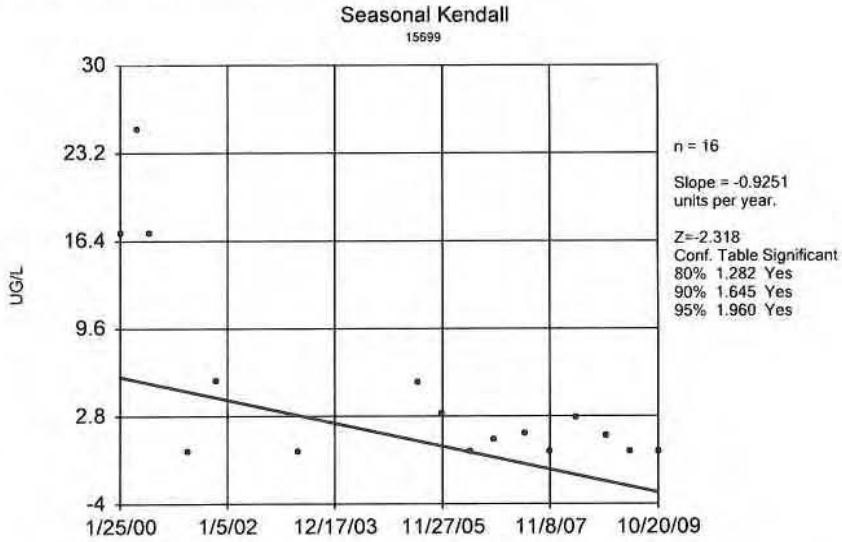
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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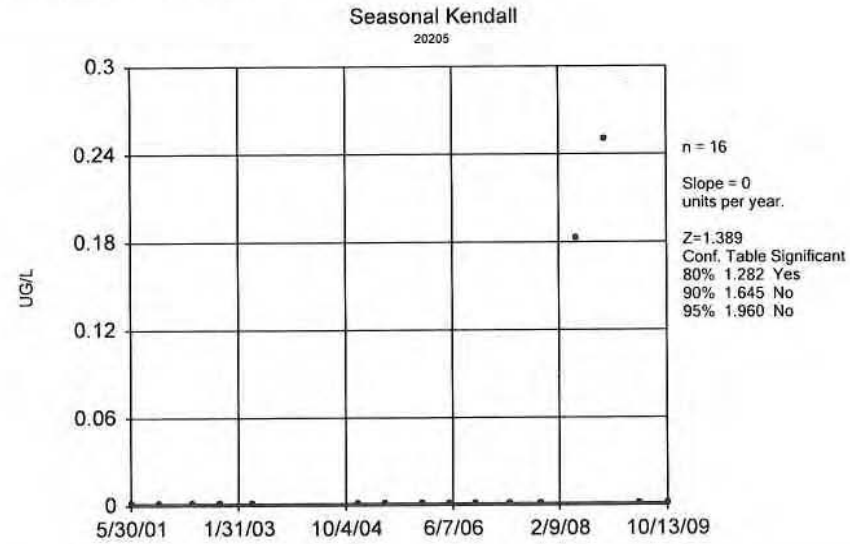

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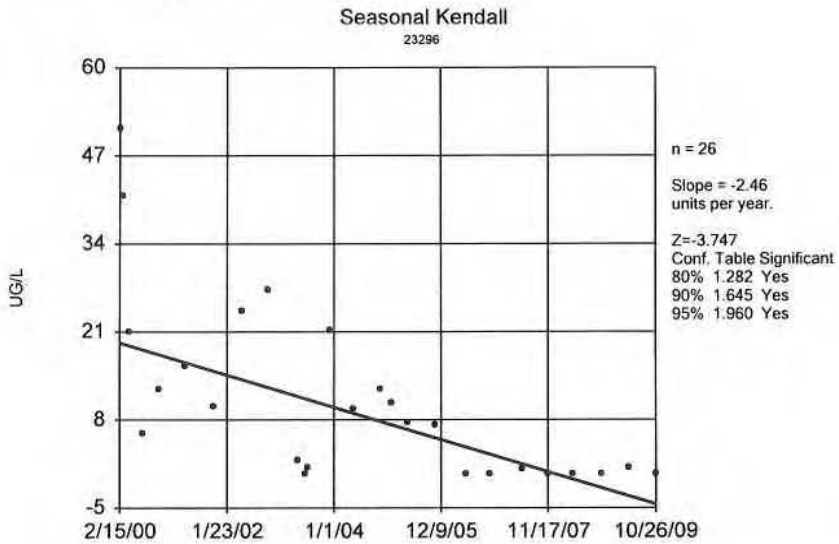

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Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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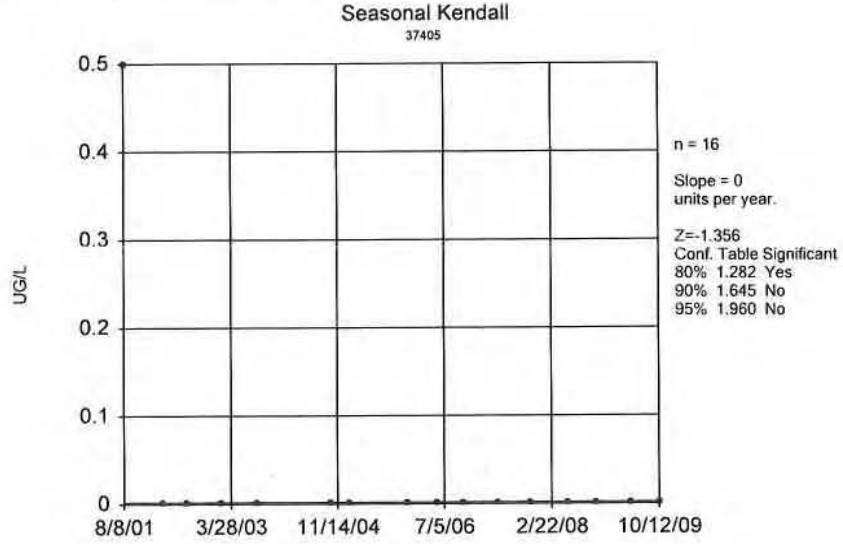

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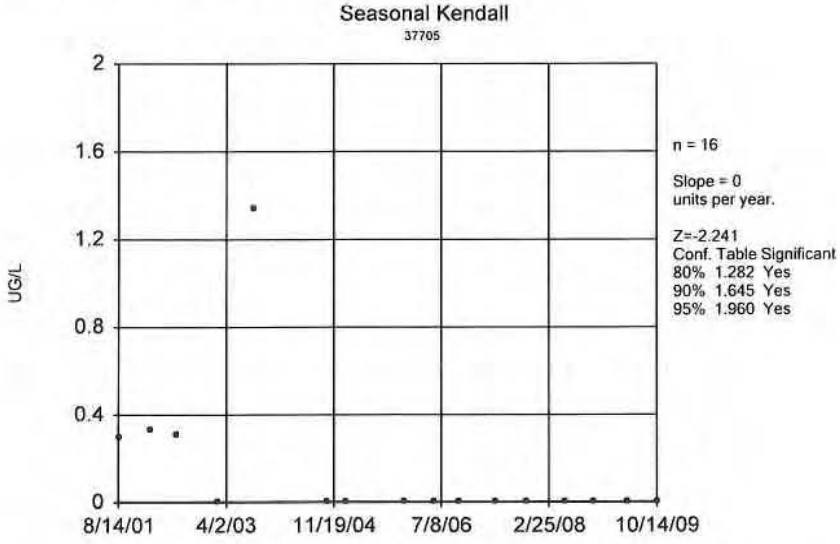

Constituent: CHLOROFORM Analysis Run 3/2/2010 6:35 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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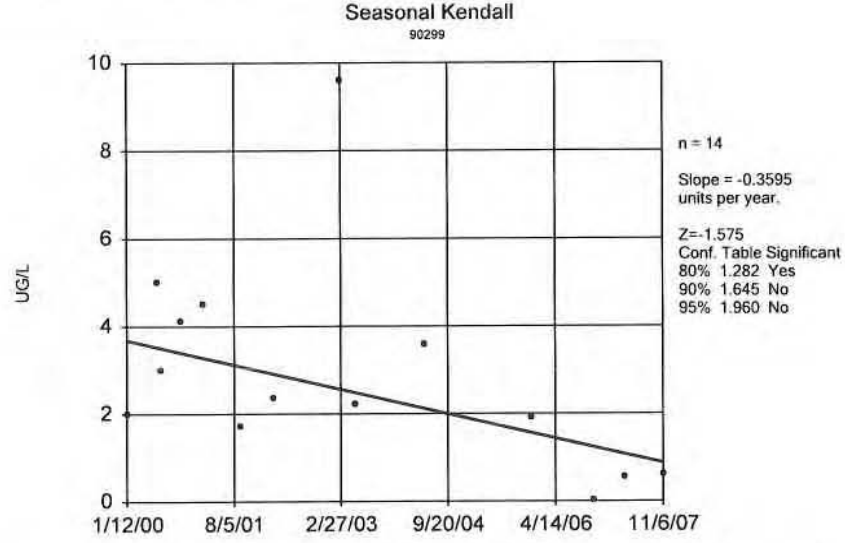

Constituent: CHLOROFORM Analysis Run 3/2/2010 6:35 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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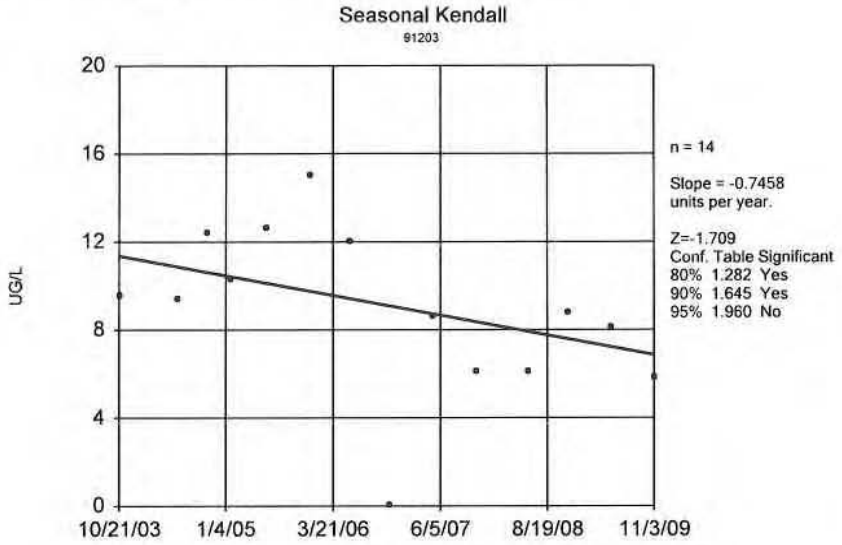

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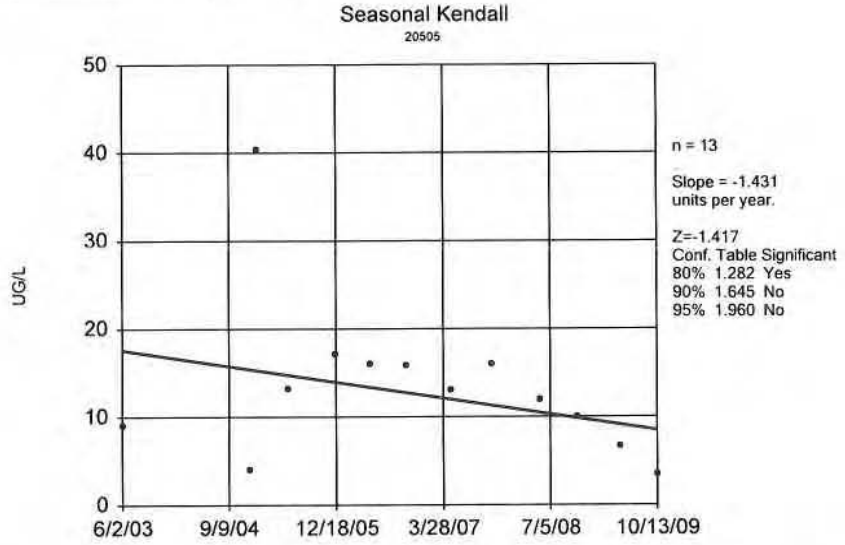
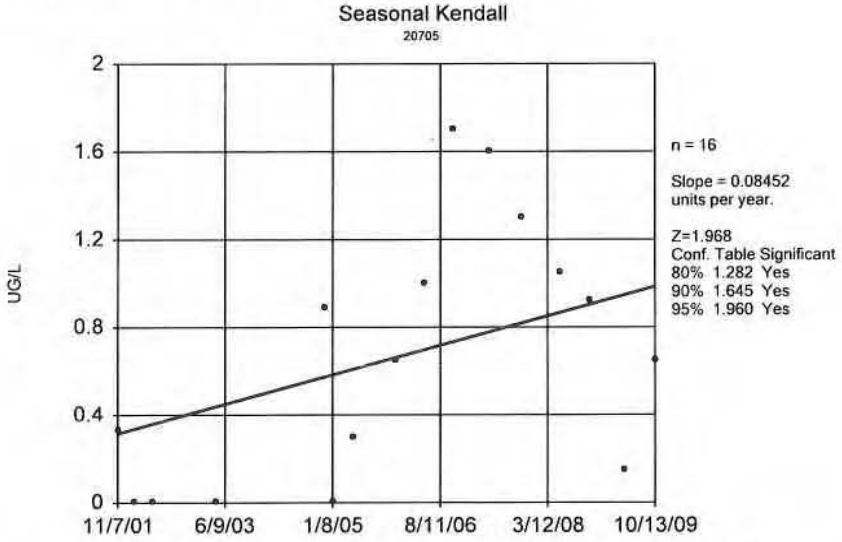


Constituent: cis-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:36 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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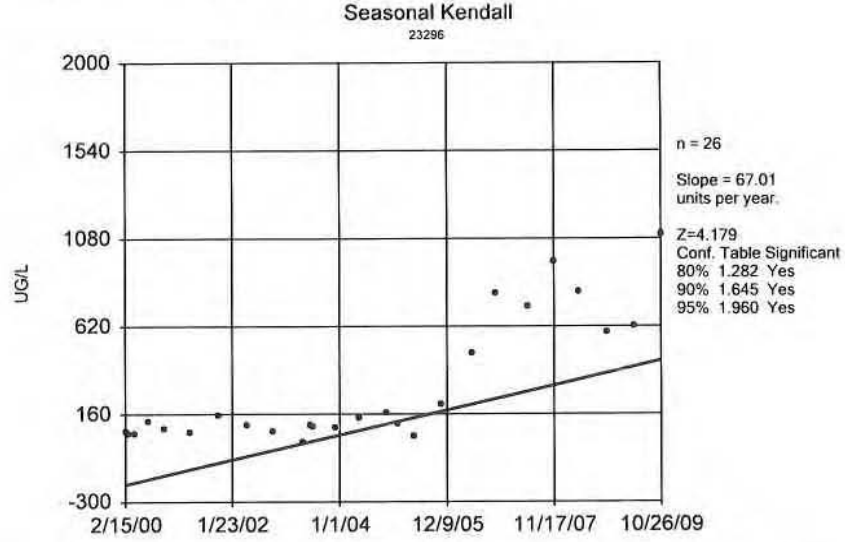
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



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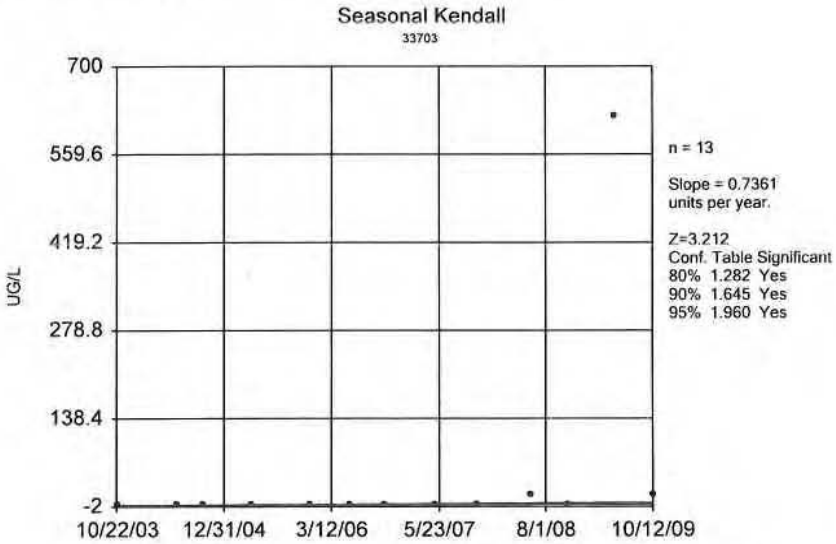
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: cis-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:36 PM
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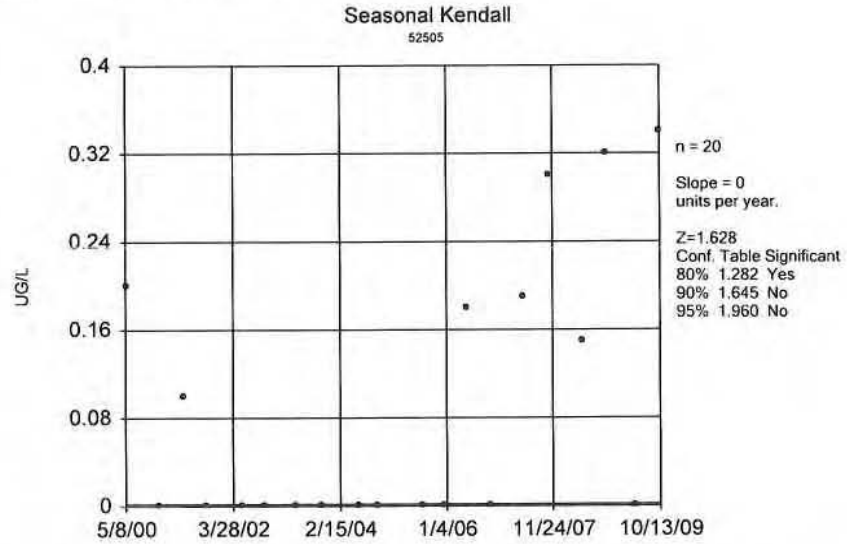

Constituent: cis-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:36 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

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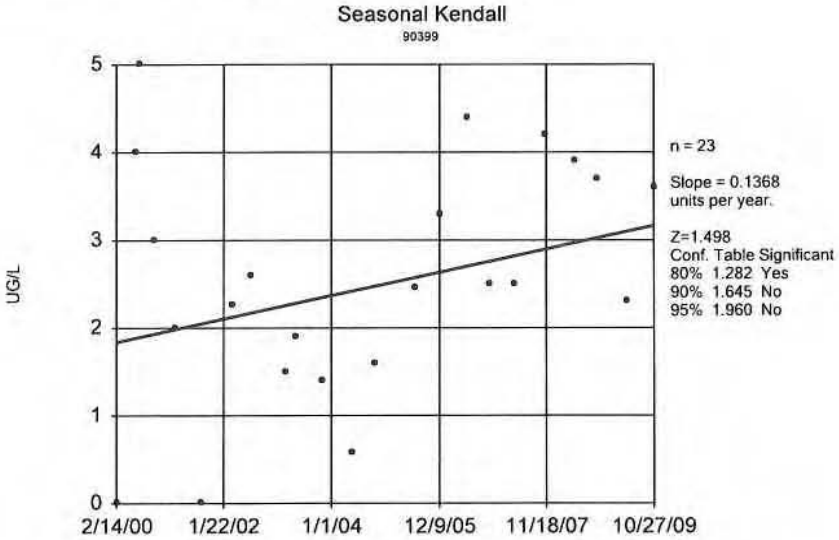
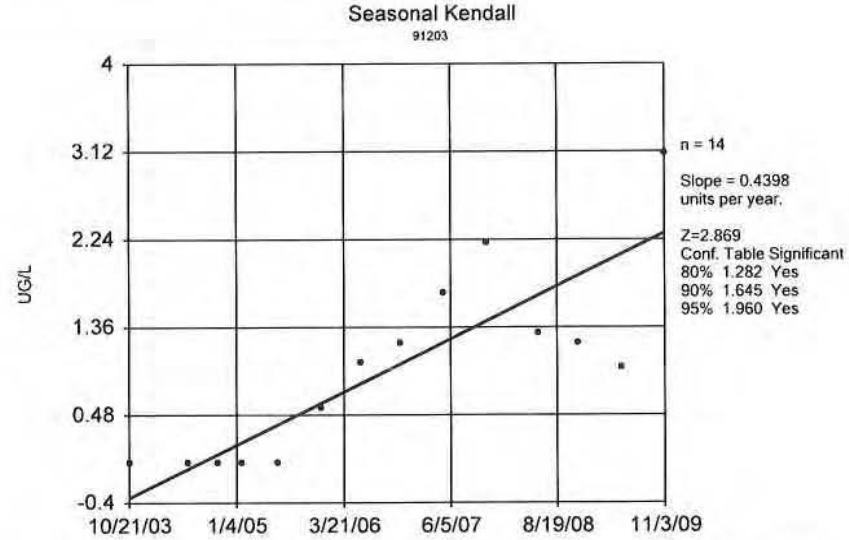


Constituent: cis-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:36 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: cis-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:36 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

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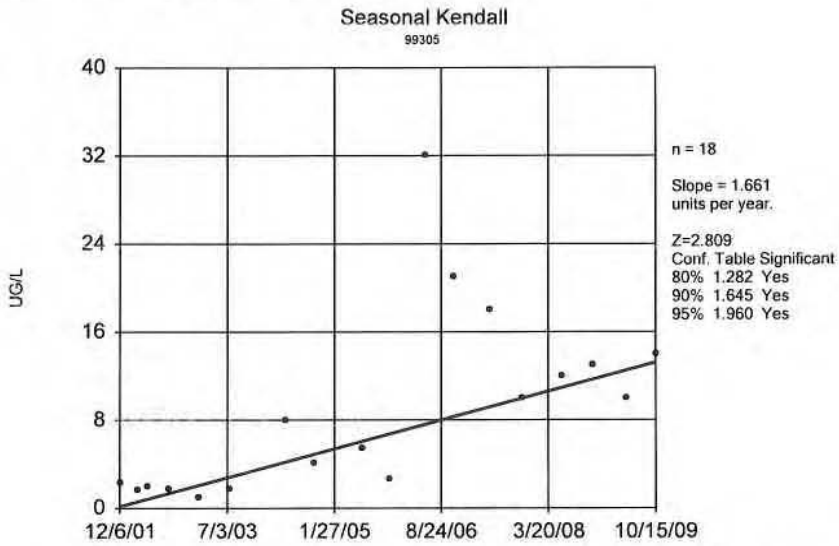

Constituent: cis-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:36 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

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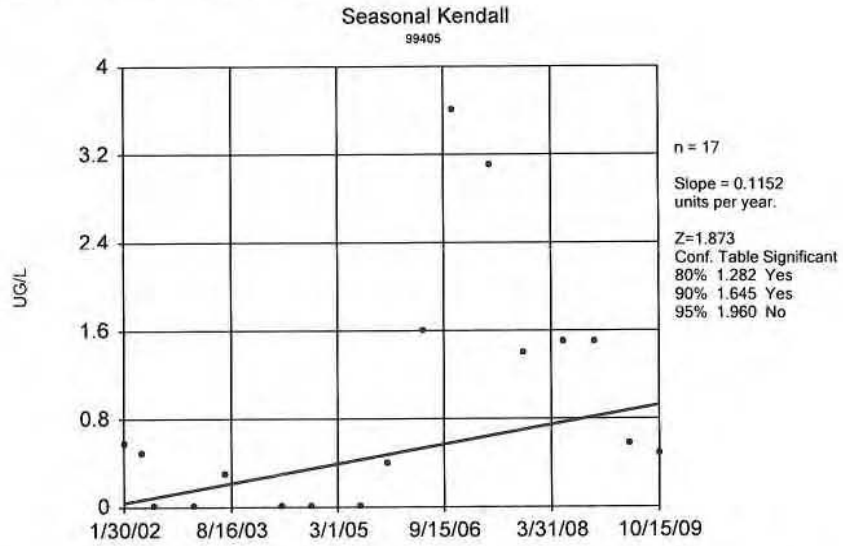
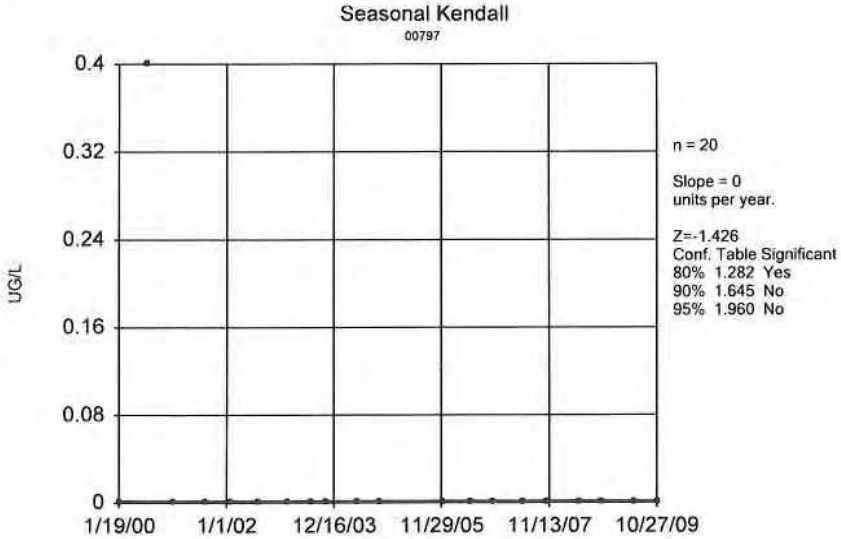


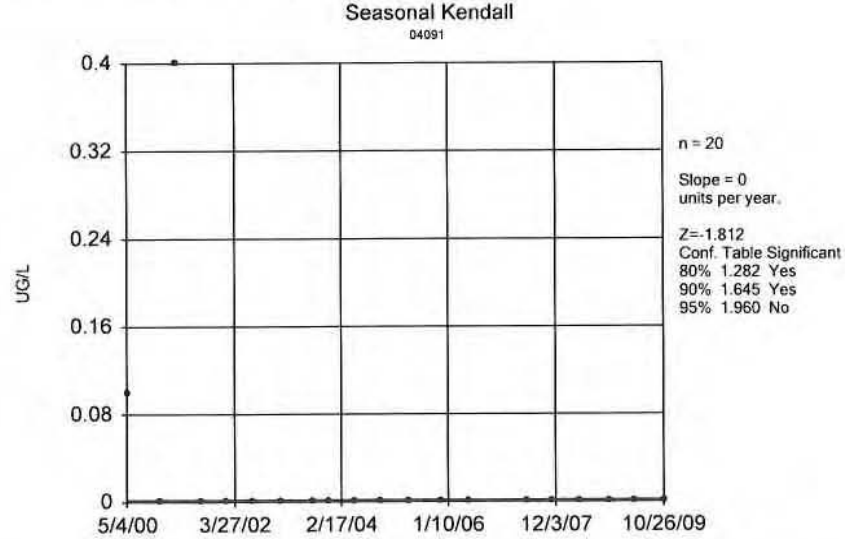
Constituent: cis-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:36 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



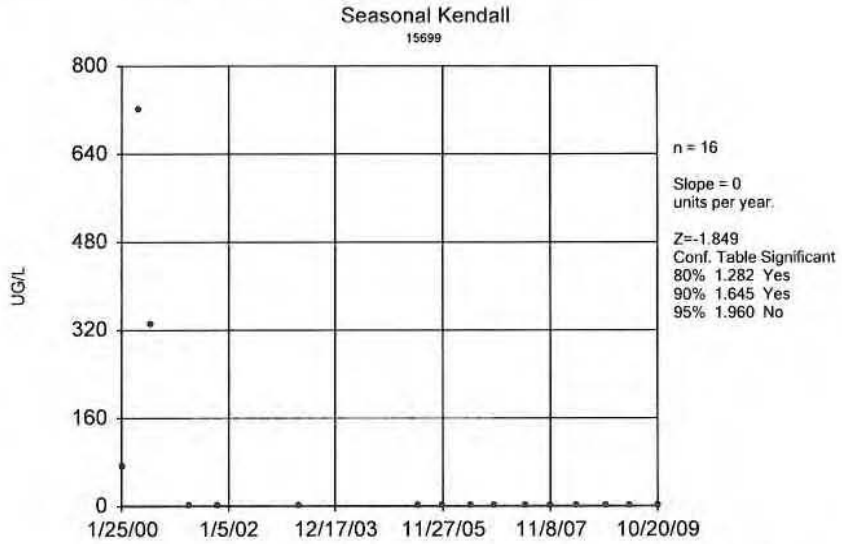
Constituent: METHYLENE CHLORIDE Analysis Run 3/2/2010 6:38 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



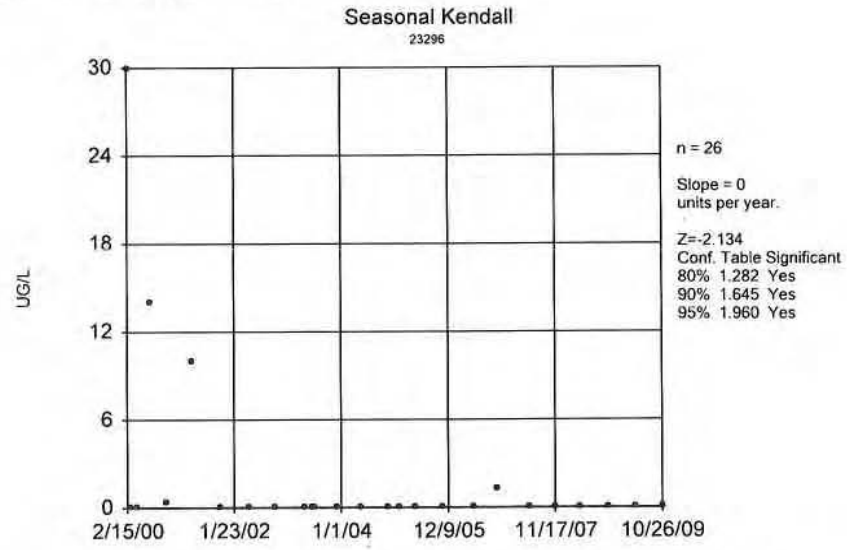
Constituent: METHYLENE CHLORIDE Analysis Run 3/2/2010 6:38 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



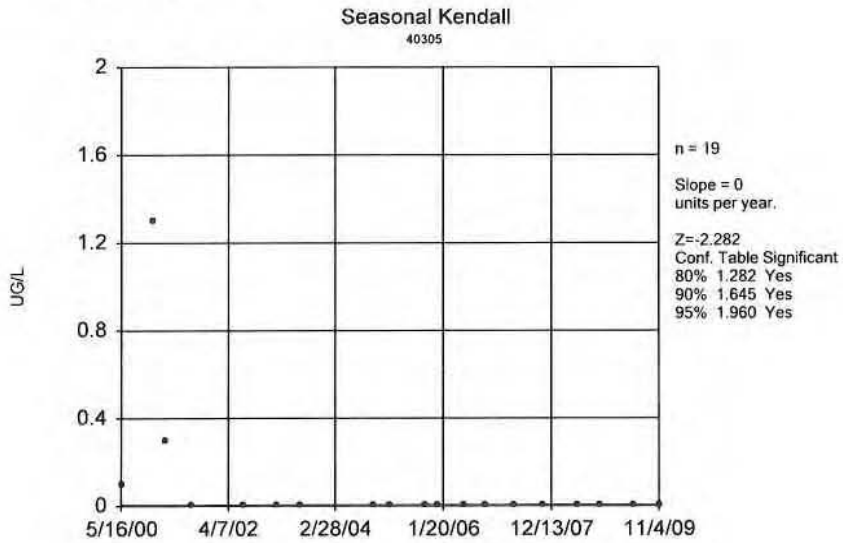
Constituent: METHYLENE CHLORIDE Analysis Run 3/2/2010 6:38 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: METHYLENE CHLORIDE Analysis Run 3/2/2010 6:38 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: METHYLENE CHLORIDE Analysis Run 3/2/2010 6:38 PM
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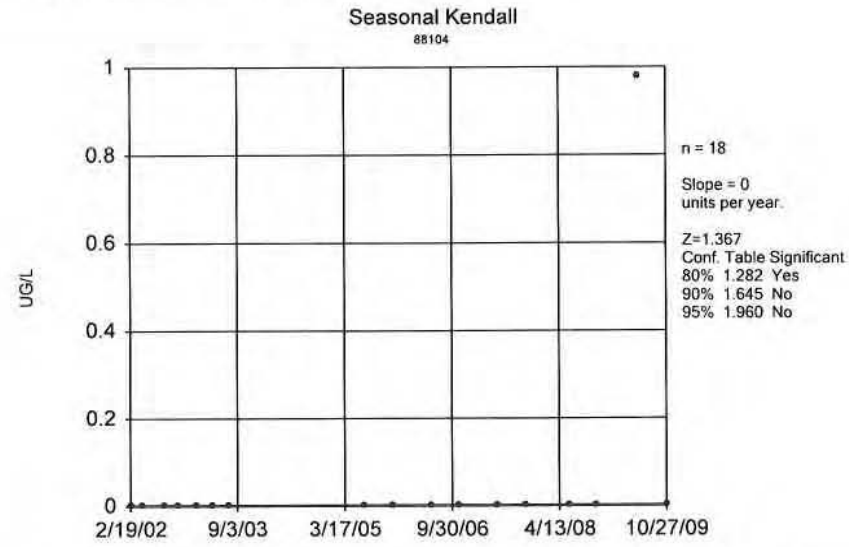
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: METHYLENE CHLORIDE Analysis Run 3/2/2010 6:38 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

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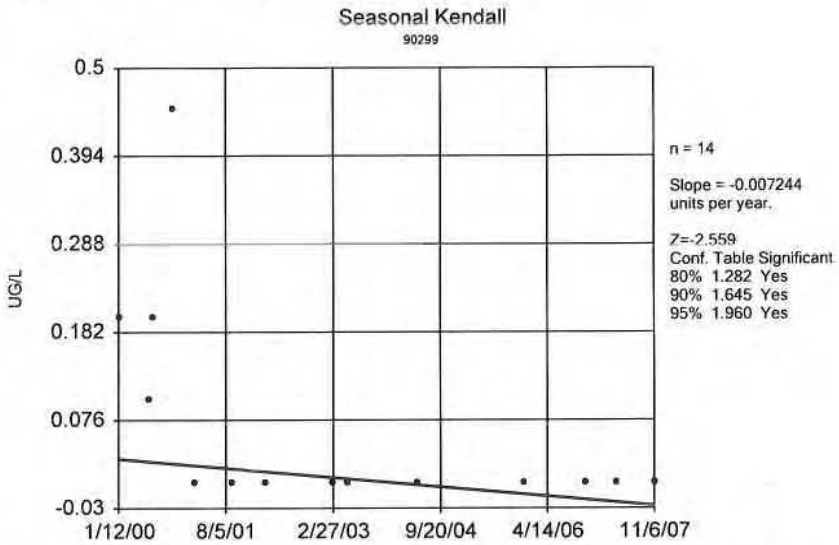

Constituent: METHYLENE CHLORIDE Analysis Run 3/2/2010 6:38 PM
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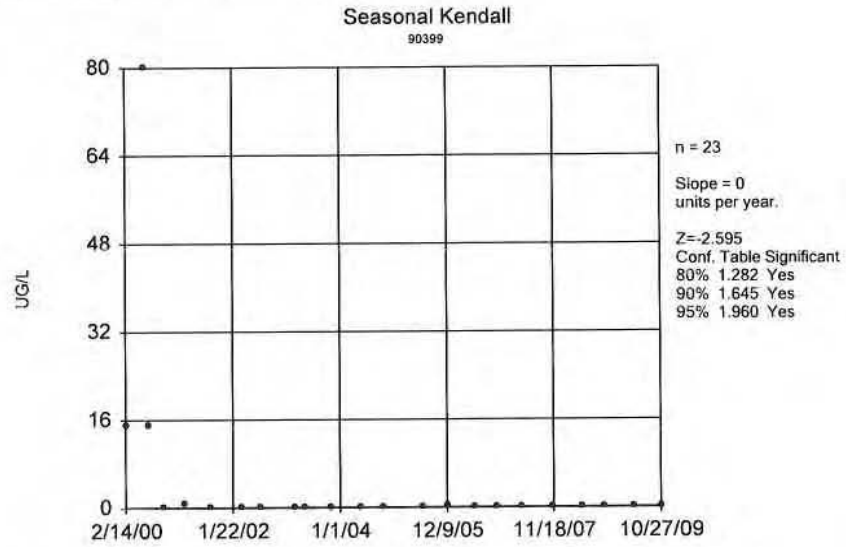

Constituent: METHYLENE CHLORIDE Analysis Run 3/2/2010 6:38 PM
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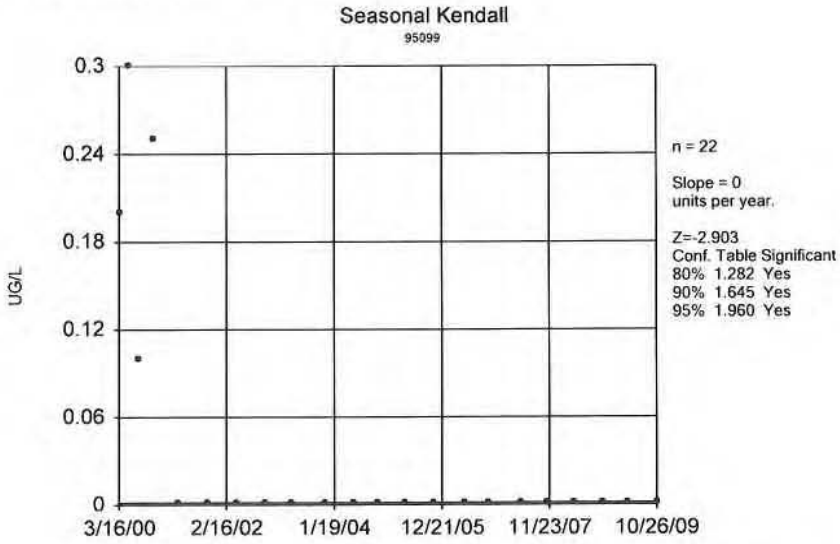

Constituent: METHYLENE CHLORIDE Analysis Run 3/2/2010 6:39 PM
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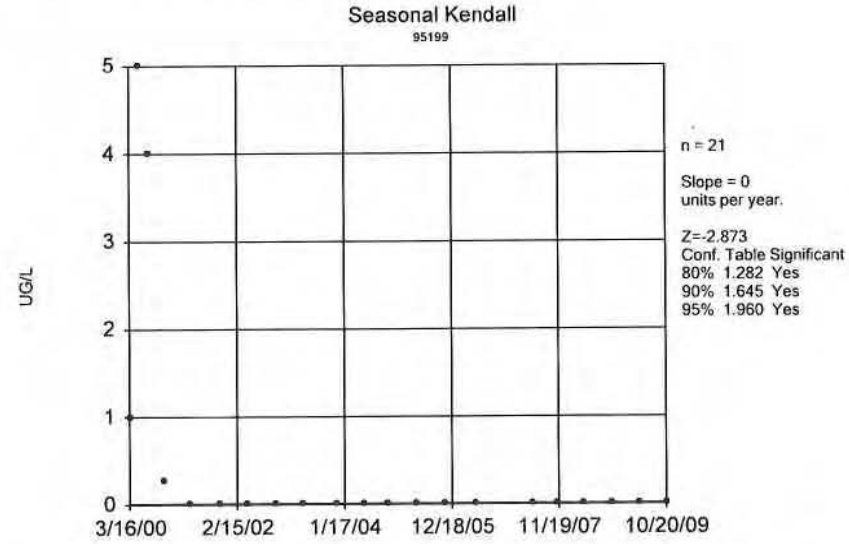

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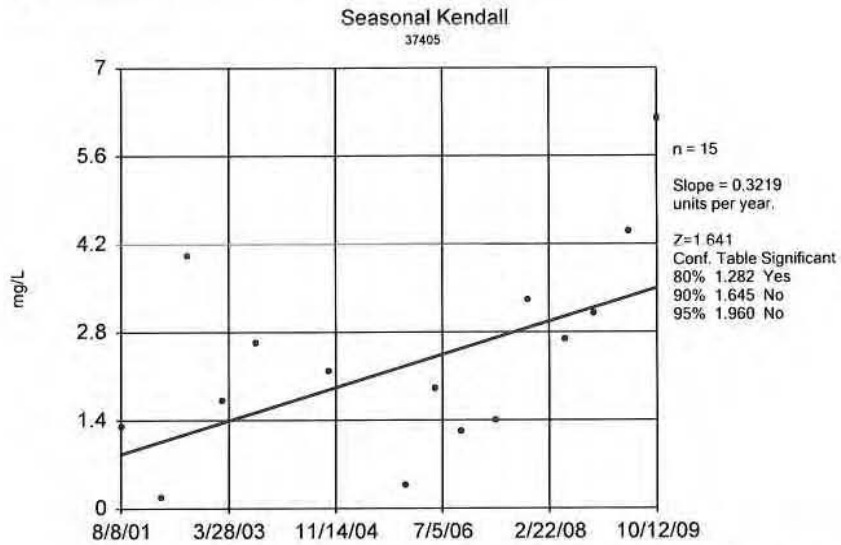
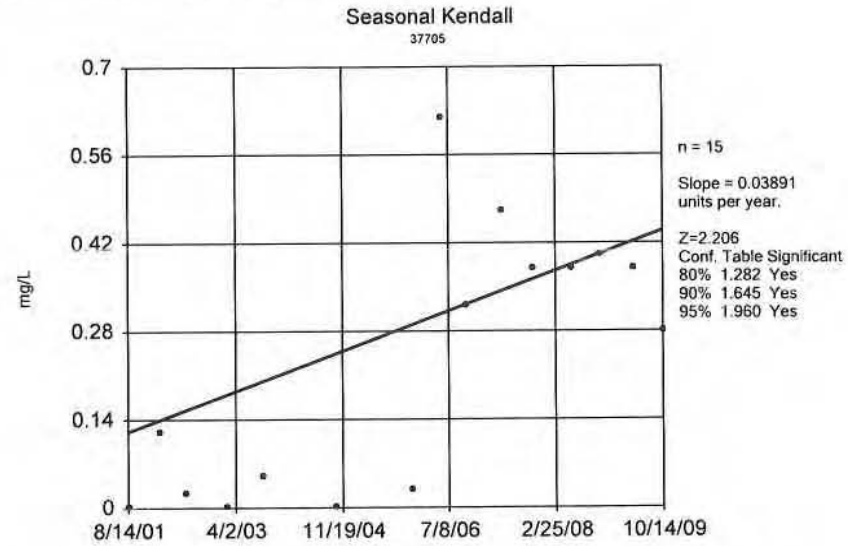
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



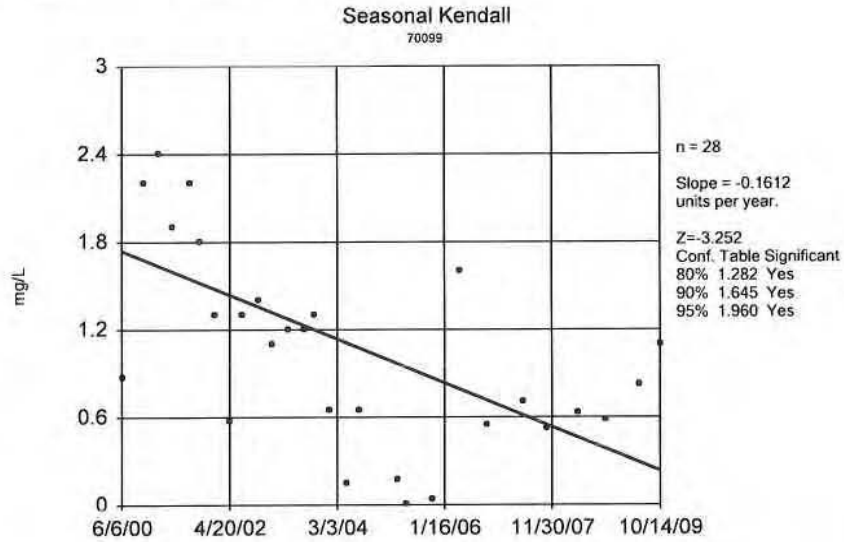
Constituent: Nitrate + Nitrite as Nitrogen Analysis Run 3/2/2010 6:39 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



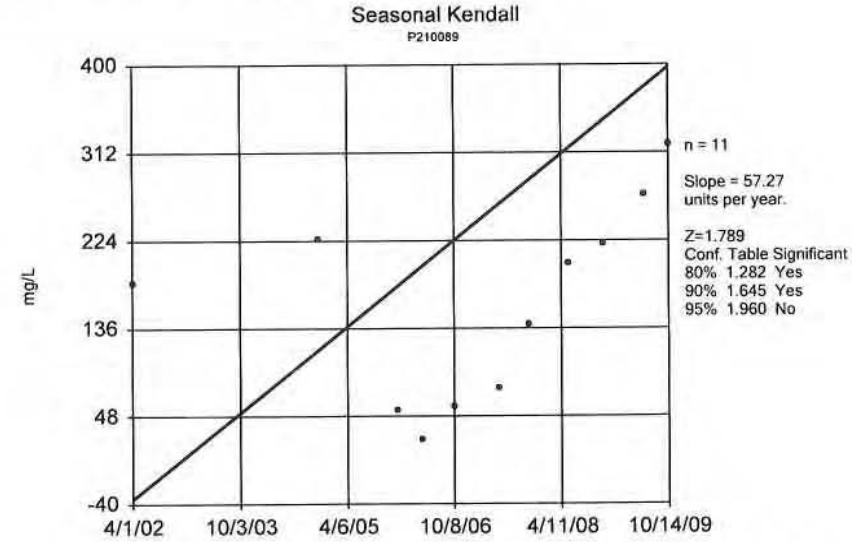
Constituent: Nitrate + Nitrite as Nitrogen Analysis Run 3/2/2010 6:39 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: Nitrate + Nitrite as Nitrogen Analysis Run 3/2/2010 6:39 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: Nitrate + Nitrite as Nitrogen Analysis Run 3/2/2010 6:39 PM
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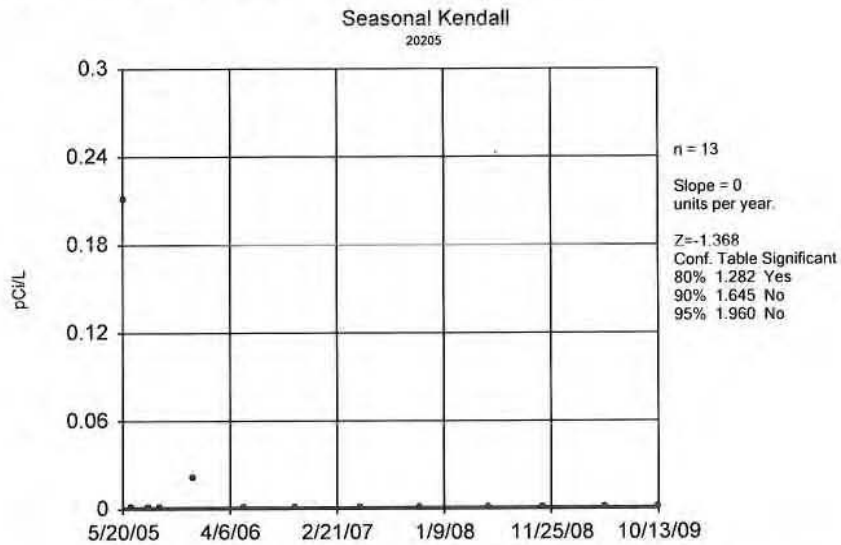
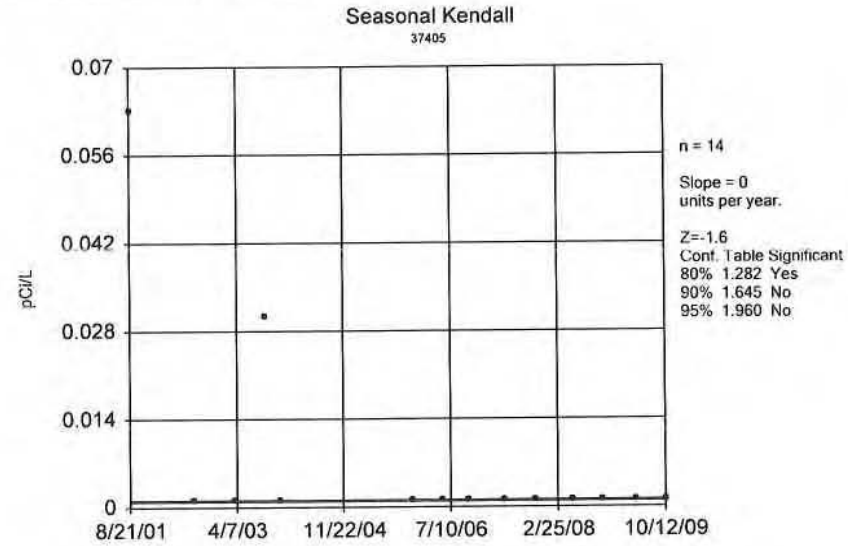
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: Plutonium-239, 240 Analysis Run 3/2/2010 6:40 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: Plutonium-239, 240 Analysis Run 3/2/2010 6:40 PM
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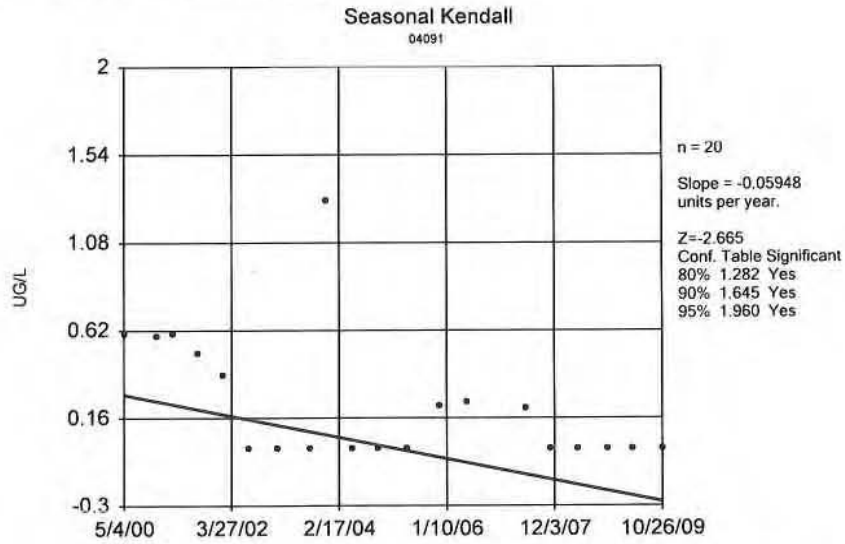
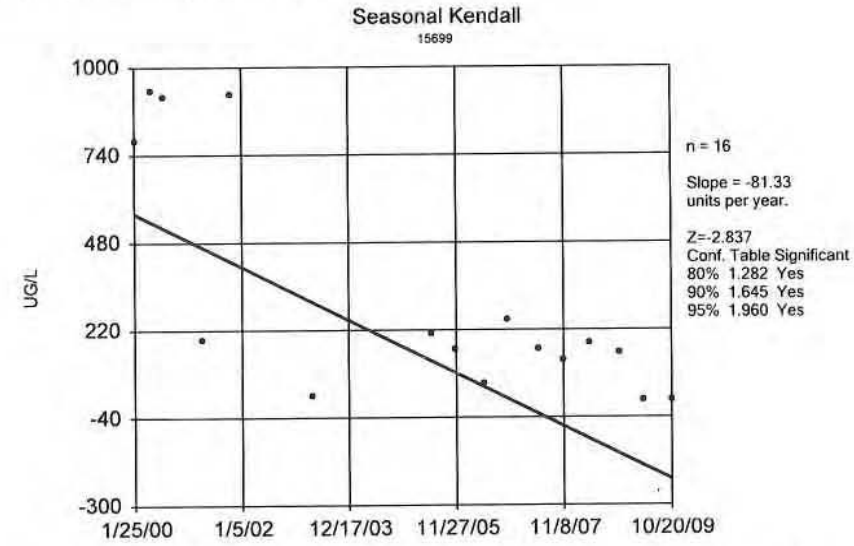
v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



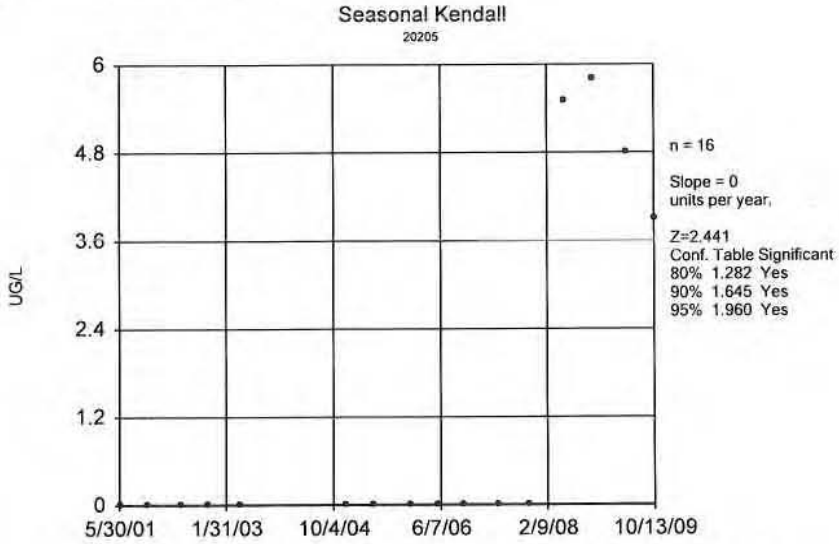
Constituent: TETRACHLOROETHENE Analysis Run 3/2/2010 6:41 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



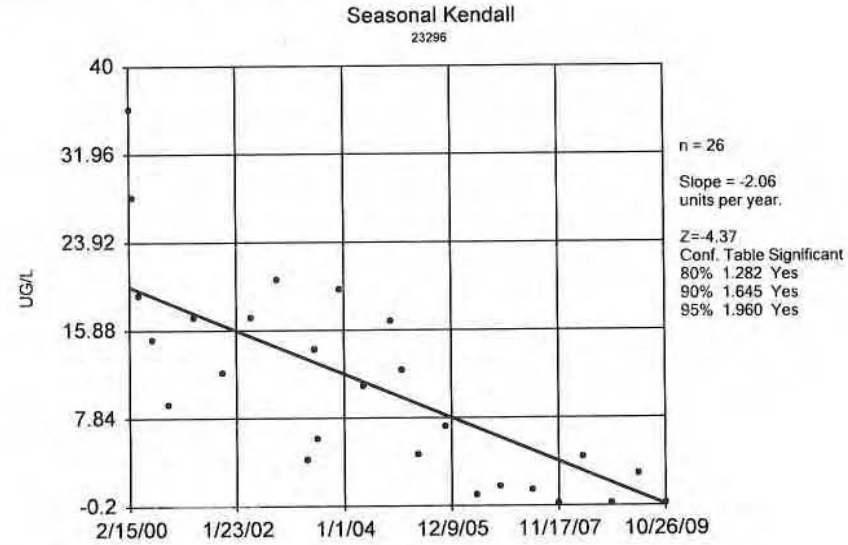
Constituent: TETRACHLOROETHENE Analysis Run 3/2/2010 6:41 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: TETRACHLOROETHENE Analysis Run 3/2/2010 6:41 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: TETRACHLOROETHENE Analysis Run 3/2/2010 6:41 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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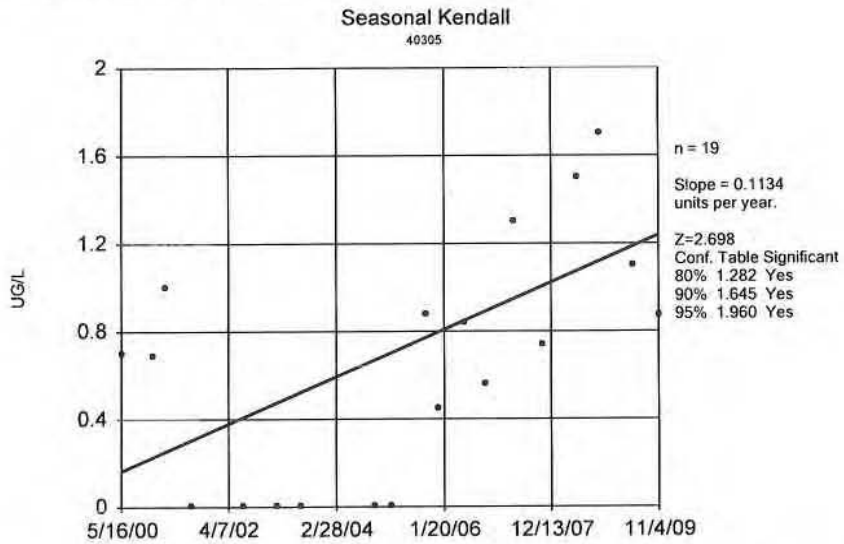
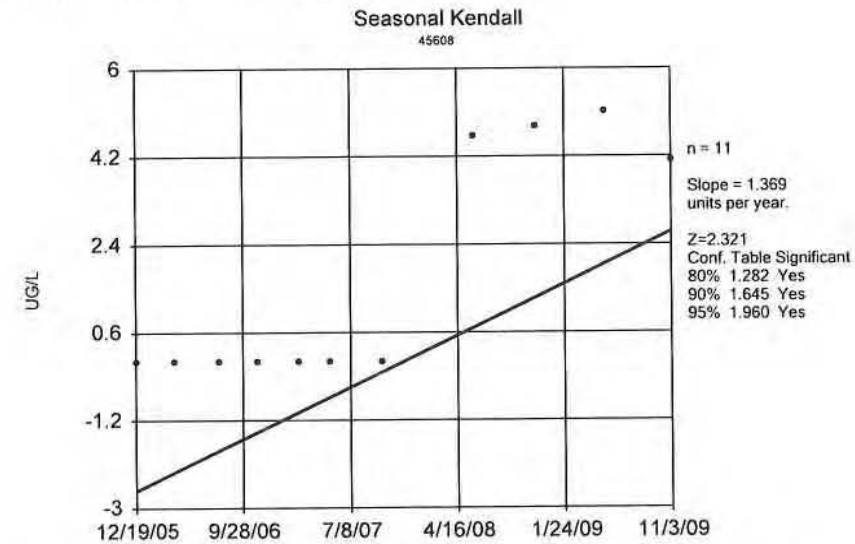


Constituent: TETRACHLOROETHENE Analysis Run 3/2/2010 6:41 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: TETRACHLOROETHENE Analysis Run 3/2/2010 6:41 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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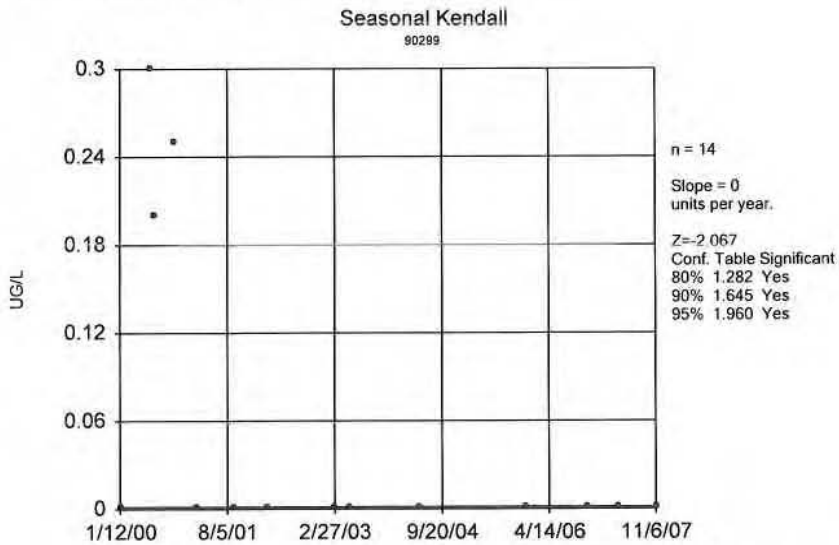
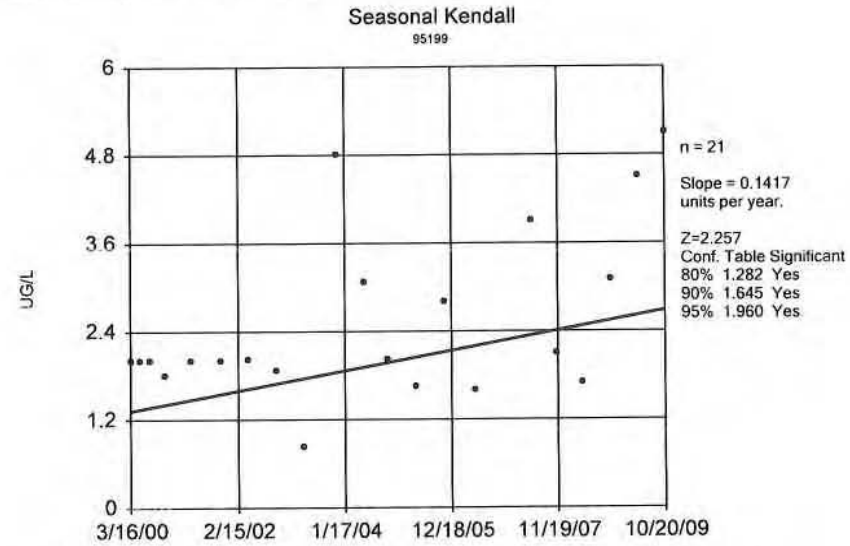


Constituent: TETRACHLOROETHENE Analysis Run 3/2/2010 6:41 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: TETRACHLOROETHENE Analysis Run 3/2/2010 6:41 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

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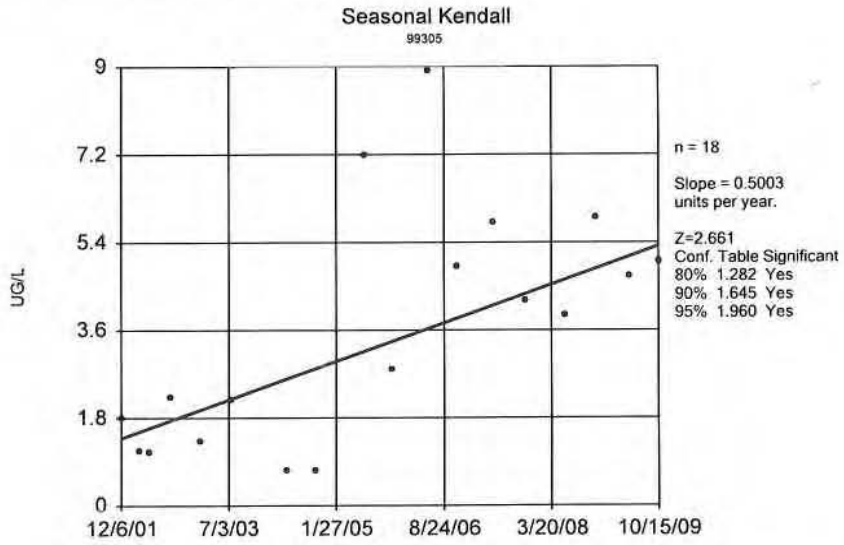
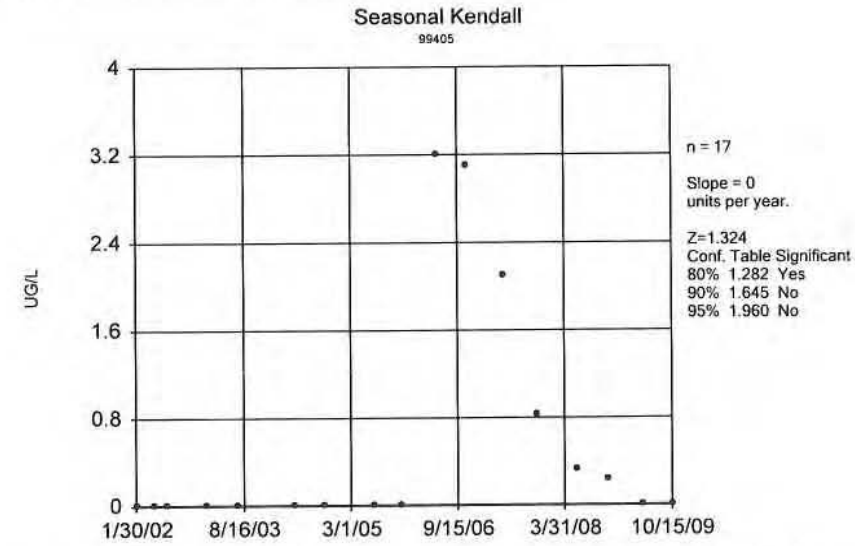


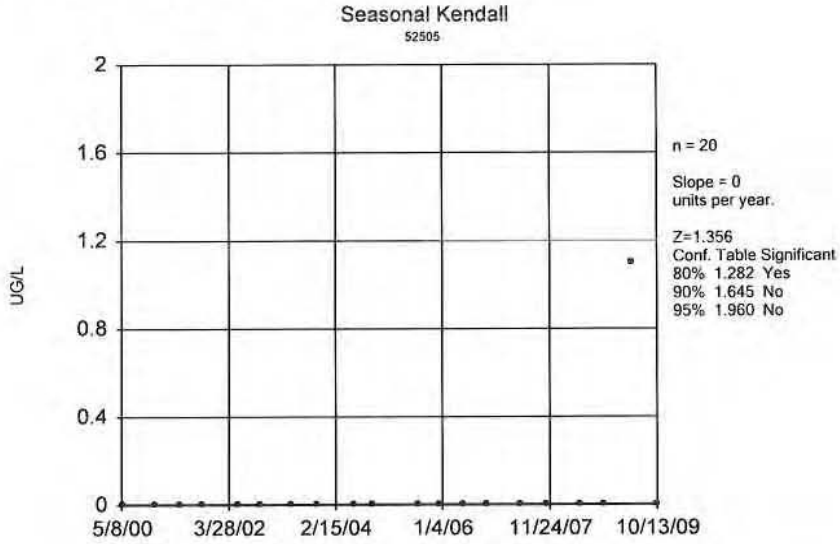
Constituent: TETRACHLOROETHENE Analysis Run 3/2/2010 6:41 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



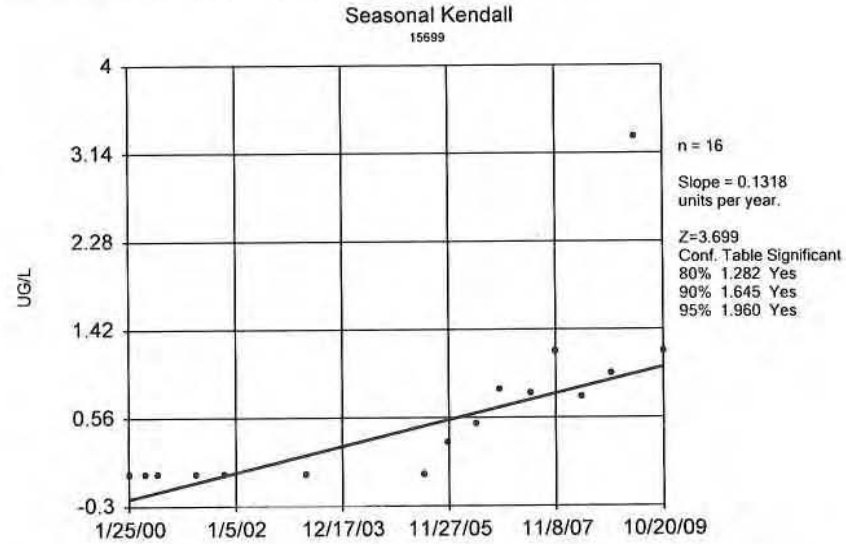
Constituent: TETRACHLOROETHENE Analysis Run 3/2/2010 6:41 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



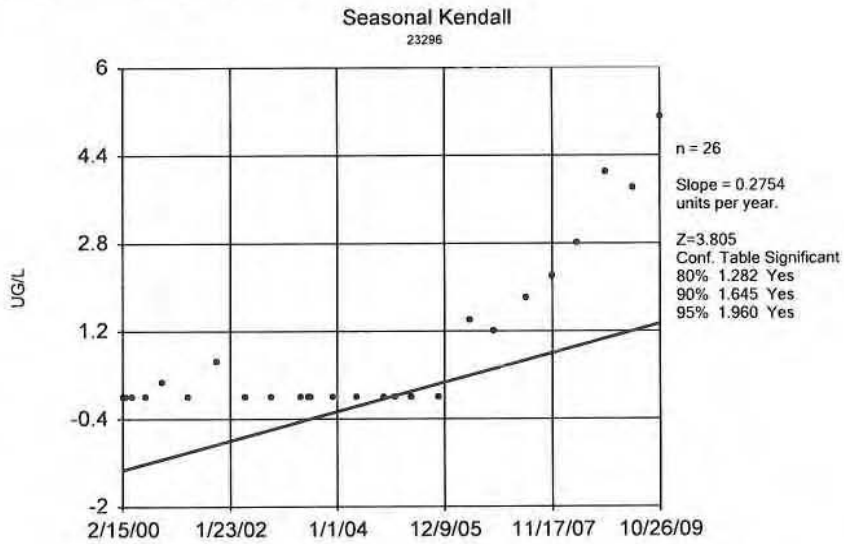
Constituent: TOTAL XYLENES Analysis Run 3/2/2010 6:43 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



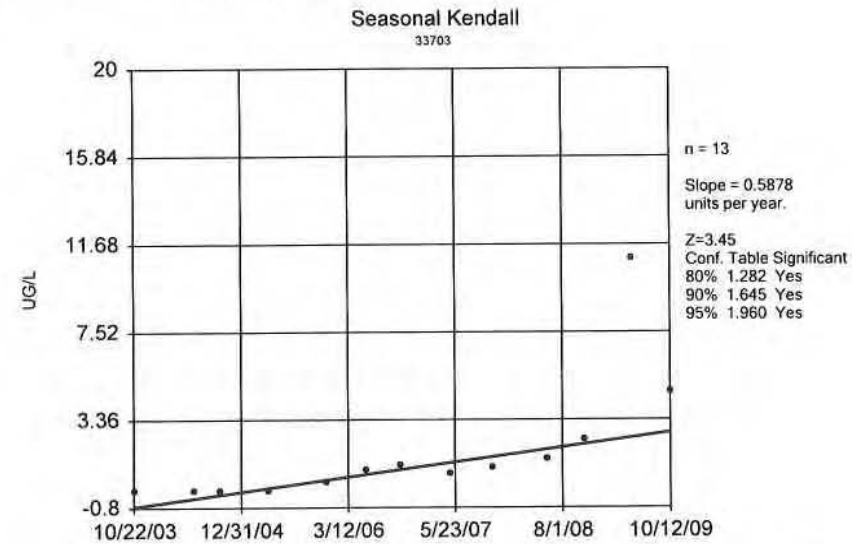
Constituent: trans-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:43 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: trans-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:43 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: trans-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:43 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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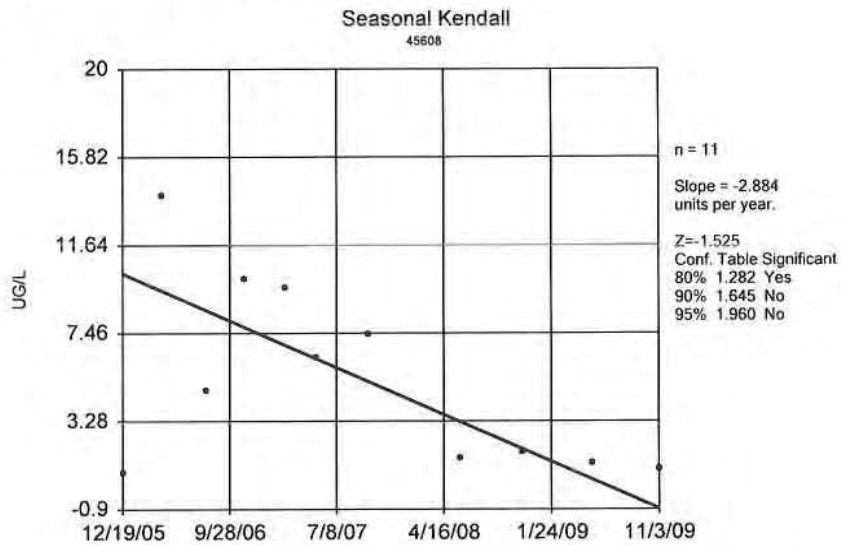

Constituent: trans-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:43 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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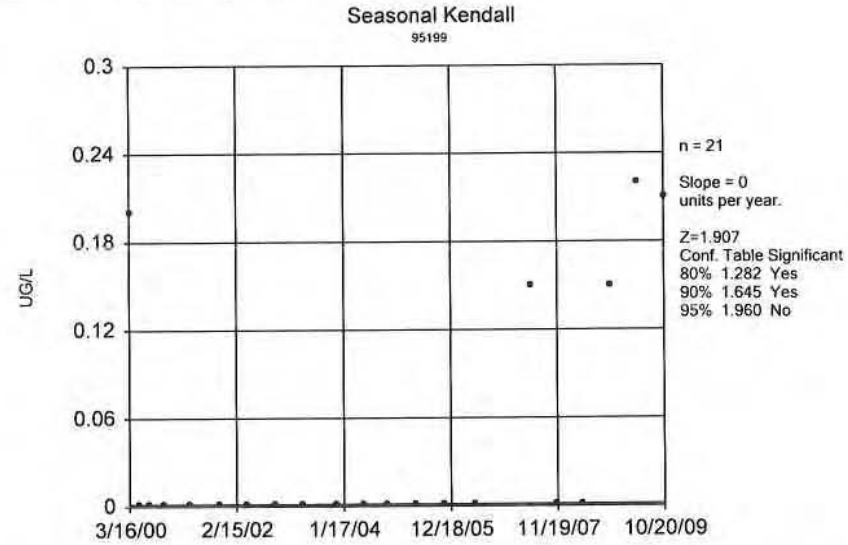

Constituent: trans-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:43 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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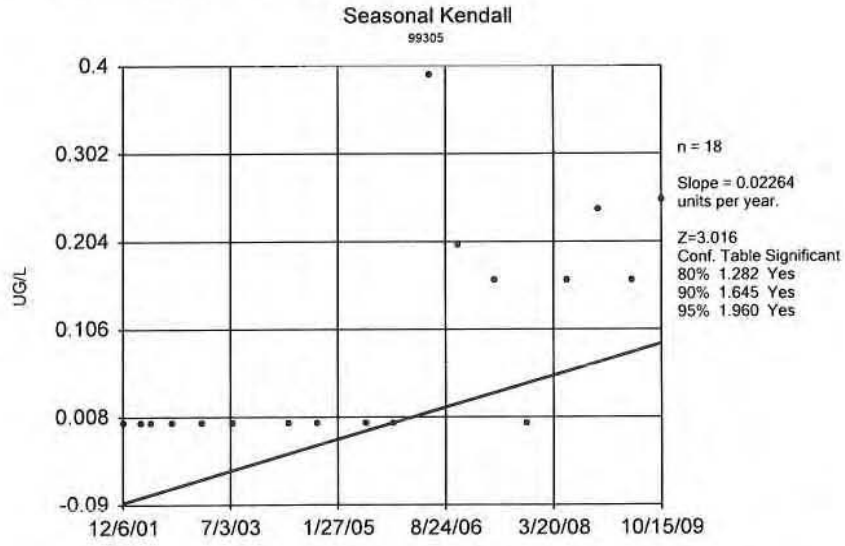

Constituent: trans-1,2-DICHLOROETHENE Analysis Run 3/2/2010 6:43 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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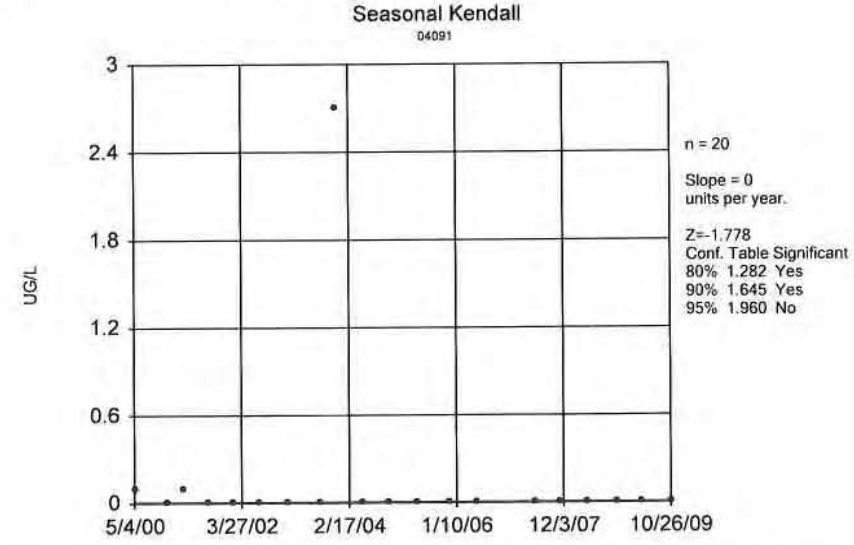

Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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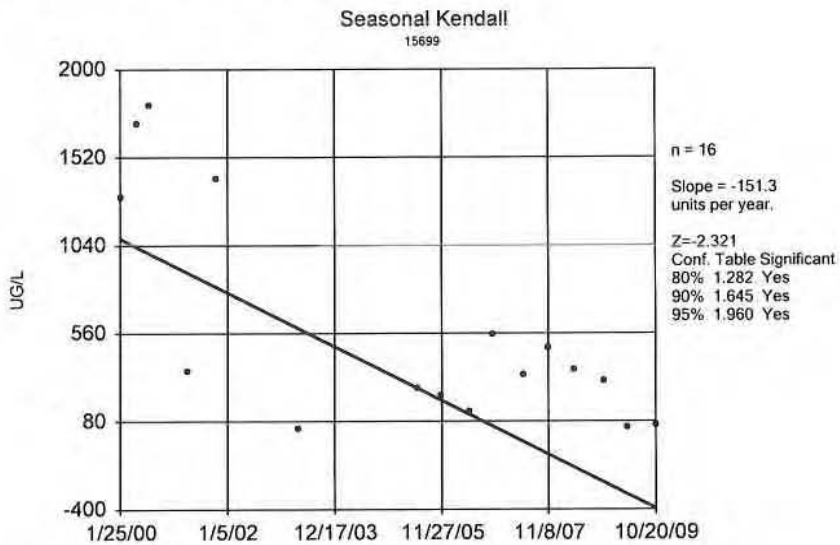
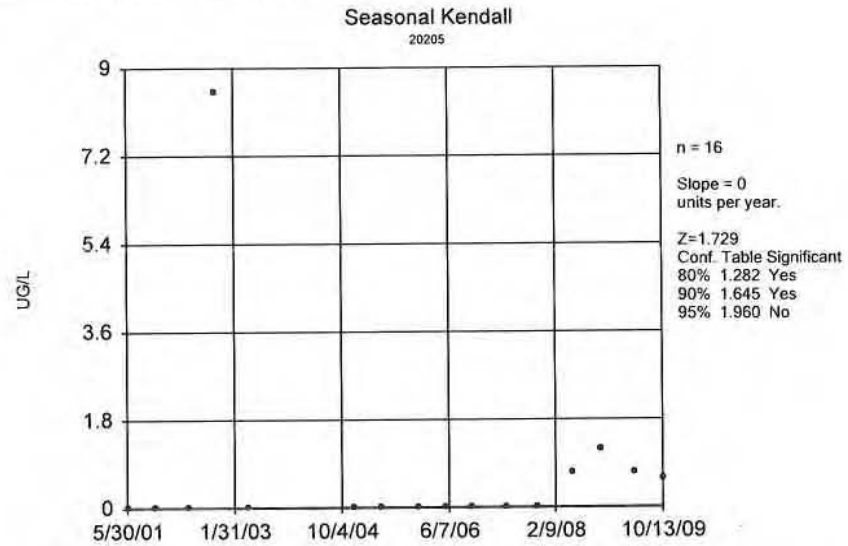


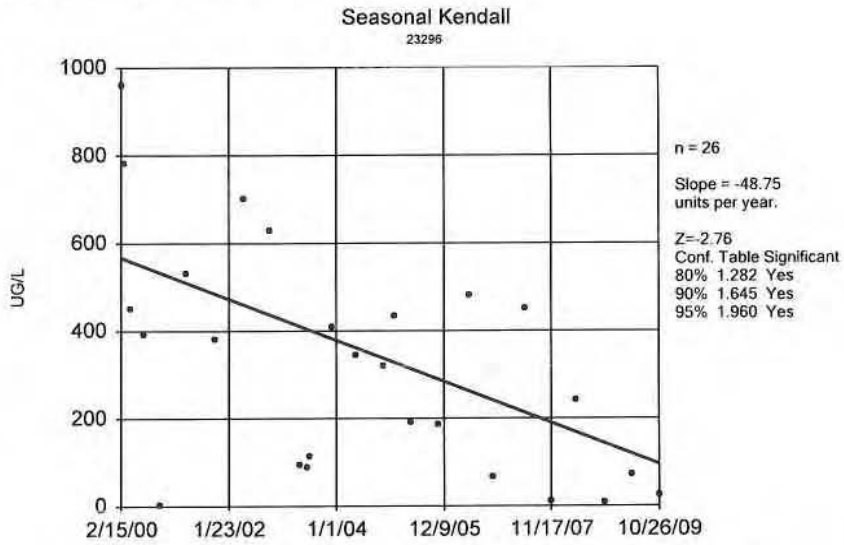
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



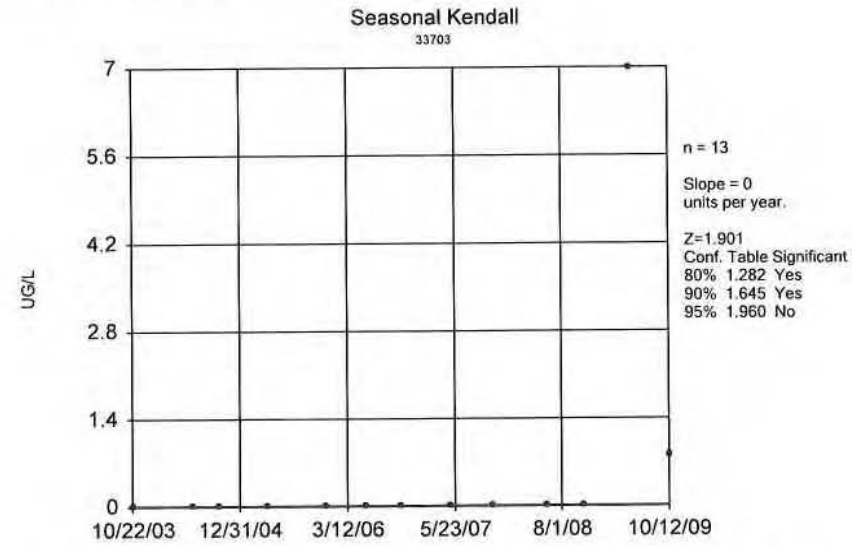
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



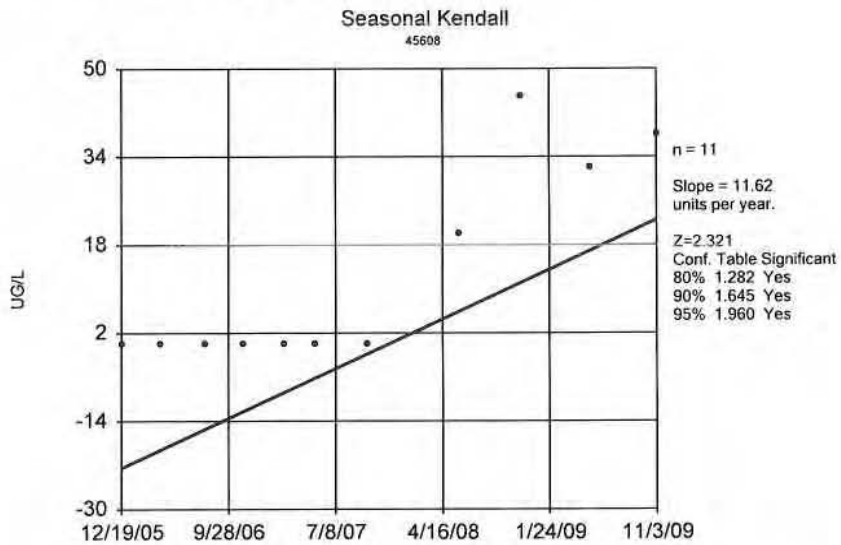
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



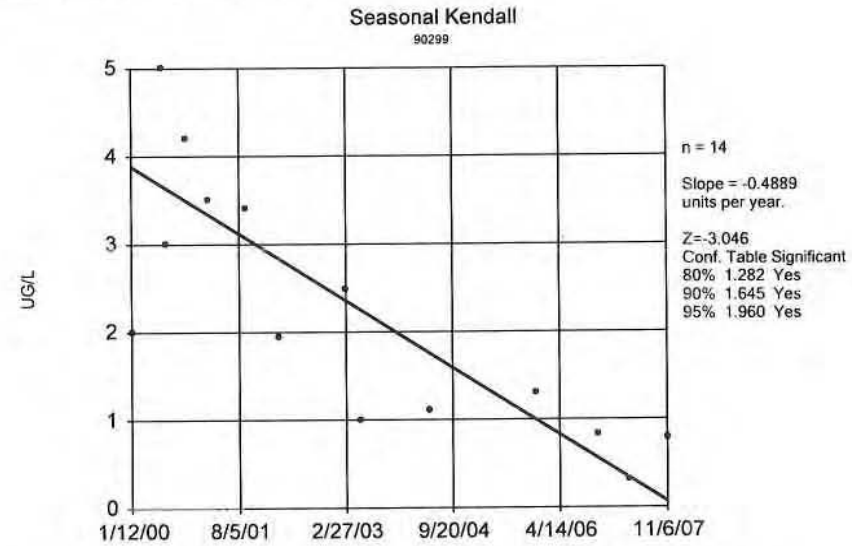
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



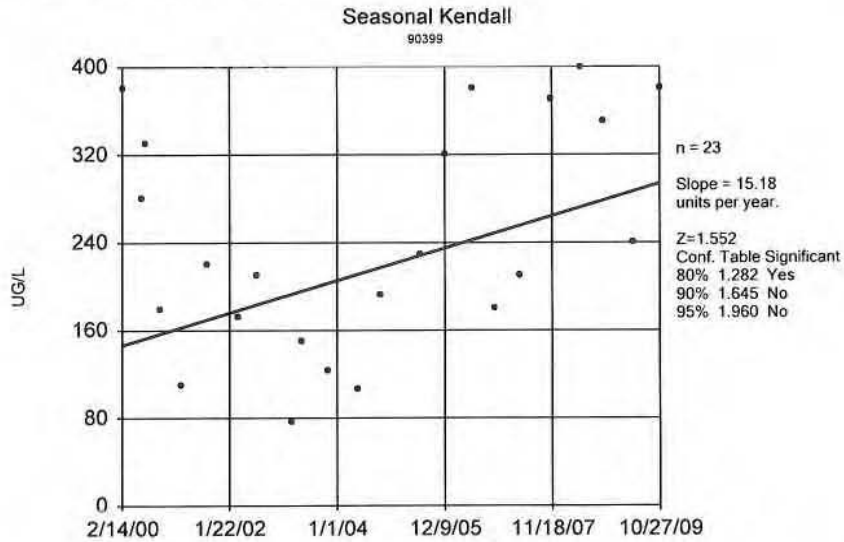
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



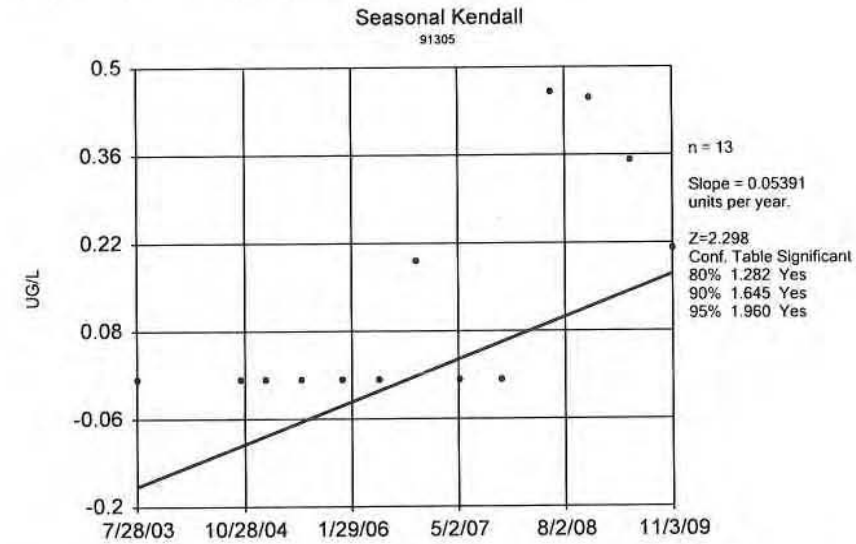
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



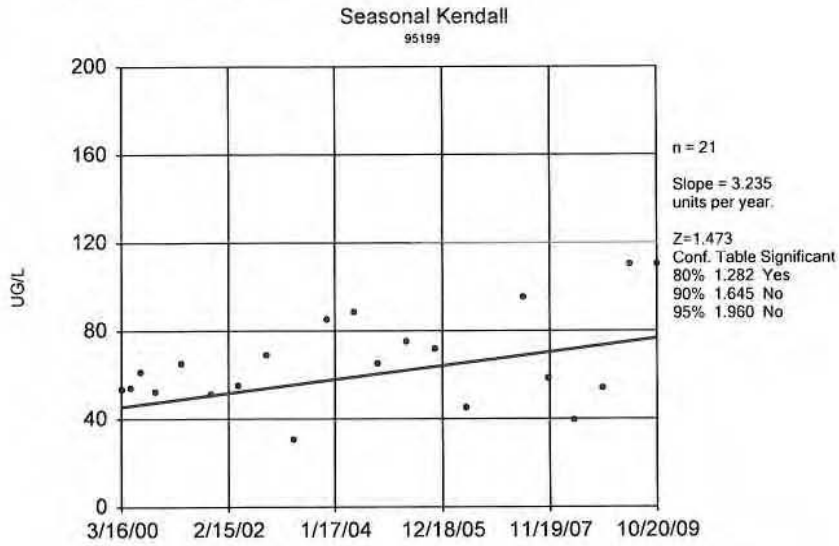
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



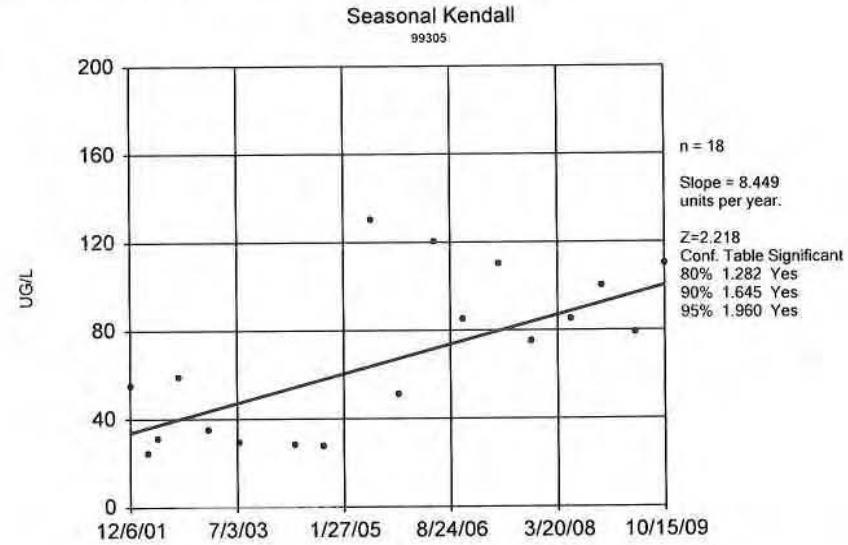
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



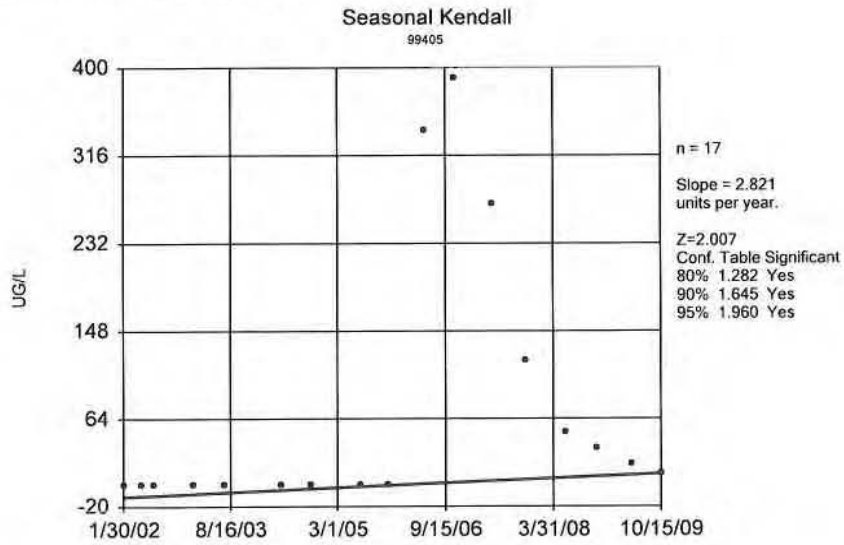
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



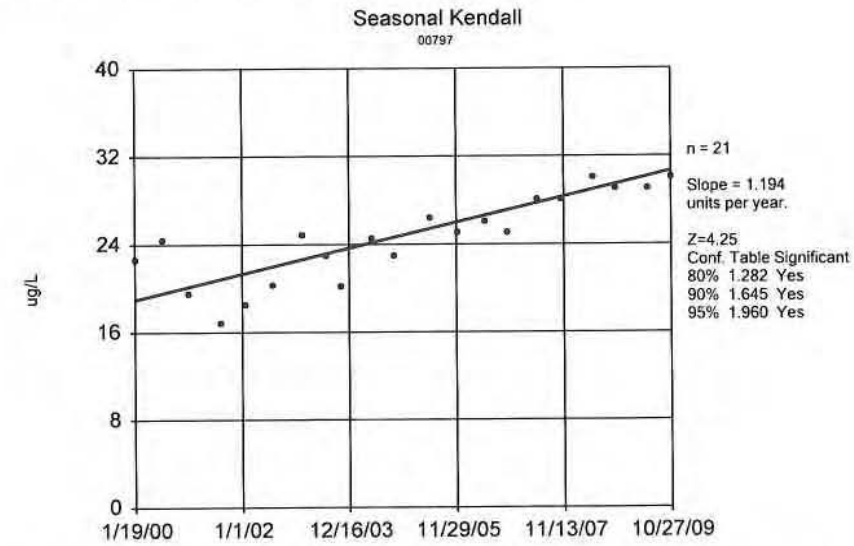
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



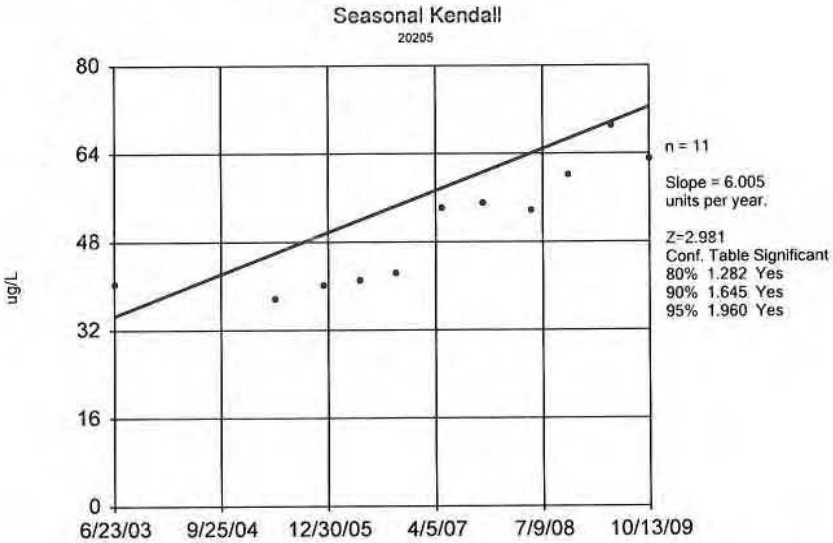
Constituent: TRICHLOROETHENE Analysis Run 3/2/2010 6:44 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



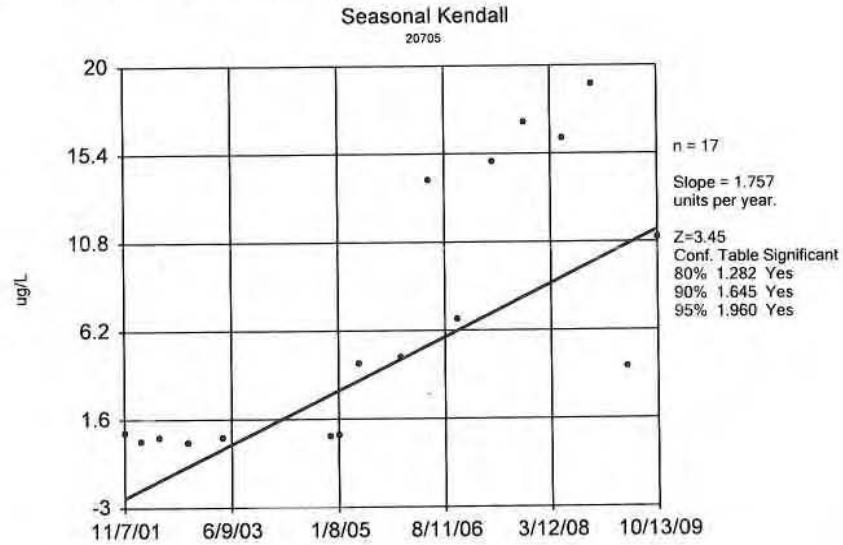
Constituent: Uranium Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



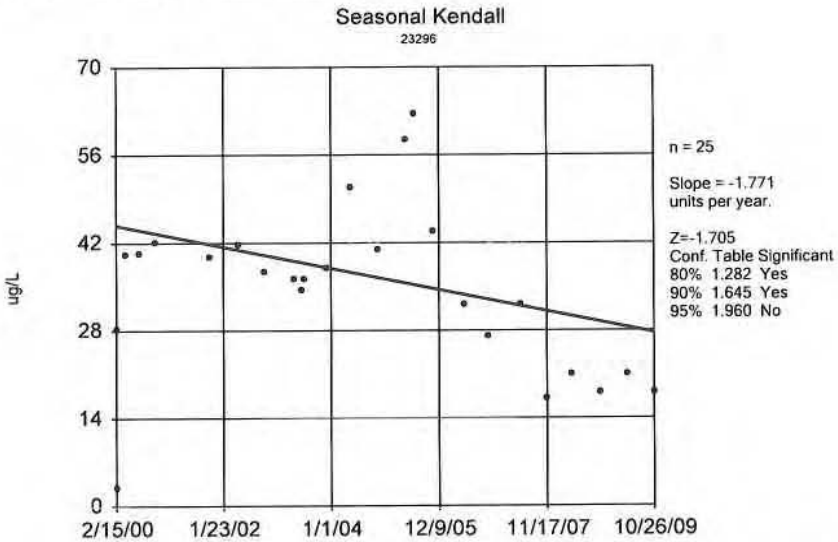
Constituent: Uranium Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



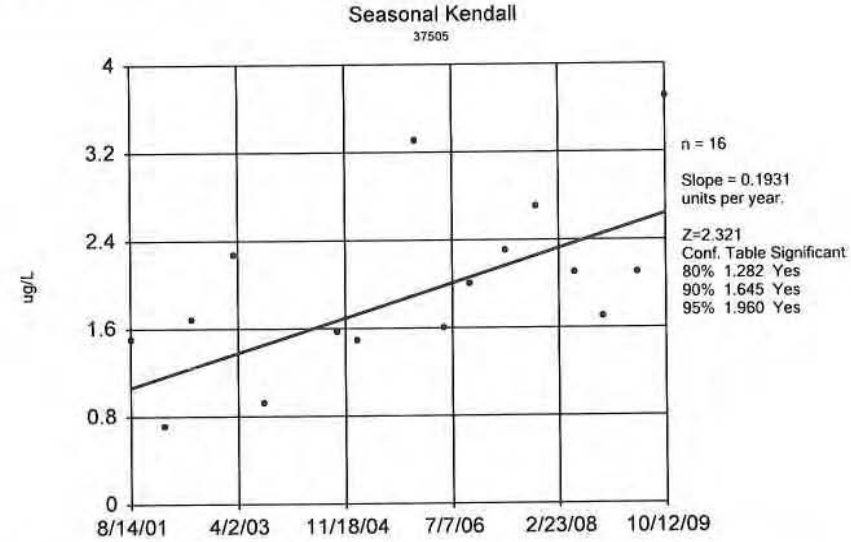
Constituent: Uranium Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



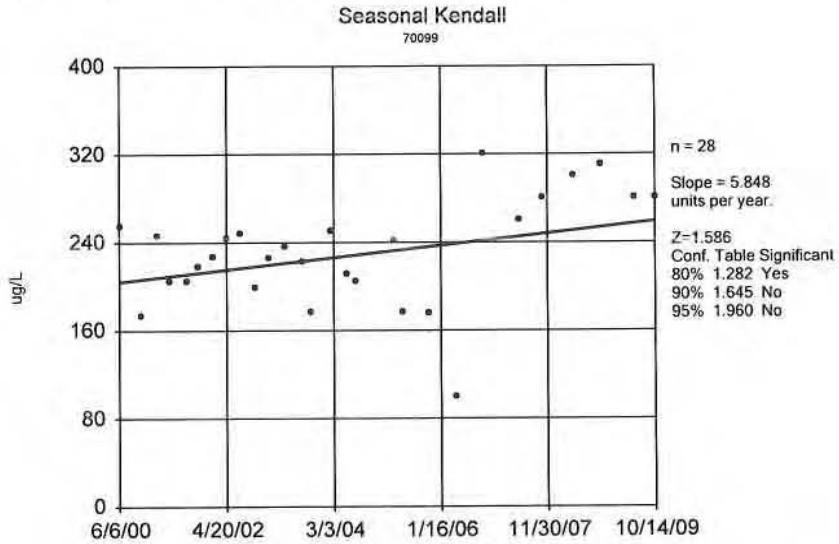
Constituent: Uranium Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



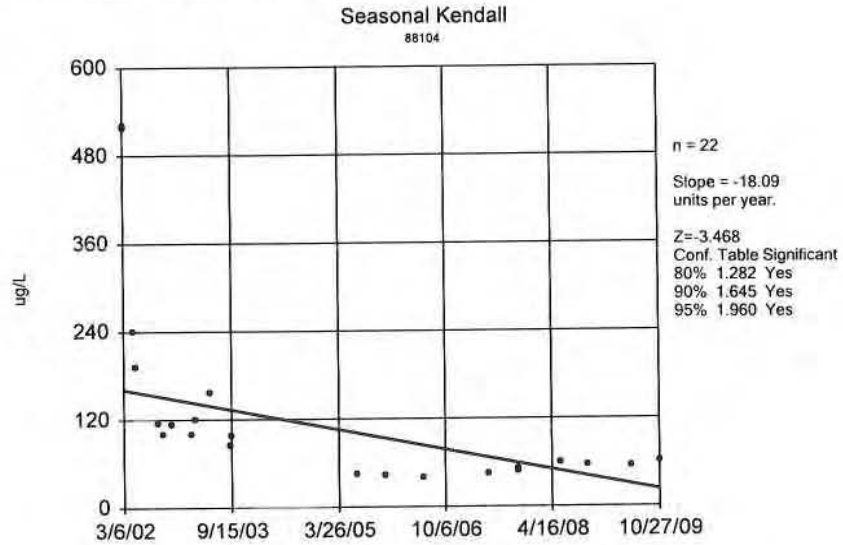
Constituent: Uranium Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: Uranium Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: Uranium Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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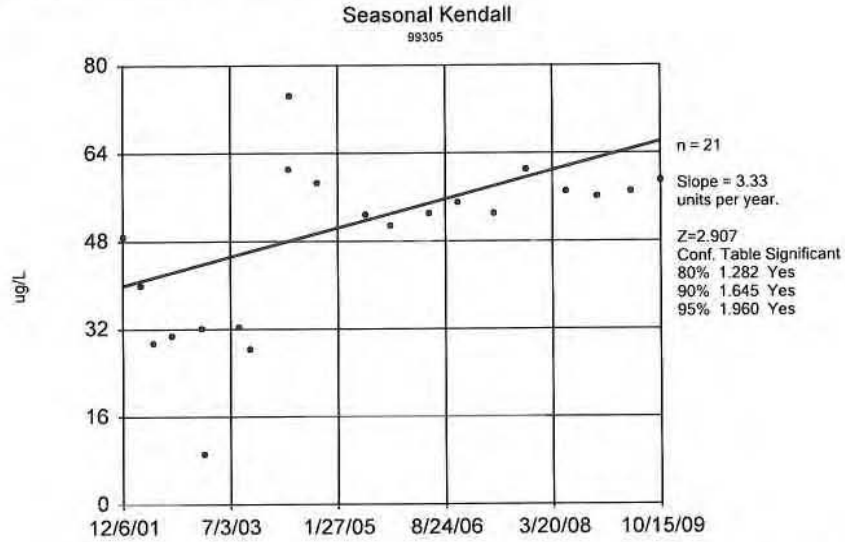

Constituent: Uranium Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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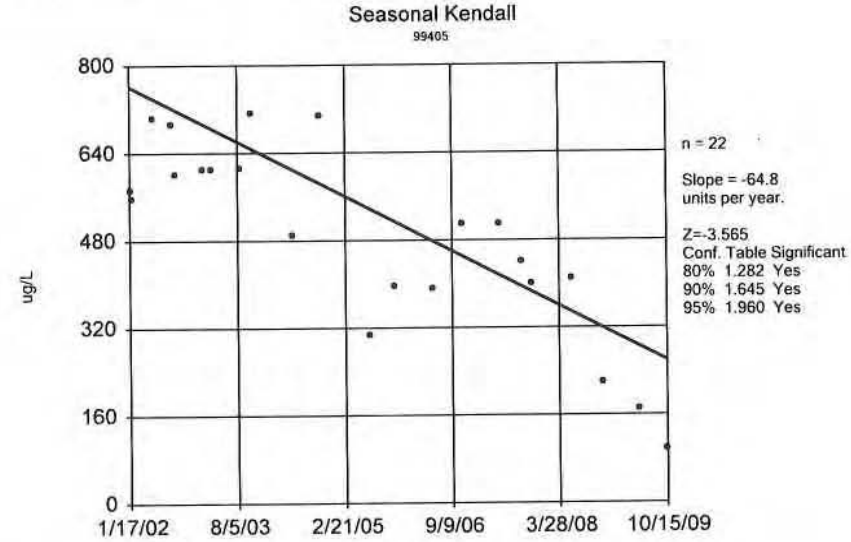

Constituent: Uranium Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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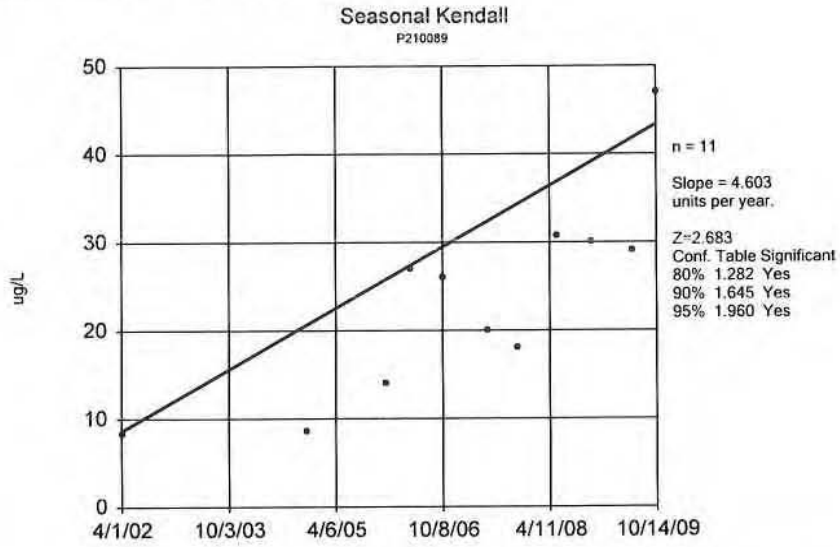

Constituent: Uranium Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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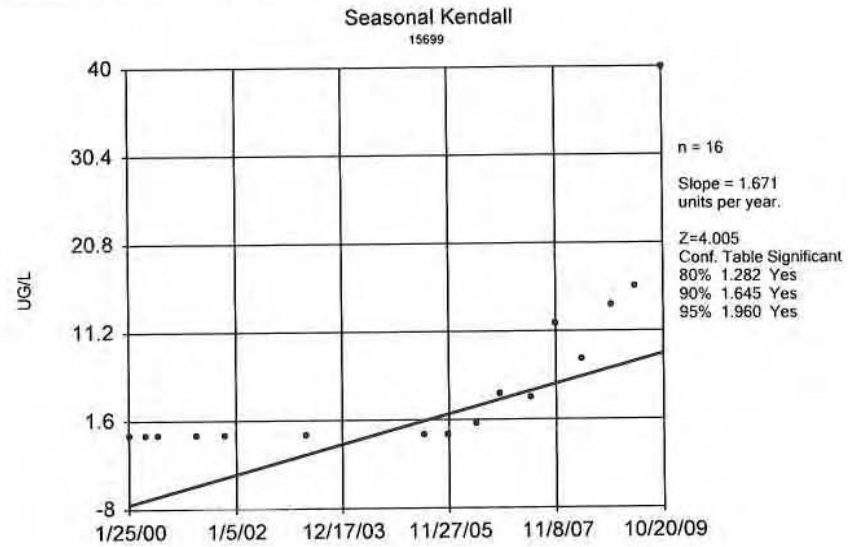
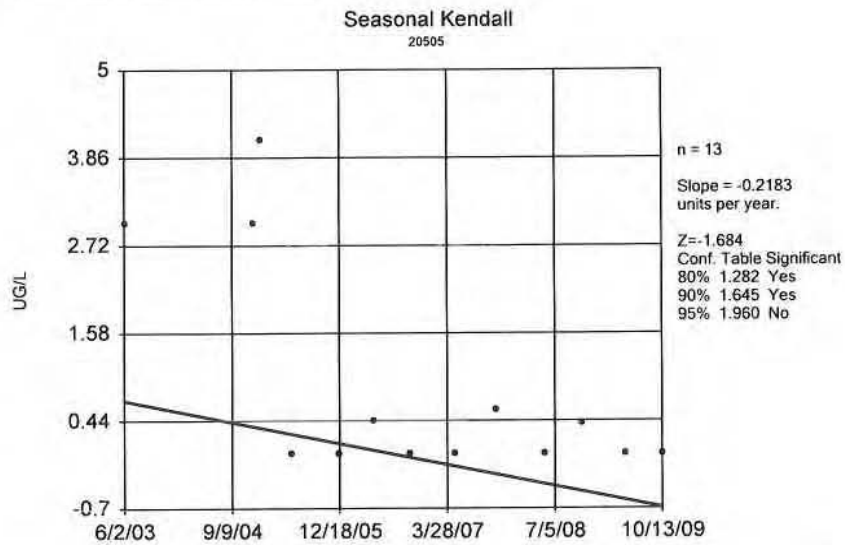


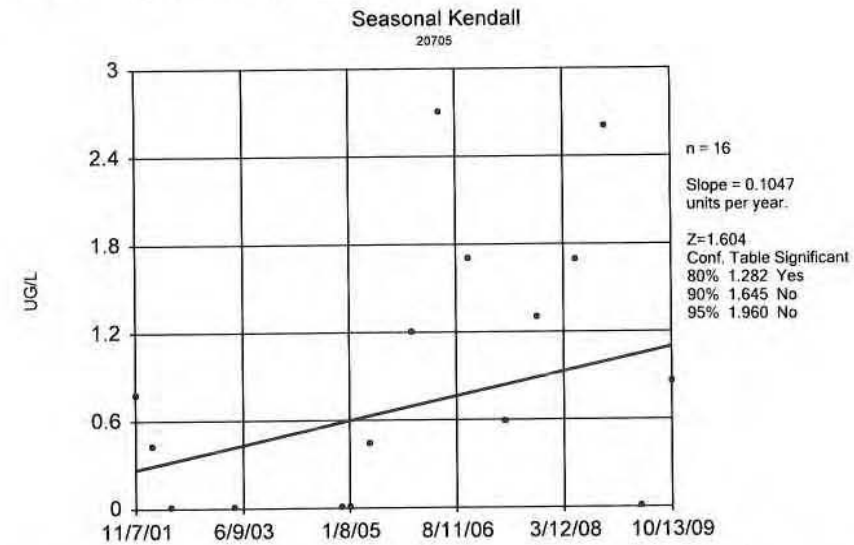
Constituent: VINYL CHLORIDE Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: VINYL CHLORIDE Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: VINYL CHLORIDE Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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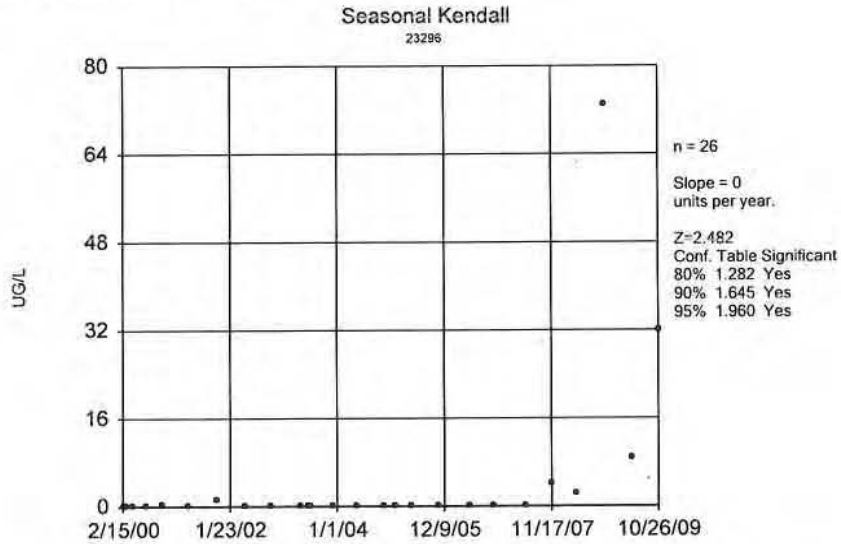

Constituent: VINYL CHLORIDE Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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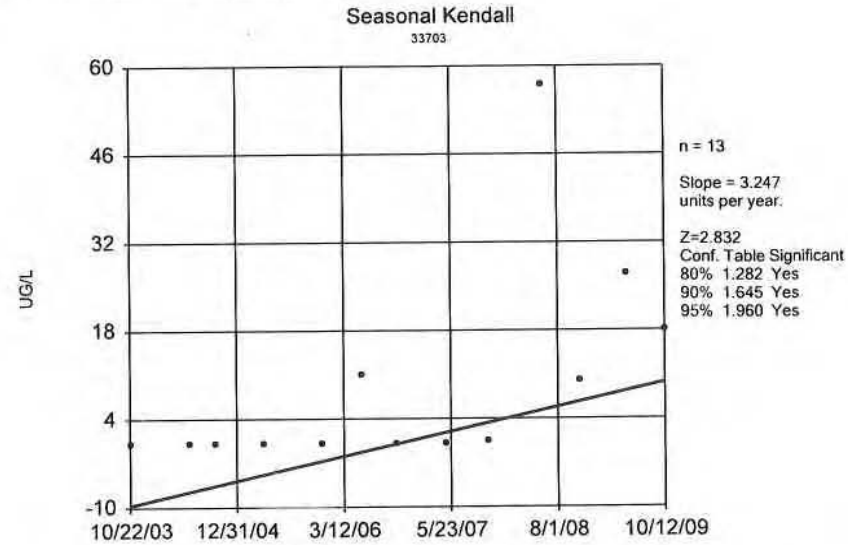

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Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

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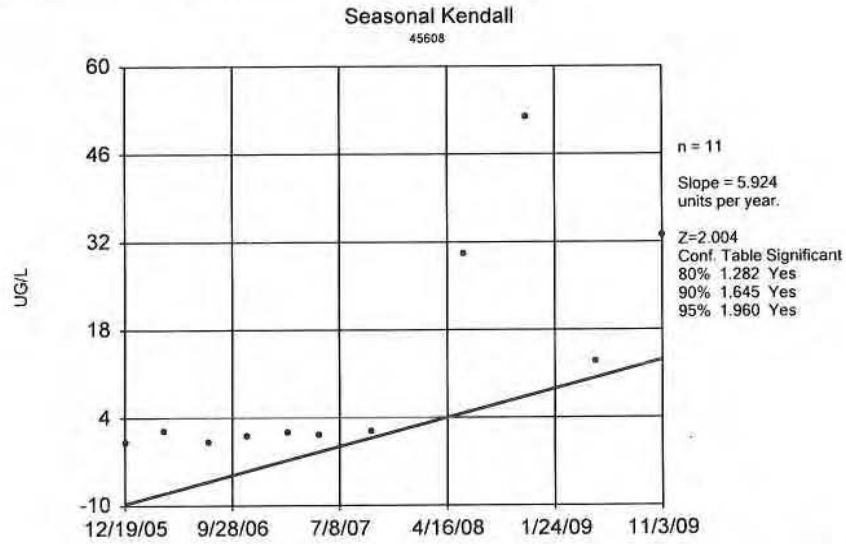

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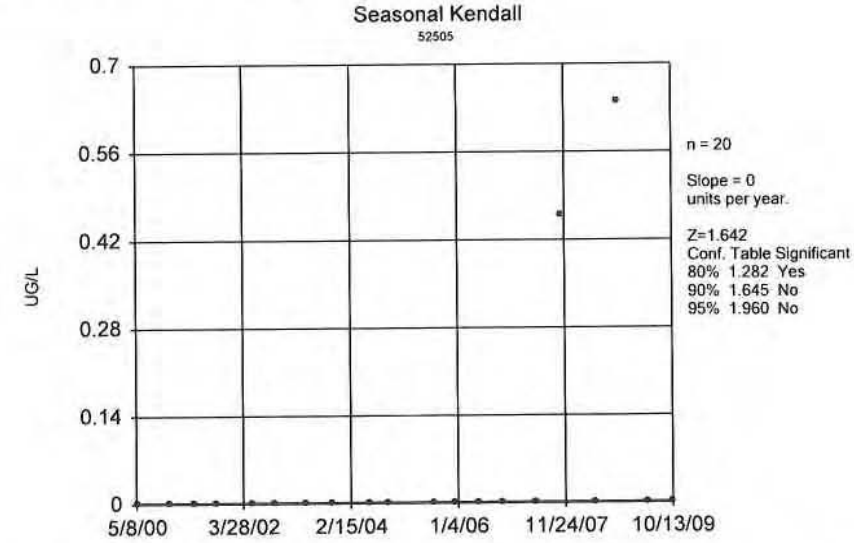
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: VINYL CHLORIDE Analysis Run 3/2/2010 6:45 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells. SWD&CPro 09

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
1,1,1-TRICHLOROETHANE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	**15699**	**16**	**-0.5905**	**-2.22**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
1,1,1-TRICHLOROETHANE (UG/L)	**20205**	**16**	**0**	**-1.309**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,1,1-TRICHLOROETHANE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	23296	26	0	0.4091	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	**45608**	**11**	**0.04875**	**1.936**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
1,1,1-TRICHLOROETHANE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	90399	23	0	-1.278	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	91203	14	0	0.6836	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
1,1,2,2-TETRACHLOROETHANE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROETHANE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
1,1,2-TRICHLOROETHANE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	11502	11	0	-0....	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	**15699**	**16**	**-7.359**	**-1.977**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
1,1-DICHLOROETHENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	**23296**	**26**	**0.1922**	**3.785**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
1,1-DICHLOROETHENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	**45608**	**11**	**0.2626**	**1.749**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
1,1-DICHLOROETHENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	90399	23	0.0638	1.207	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	91203	14	0.1232	1.206	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	95199	21	0.02389	0.595	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	99305	18	0	1.129	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	20705	15	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
1,2,4-TRICHLOROBENZENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	00797	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	11502	8	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	15699	8	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	20205	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	20505	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	20705	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	23296	8	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	30002	8	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	33703	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	37405	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	37505	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	37705	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	40305	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	52505	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	88104	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	90399	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	91203	9	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	91305	9	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
1,2-Dibromo-3-chloropropane (ug/L)	95099	8	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	99305	8	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chloropropane (ug/L)	99405	8	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	95099	21	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	95199	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
1,2-DICHLOROBENZENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	**33703**	**13**	**0.0133**	**1.659**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
1,2-DICHLOROBENZENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	**15699**	**16**	**0.06704**	**1.467**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,2-DICHLOROETHANE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	90399	23	0	-0....	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
1,2-DICHLOROETHANE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	**00797**	**20**	**0**	**2.028**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
1,3-DICHLOROBENZENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	11502	11	0	0.3536	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	**15699**	**16**	**0**	**1.381**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,3-DICHLOROBENZENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
1,3-DICHLOROBENZENE (UG/L)	20505	13	0	1.261	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	30002	14	0	0.8781	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	**33703**	**13**	**0.2964**	**1.29**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,3-DICHLOROBENZENE (UG/L)	37405	16	0	0.25	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	**37505**	**16**	**0**	**1.628**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,3-DICHLOROBENZENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	**40305**	**19**	**0**	**1.309**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,3-DICHLOROBENZENE (UG/L)	**45608**	**11**	**0**	**1.44**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,3-DICHLOROBENZENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	**88104**	**18**	**0**	**1.367**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,3-DICHLOROBENZENE (UG/L)	90299	14	0	1.188	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	**90399**	**23**	**0**	**1.917**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
1,3-DICHLOROBENZENE (UG/L)	91203	14	0	1.261	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	**95099**	**22**	**0**	**1.681**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
1,3-DICHLOROBENZENE (UG/L)	95199	21	0	1.048	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (UG/L)	**99405**	**17**	**0**	**1.361**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,4-DICHLOROBENZENE (UG/L)	**00797**	**20**	**0**	**1.356**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,4-DICHLOROBENZENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	15699	16	0	0.25	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	**33703**	**13**	**1.013**	**2.26**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
1,4-DICHLOROBENZENE (UG/L)	37405	16	0	0.25	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	37505	16	0	0.25	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	**40305**	**19**	**0**	**1.309**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,4-DICHLOROBENZENE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
1,4-DICHLOROBENZENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	**95099**	**22**	**0**	**1.426**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,4-DICHLOROBENZENE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
AMERICIUM-241 (PCI/L)	**20205**	**13**	**0**	**-1.917**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
AMERICIUM-241 (PCI/L)	20505	10	0	0	1.282	No	1.645	No	1.960	No
AMERICIUM-241 (PCI/L)	**20705**	**19**	**-0.00426**	**-2.812**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
AMERICIUM-241 (PCI/L)	37405	14	0	0	1.282	No	1.645	No	1.960	No
AMERICIUM-241 (PCI/L)	37705	14	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	**15699**	**16**	**0**	**1.359**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
BENZENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	33703	13	0	-0....	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
BENZENE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
BROMOFORM (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	**88104**	**18**	**0**	**1.367**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
BROMOFORM (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	52505	19	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
BROMOMETHANE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	**00797**	**20**	**0**	**2.644**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CARBON TETRACHLORIDE (UG/L)	**04091**	**20**	**-0.115**	**-3.283**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CARBON TETRACHLORIDE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	15699	16	0	-0.25	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	**20205**	**16**	**0**	**1.97**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CARBON TETRACHLORIDE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	**23296**	**26**	**-1.518**	**-3.837**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CARBON TETRACHLORIDE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	00797	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	11502	8	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	15699	8	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	20205	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	20505	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	20705	8	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	23296	8	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	30002	8	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	33703	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	37405	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	37505	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	37705	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	40305	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	52505	9	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
Chlorodibromomethane (ug/L)	88104	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	90399	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	91203	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	91305	9	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	95099	8	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	99305	8	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane (ug/L)	99405	8	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	**00797**	**20**	**0**	**2.313**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CHLOROFORM (UG/L)	04091	20	0	-1.044	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	11502	11	0	0.902	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	**15699**	**16**	**-0.9251**	**-2.318**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CHLOROFORM (UG/L)	**20205**	**16**	**0**	**1.389**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
CHLOROFORM (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	**23296**	**26**	**-2.46**	**-3.747**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CHLOROFORM (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	**37405**	**16**	**0**	**-1.356**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
CHLOROFORM (UG/L)	37505	16	0	-1.25	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	15699	16	-3.568	-0....	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	**20505**	**13**	**-1.431**	**-1.417**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
cis-1,2-DICHLOROETHENE (UG/L)	**20705**	**16**	**0.08452**	**1.968**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
cis-1,2-DICHLOROETHENE (UG/L)	**23296**	**26**	**67.01**	**4.179**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
cis-1,2-DICHLOROETHENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	**33703**	**13**	**0.7361**	**3.212**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
cis-1,2-DICHLOROETHENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	45608	11	-10.55	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
cis-1,2-DICHLOROETHENE (UG/L)	**52505**	**20**	**0**	**1.628**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
cis-1,2-DICHLOROETHENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	**90399**	**23**	**0.1368**	**1.498**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
cis-1,2-DICHLOROETHENE (UG/L)	**91203**	**14**	**0.4398**	**2.869**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
cis-1,2-DICHLOROETHENE (UG/L)	91305	13	-0.6239	-0....	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	95199	21	0.06142	0.9477	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHENE (UG/L)	**99305**	**18**	**1.661**	**2.809**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
cis-1,2-DICHLOROETHENE (UG/L)	**99405**	**17**	**0.1152**	**1.873**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
DIBROMOCHLOROMETHANE (UG/L)	00797	11	0	0	1.282	No	1.645	No	1.960	No
DIBROMOCHLOROMETHANE (UG/L)	04091	13	0	0	1.282	No	1.645	No	1.960	No
DIBROMOCHLOROMETHANE (UG/L)	23296	18	0	0	1.282	No	1.645	No	1.960	No
DIBROMOCHLOROMETHANE (UG/L)	40305	10	0	0	1.282	No	1.645	No	1.960	No
DIBROMOCHLOROMETHANE (UG/L)	52505	11	0	0	1.282	No	1.645	No	1.960	No
DIBROMOCHLOROMETHANE (UG/L)	88104	9	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	52505	20	0	-0....	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	**00797**	**20**	**0**	**-1.426**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
METHYLENE CHLORIDE (UG/L)	**04091**	**20**	**0**	**-1.812**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
METHYLENE CHLORIDE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
METHYLENE CHLORIDE (UG/L)	**15699**	**16**	**0**	**-1.849**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
METHYLENE CHLORIDE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	20705	16	0	-0....	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	**23296**	**26**	**0**	**-2.134**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
METHYLENE CHLORIDE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	**40305**	**19**	**0**	**-2.282**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
METHYLENE CHLORIDE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	**88104**	**18**	**0**	**1.367**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
Nitrate + Nitrite as Nitrogen (mg/L)	37505	15	-1.095	-0....	1.282	No	1.645	No	1.960	No
Nitrate + Nitrite as Nitrogen (mg/L)	**37705**	**15**	**0.03891**	**2.206**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Nitrate + Nitrite as Nitrogen (mg/L)	**70099**	**28**	**-0.1612**	**-3.252**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Nitrate + Nitrite as Nitrogen (mg/L)	91305	12	0.01374	0.4055	1.282	No	1.645	No	1.960	No
Nitrate + Nitrite as Nitrogen (mg/L)	99305	19	0	0	1.282	No	1.645	No	1.960	No
Nitrate + Nitrite as Nitrogen (mg/L)	99405	17	0.02017	0	1.282	No	1.645	No	1.960	No
Nitrate + Nitrite as Nitrogen (mg/L)	**P210089**	**11**	**57.27**	**1.789**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
Plutonium-239, 240 (pCi/L)	**20205**	**13**	**0**	**-1.368**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
Plutonium-239, 240 (pCi/L)	20505	10	0	0	1.282	No	1.645	No	1.960	No
Plutonium-239, 240 (pCi/L)	20705	19	0	-1.138	1.282	No	1.645	No	1.960	No
Plutonium-239, 240 (pCi/L)	**37405**	**14**	**0**	**-1.6**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
Plutonium-239, 240 (pCi/L)	37705	14	0	0	1.282	No	1.645	No	1.960	No
PROPANE, 1,2-DIBROMO-3-CHLORO- (UG/L)	00797	9	0	0	1.282	No	1.645	No	1.960	No
PROPANE, 1,2-DIBROMO-3-CHLORO- (UG/L)	04091	12	0	0	1.282	No	1.645	No	1.960	No
PROPANE, 1,2-DIBROMO-3-CHLORO- (UG/L)	23296	18	0	0	1.282	No	1.645	No	1.960	No
PROPANE, 1,2-DIBROMO-3-CHLORO- (UG/L)	40305	10	0	0	1.282	No	1.645	No	1.960	No
PROPANE, 1,2-DIBROMO-3-CHLORO- (UG/L)	52505	11	0	0	1.282	No	1.645	No	1.960	No
PROPANE, 1,2-DIBROMO-3-CHLORO- (UG/L)	88104	9	0	0	1.282	No	1.645	No	1.960	No
PROPANE, 1,2-DIBROMO-3-CHLORO- (UG/L)	90399	13	0	0	1.282	No	1.645	No	1.960	No
PROPANE, 1,2-DIBROMO-3-CHLORO- (UG/L)	95099	13	0	0	1.282	No	1.645	No	1.960	No
PROPANE, 1,2-DIBROMO-3-CHLORO- (UG/L)	95199	13	0	0	1.282	No	1.645	No	1.960	No
PROPANE, 1,2-DIBROMO-3-CHLORO- (UG/L)	99305	10	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
STYRENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	**95199**	**21**	**0.1417**	**2.257**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TETRACHLOROETHENE (UG/L)	**99305**	**18**	**0.5003**	**2.661**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TETRACHLOROETHENE (UG/L)	**99405**	**17**	**0**	**1.324**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
TOLUENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	15699	16	0	0.25	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	33703	13	0	0.5529	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	45608	11	0	-1.088	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	90299	14	0	1.188	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	90399	23	0	0.2346	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
TOLUENE (UG/L)	95099	22	0	-0....	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	95199	21	0	0.4754	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	**95199**	**21**	**0**	**1.907**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
trans-1,2-DICHLOROETHENE (UG/L)	**99305**	**18**	**0.02264**	**3.016**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
trans-1,2-DICHLOROETHENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	45608	10	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
trans-1,3-DICHLOROPROPENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
trans-1,3-DICHLOROPROPENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	00797	21	0	-0....	1.282	No	1.645	No	1.960	No
Uranium (ug/L)	**70099**	**28**	**5.848**	**1.586**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
Uranium (ug/L)	**88104**	**22**	**-18.09**	**-3.468**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Uranium (ug/L)	91305	12	-2.984	-0....	1.282	No	1.645	No	1.960	No
Uranium (ug/L)	**99305**	**21**	**3.33**	**2.907**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Uranium (ug/L)	**99405**	**22**	**-64.8**	**-3.565**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Uranium (ug/L)	**P210089**	**11**	**4.603**	**2.683**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
VINYL CHLORIDE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	**15699**	**16**	**1.671**	**4.005**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
VINYL CHLORIDE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	**20505**	**13**	**-0.2183**	**-1.684**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
VINYL CHLORIDE (UG/L)	**20705**	**16**	**0.1047**	**1.604**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
VINYL CHLORIDE (UG/L)	**23296**	**26**	**0**	**2.482**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
VINYL CHLORIDE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	**33703**	**13**	**3.247**	**2.832**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
VINYL CHLORIDE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	**45608**	**11**	**5.924**	**2.004**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
VINYL CHLORIDE (UG/L)	**52505**	**20**	**0**	**1.642**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
VINYL CHLORIDE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
VINYL CHLORIDE (UG/L)	91305	13	0	-0....	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	99305	18	0	1.162	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	**90299**	**14**	**-0.1619**	**-2.153**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CARBON TETRACHLORIDE (UG/L)	90399	23	-3.671	-0....	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	**91203**	**14**	**-8.396**	**-2.35**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CARBON TETRACHLORIDE (UG/L)	91305	13	0	1.188	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	95099	22	0	0.2609	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	95199	21	0	-0....	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE (UG/L)	99405	17	0	0.121	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	20705	15	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	**33703**	**13**	**-4.713**	**-3.402**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CHLOROBENZENE (UG/L)	37405	16	0	0.25	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
CHLOROBENZENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	**37705**	**16**	**0**	**-2.241**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CHLOROFORM (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	**90299**	**14**	**-0.3595**	**-1.575**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
CHLOROFORM (UG/L)	90399	23	-0.3902	-0.259	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	**91203**	**14**	**-0.7458**	**-1.709**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
CHLOROFORM (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	95099	22	0	-1.249	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	95199	21	0	0.3984	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	99305	18	0	-0....	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	00797	20	0	0.9682	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	37705	16	0	0.75	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
CHLOROMETHANE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
DIBROMOCHLOROMETHANE (UG/L)	90399	14	0	0	1.282	No	1.645	No	1.960	No
DIBROMOCHLOROMETHANE (UG/L)	95099	14	0	0	1.282	No	1.645	No	1.960	No
DIBROMOCHLOROMETHANE (UG/L)	95199	14	0	0	1.282	No	1.645	No	1.960	No
DIBROMOCHLOROMETHANE (UG/L)	99305	10	0	0	1.282	No	1.645	No	1.960	No
DIBROMOCHLOROMETHANE (UG/L)	99405	9	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	00797	16	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	04091	18	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	15699	13	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	20205	12	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	20505	9	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	20705	12	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	23296	23	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	30002	11	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	33703	9	0	1.061	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	37405	12	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	37505	12	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	37705	12	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	40305	15	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	52505	16	0	1.25	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	88104	15	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	90299	11	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	90399	19	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	91203	10	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	91305	9	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	95099	19	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	95199	19	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	99305	15	0	0	1.282	No	1.645	No	1.960	No
ETHYLBENZENE (UG/L)	99405	14	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
HEXACHLOROBUTADIENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	**90299**	**14**	**-0.00...**	**-2.559**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
METHYLENE CHLORIDE (UG/L)	**90399**	**23**	**0**	**-2.595**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
METHYLENE CHLORIDE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	**95099**	**22**	**0**	**-2.903**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
METHYLENE CHLORIDE (UG/L)	**95199**	**21**	**0**	**-2.873**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
METHYLENE CHLORIDE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	00797	20	0	0.1936	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	15699	16	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	20705	16	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	23296	26	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	33703	13	0	1.25	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	90399	23	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
NAPHTHALENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
Nitrate + Nitrite as Nitrogen (mg/L)	20705	9	0	-0....	1.282	No	1.645	No	1.960	No
Nitrate + Nitrite as Nitrogen (mg/L)	**37405**	**15**	**0.3219**	**1.641**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
STYRENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	45608	11	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	90299	14	0	0.5941	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	90399	23	0	0.4754	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	91203	14	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	**04091**	**20**	**-0.05948**	**-2.665**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TETRACHLOROETHENE (UG/L)	11502	11	-1.021	-0....	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	**15699**	**16**	**-81.33**	**-2.837**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TETRACHLOROETHENE (UG/L)	**20205**	**16**	**0**	**2.441**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TETRACHLOROETHENE (UG/L)	20505	13	0	-1.261	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	20705	15	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	**23296**	**26**	**-2.06**	**-4.37**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TETRACHLOROETHENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	33703	13	0	-1.25	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	**40305**	**19**	**0.1134**	**2.698**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TETRACHLOROETHENE (UG/L)	**45608**	**11**	**1.369**	**2.321**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TETRACHLOROETHENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	88104	18	0	-0....	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	**90299**	**14**	**0**	**-2.067**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TETRACHLOROETHENE (UG/L)	90399	23	-0.06845	-0.259	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	91203	14	0.5344	0.5371	1.282	No	1.645	No	1.960	No

Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
TETRACHLOROETHENE (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	95099	22	0	-0....	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	33703	13	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	45608	9	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	**52505**	**20**	**0**	**1.356**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
TOTAL XYLENES (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	90399	23	0	-0....	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	91203	14	0	1.261	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	91305	13	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	95099	22	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	95199	21	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	99305	18	0	0	1.282	No	1.645	No	1.960	No
TOTAL XYLENES (UG/L)	99405	17	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	00797	20	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	04091	20	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	11502	11	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	**15699**	**16**	**0.1318**	**3.699**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
trans-1,2-DICHLOROETHENE (UG/L)	20205	16	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	20505	13	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	20705	16	0	0.8767	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	**23296**	**26**	**0.2754**	**3.805**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
trans-1,2-DICHLOROETHENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	**33703**	**13**	**0.5878**	**3.45**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
trans-1,2-DICHLOROETHENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	40305	19	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	**45608**	**11**	**-2.884**	**-1.525**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
trans-1,2-DICHLOROETHENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	88104	18	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETHENE (UG/L)	90299	14	0	0	1.282	No	1.645	No	1.960	No

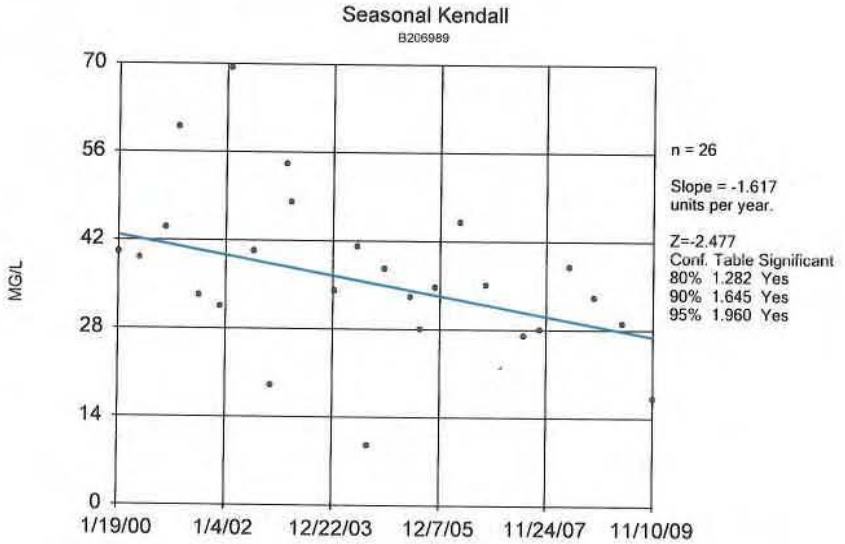
Sentinel Wells, S-K Trending

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA S wells, SWD&CPro_09 Printed 3/2/2010, 6:52 PM

Constituent Name	Well	N	Slope	Z	80% Table	Significant @ 80%	90% Table	Significant @ 90%	95% Table	Significant @ 95%
TRICHLOROETHENE (UG/L)	**04091**	**20**	**0**	**-1.778**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
TRICHLOROETHENE (UG/L)	11502	11	0	-0....	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	**15699**	**16**	**-151.3**	**-2.321**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TRICHLOROETHENE (UG/L)	**20205**	**16**	**0**	**1.729**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
TRICHLOROETHENE (UG/L)	20505	13	-0.617	-0.945	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	20705	16	0	0.1129	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	**23296**	**26**	**-48.75**	**-2.76**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TRICHLOROETHENE (UG/L)	30002	14	0	0	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	**33703**	**13**	**0**	**1.901**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
TRICHLOROETHENE (UG/L)	37405	16	0	0	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	37505	16	0	0	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	37705	16	0	0	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	40305	19	0	-0....	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	**45608**	**11**	**11.62**	**2.321**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TRICHLOROETHENE (UG/L)	52505	20	0	0	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	88104	18	0	0.3906	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	**90299**	**14**	**-0.4889**	**-3.046**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TRICHLOROETHENE (UG/L)	**90399**	**23**	**15.18**	**1.552**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
TRICHLOROETHENE (UG/L)	91203	14	0.1749	0.2136	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	**91305**	**13**	**0.05391**	**2.298**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TRICHLOROETHENE (UG/L)	95099	22	0	-0....	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	**95199**	**21**	**3.235**	**1.473**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
TRICHLOROETHENE (UG/L)	**99305**	**18**	**8.449**	**2.218**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
TRICHLOROETHENE (UG/L)	**99405**	**17**	**2.821**	**2.007**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Uranium (ug/L)	**00797**	**21**	**1.194**	**4.25**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Uranium (ug/L)	11502	11	-0.08902	-0.305	1.282	No	1.645	No	1.960	No
Uranium (ug/L)	**20205**	**11**	**6.005**	**2.981**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Uranium (ug/L)	20505	11	0.8474	0.2981	1.282	No	1.645	No	1.960	No
Uranium (ug/L)	**20705**	**17**	**1.757**	**3.45**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Uranium (ug/L)	**23296**	**25**	**-1.771**	**-1.705**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
Uranium (ug/L)	37405	18	-0.04203	-0....	1.282	No	1.645	No	1.960	No
Uranium (ug/L)	**37505**	**16**	**0.1931**	**2.321**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Uranium (ug/L)	37705	16	0.9335	0.7736	1.282	No	1.645	No	1.960	No
Uranium (ug/L)	40305	20	0.01447	0.8767	1.282	No	1.645	No	1.960	No

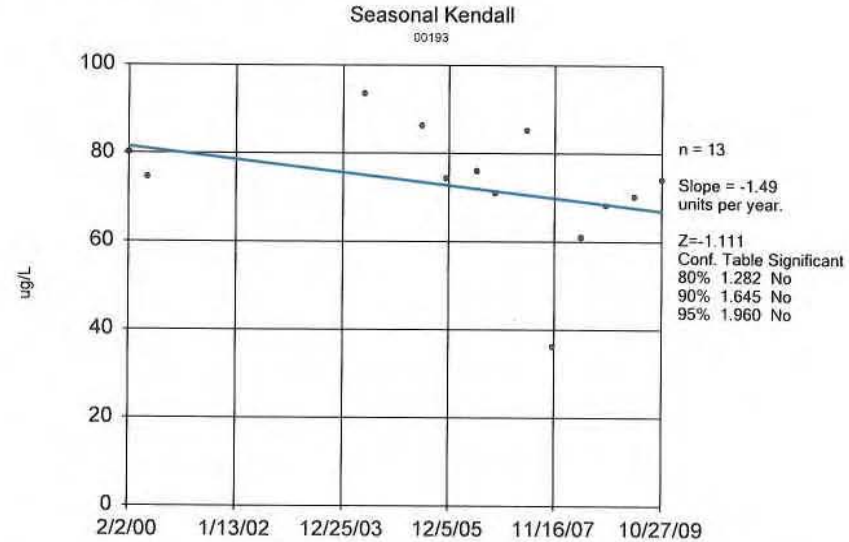
B.3.1.2 Selected AOC Well Data

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



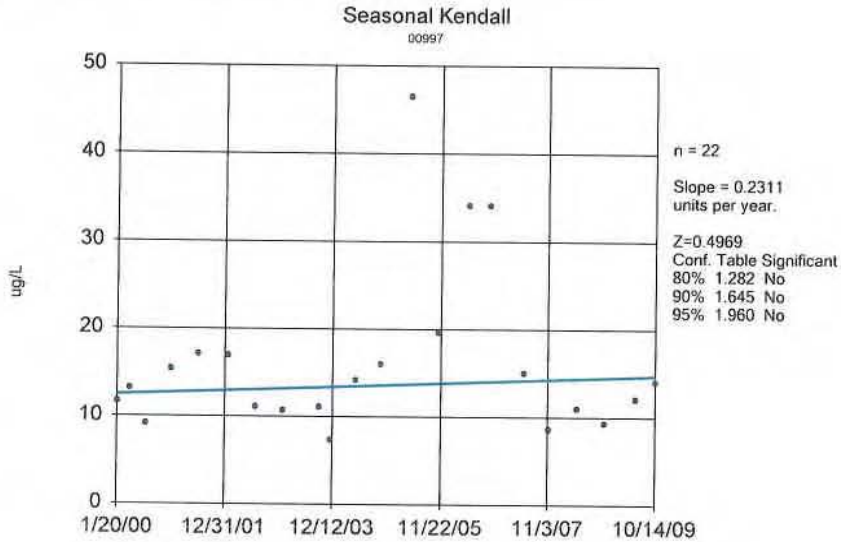
Constituent: Nitrate + Nitrite as Nitrogen Analysis Run 3/22/2010 9:53 AM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA AOC wells, SWD&CPro_selected0

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



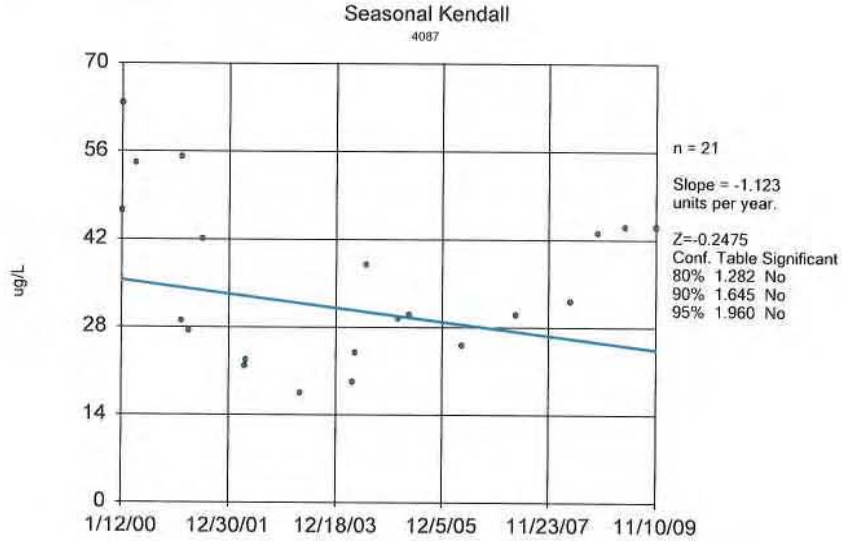
Constituent: Uranium Analysis Run 3/22/2010 9:53 AM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA AOC wells, SWD&CPro_selected0

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



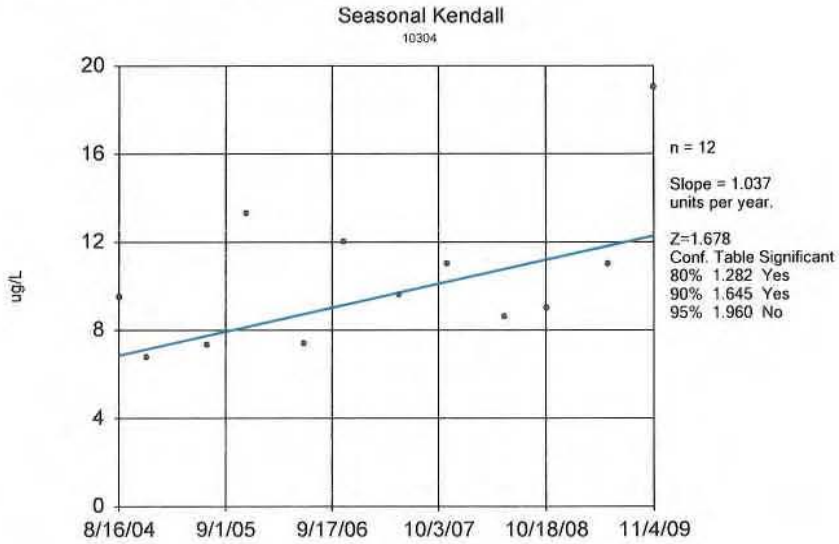
Constituent: Uranium Analysis Run 3/22/2010 9:53 AM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA AOC wells, SWD&CPro_selected0

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



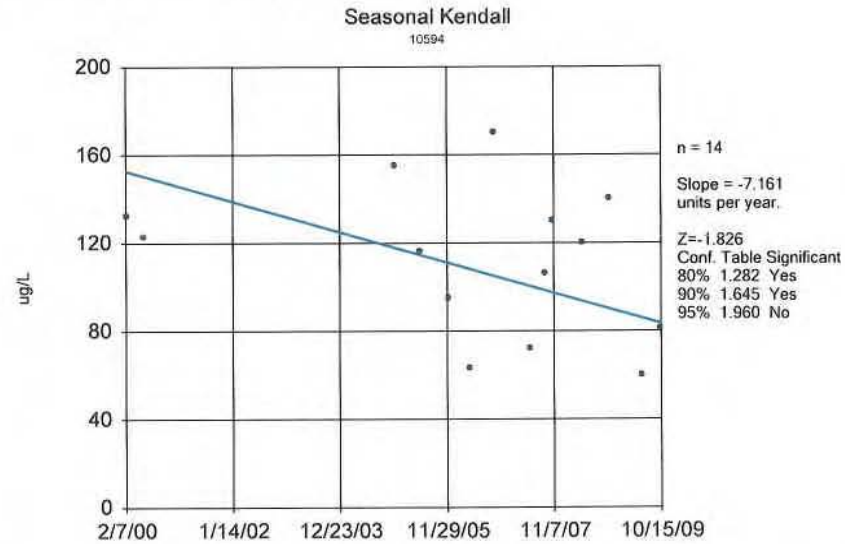
Constituent: Uranium Analysis Run 3/22/2010 9:53 AM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA AOC wells, SWD&CPro_selected0

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



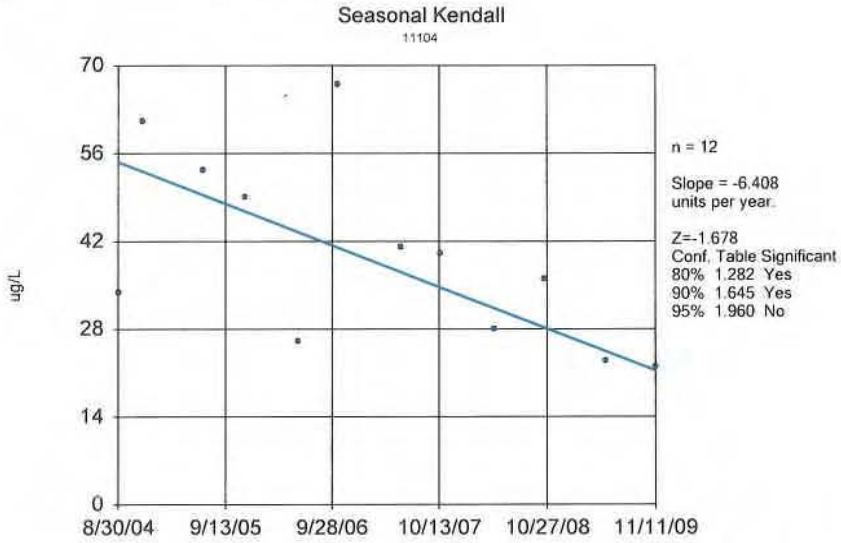
Constituent: Uranium Analysis Run 3/22/2010 9:53 AM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA AOC wells, SWD&CPro_selected0

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



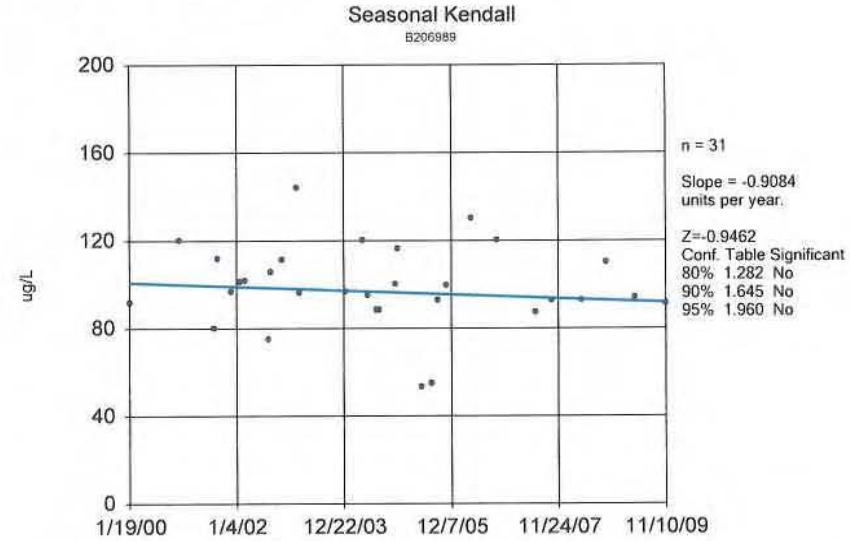
Constituent: Uranium Analysis Run 3/22/2010 9:53 AM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA AOC wells, SWD&CPro_selected0

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: Uranium Analysis Run 3/22/2010 9:53 AM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA AOC wells, SWD&CPro_selected0

v.9.0.32 For the statistical analyses of ground water by SM Stoller only. EPA



Constituent: Uranium Analysis Run 3/22/2010 9:53 AM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA AOC wells, SWD&CPro_selected0

Seasonal Kendall

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA AOC wells, SWD&CPro_selected09 Printed 3/22/2010, 9:55 AM

Constituent	Well	N	Slope	Z	80%	Sig.	90%	Sig.	95%	Sig.
Nitrate + Nitrite as Nitrogen (MG/L)	**B206989**	**26**	**-1.617**	**-2.477**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Uranium (ug/L)	00193	13	-1.49	-1.111	1.282	No	1.645	No	1.960	No
Uranium (ug/L)	00997	22	0.2311	0.4969	1.282	No	1.645	No	1.960	No
Uranium (ug/L)	4087	21	-1.123	-0....	1.282	No	1.645	No	1.960	No
Uranium (ug/L)	**10304**	**12**	**1.037**	**1.678**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
Uranium (ug/L)	**10594**	**14**	**-7.161**	**-1.826**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
Uranium (ug/L)	**11104**	**12**	**-6.408**	**-1.678**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
Uranium (ug/L)	B206989	31	-0.9084	-0....	1.282	No	1.645	No	1.960	No

B.3.2 ANOVA and Seasonal-Kendall Results for the PLF and OLF

B.3.2.1 PLF ANOVA Summary

Non-Parametric ANOVA

Constituent: 1,1,1-TRICHLOROETHANE Analysis Run 2/17/2010 6:14 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/17/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 134.6

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 13 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 111.7
Adjusted Kruskal-Wallis statistic (H') = 134.6

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73105	-51.36	25.39	No
73205	-51.36	25.39	No
73005	-51.36	26.07	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: 1,1-DICHLOROETHENE Analysis Run 2/17/2010 6:14 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 138.8

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 12 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 112.3
Adjusted Kruskal-Wallis statistic (H') = 138.8

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	-49.01	26.22	No
73105	-49.01	25.54	No
73205	-49.01	25.54	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: Boron Analysis Run 2/17/2010 6:14 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 12/28/2005 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 89.38

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 22 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 89.3
Adjusted Kruskal-Wallis statistic (H') = 89.38

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in 3 of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	28.9	17.96	Yes
73205	48.9	17.55	Yes
73105	65.9	17.55	Yes

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison.

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: CARBON TETRACHLORIDE Analysis Run 2/17/2010 6:14 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 71.78

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 7 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 37.92
Adjusted Kruskal-Wallis statistic (H') = 71.78

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	-25.6	26.22	No
73205	-25.6	25.54	No
73105	-25.6	25.54	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: CHLOROFORM Analysis Run 2/17/2010 6:14 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 59.15

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 8 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 24.66
Adjusted Kruskal-Wallis statistic (H') = 59.15

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	-16.69	26.22	No
73205	-16.69	25.54	No
73105	-1.896	25.54	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: CHROMIUM Analysis Run 2/17/2010 6:14 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 12.01

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 4.009
Adjusted Kruskal-Wallis statistic (H') = 12.01

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	3.02	25.02	No
73205	-6.877	24.38	No
73105	-11.23	24.38	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: cis-1,2-DICHLOROETHENE Analysis Run 2/17/2010 6:15 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 17.3

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 3 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 3.65
Adjusted Kruskal-Wallis statistic (H') = 17.3

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	-8.778	26.22	No
73205	-8.778	25.54	No
73105	-8.778	25.54	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: COPPER Analysis Run 2/17/2010 6:15 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 11.8

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 3.388
Adjusted Kruskal-Wallis statistic (H') = 11.8

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	-8.785	25.02	No
73205	10.13	24.38	No
73105	-8.785	24.38	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: NICKEL Analysis Run 2/17/2010 6:15 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 15.1

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 11 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 10.35
Adjusted Kruskal-Wallis statistic (H') = 15.1

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	-8.974	25.02	No
73205	10.99	24.38	No
73105	13.96	24.38	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: SELENIUM Analysis Run 2/17/2010 6:15 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 118.6

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 12 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 101.9
Adjusted Kruskal-Wallis statistic (H') = 118.6

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in 2 of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73105	-24.51	24.38	No
73005	50.86	25.02	Yes
73205	77.99	24.38	Yes

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison.

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: TETRACHLOROETHENE Analysis Run 2/17/2010 6:15 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 139.9

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 15 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 113.1
Adjusted Kruskal-Wallis statistic (H') = 139.9

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	-49.01	26.22	No
73105	-49.01	25.54	No
73205	-49.01	25.54	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: TRICHLOROETHENE Analysis Run 2/17/2010 6:15 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 147.4

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 8 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 121.1
Adjusted Kruskal-Wallis statistic (H') = 147.4

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	-50.47	26.22	No
73105	-50.47	25.54	No
73205	-50.47	25.54	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: Uranium Analysis Run 2/17/2010 6:15 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/11/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 82.01

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 14 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 78.43
Adjusted Kruskal-Wallis statistic (H') = 82.01

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in 3 of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73005	44.2	24.91	Yes
73105	51.53	24.22	Yes
73205	84.03	24.22	Yes

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison.

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: ZINC Analysis Run 2/17/2010 6:15 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 1/17/2000 and 11/10/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 16.46

Tabulated Chi-Squared value = 11.07 with 3 degrees of freedom at the 5% significance level.

There were 18 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 14.14
Adjusted Kruskal-Wallis statistic (H') = 16.46

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in 1 of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
73205	7.245	24.09	No
73105	35.98	24.09	Yes
73005	24.63	24.72	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison.

Non-parametric test used in lieu of parametric anova because the Chi Squared normality test showed the residuals to be non-normal at the 0.01 alpha level.

Analysis of Variance, PLF

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 6:25 PM

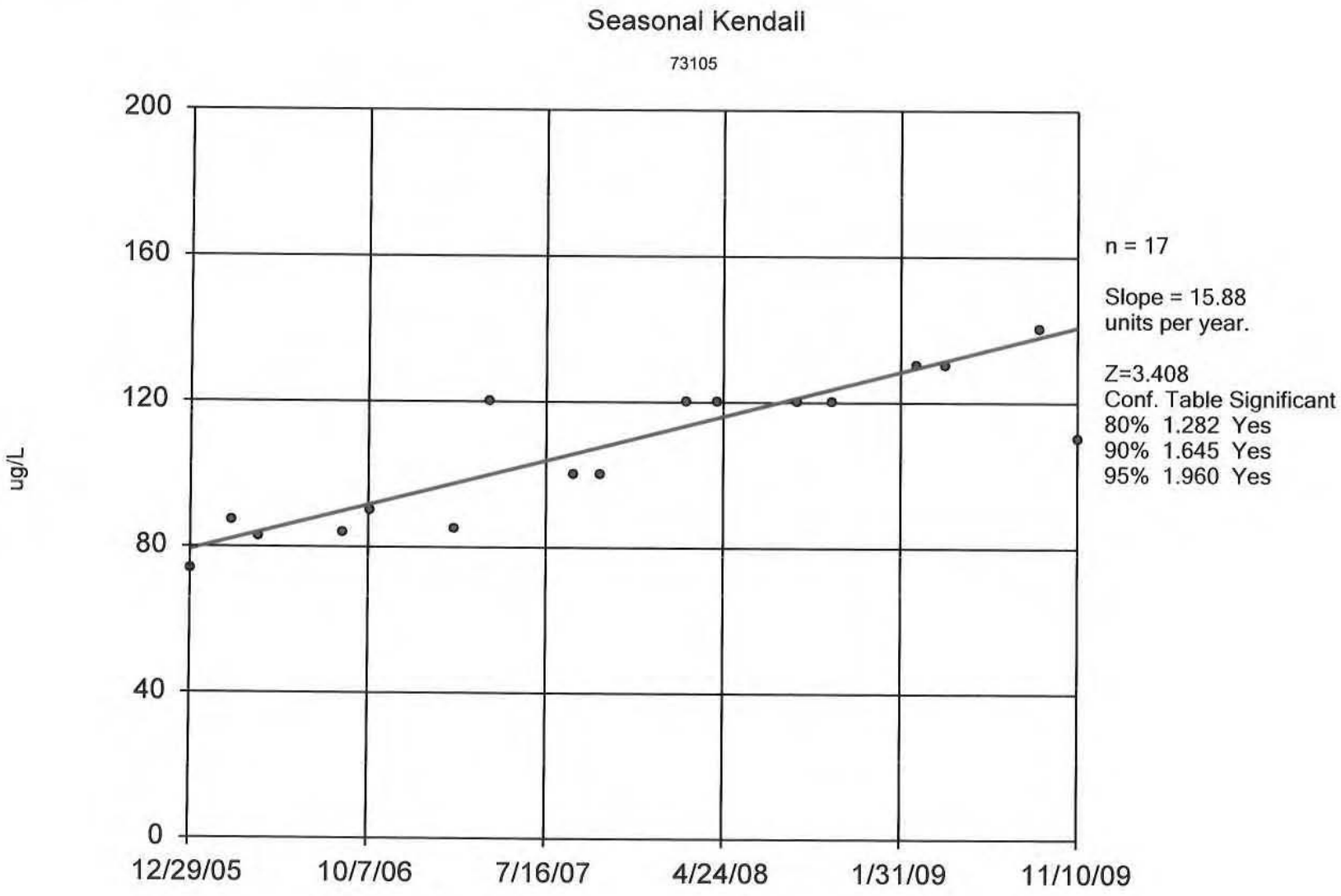
Constituent	Well	Calc.	Crit.	Sig.	Alpha	Transform	ANOVA Sig.	Alpha	Method
1,1,1-TRICHLOROETHANE...	73105	-51.36	25.39	No	0.01667	n/a	Yes	0.05	NP (normality)
1,1,1-TRICHLOROETHANE...	73205	-51.36	25.39	No	0.01667	n/a	Yes	0.05	NP (normality)
1,1,1-TRICHLOROETHANE...	73005	-51.36	26.07	No	0.01667	n/a	Yes	0.05	NP (normality)
1,1-DICHLOROETHENE (U...	73005	-49.01	26.22	No	0.01667	n/a	Yes	0.05	NP (normality)
1,1-DICHLOROETHENE (U...	73105	-49.01	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
1,1-DICHLOROETHENE (U...	73205	-49.01	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
1,3-DICHLOROBENZENE (...	73005	-5.935	26.22	No	0.01667	n/a	No	0.05	NP (normality)
1,3-DICHLOROBENZENE (...	73205	-1.259	25.54	No	0.01667	n/a	No	0.05	NP (normality)
1,3-DICHLOROBENZENE (...	73105	7.447	25.54	No	0.01667	n/a	No	0.05	NP (normality)
ARSENIC (UG/L)	73005	1.211	25.02	No	0.01667	n/a	No	0.05	NP (normality)
ARSENIC (UG/L)	73205	0.805	24.38	No	0.01667	n/a	No	0.05	NP (normality)
ARSENIC (UG/L)	73105	0.7462	24.38	No	0.01667	n/a	No	0.05	NP (normality)
BERYLLIUM (UG/L)	73005	-0.75	25.02	No	0.01667	n/a	No	0.05	NP (normality)
BERYLLIUM (UG/L)	73205	-0.75	24.38	No	0.01667	n/a	No	0.05	NP (normality)
BERYLLIUM (UG/L)	73105	-0.75	24.38	No	0.01667	n/a	No	0.05	NP (normality)
Boron (ug/L)	**73005**	**28.9**	**17.96**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
Boron (ug/L)	**73205**	**48.9**	**17.55**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
Boron (ug/L)	**73105**	**65.9**	**17.55**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
CADMIUM (UG/L)	73005	4.195	25.02	No	0.01667	n/a	No	0.05	NP (normality)
CADMIUM (UG/L)	73205	12.04	24.38	No	0.01667	n/a	No	0.05	NP (normality)
CADMIUM (UG/L)	73105	-6.548	24.38	No	0.01667	n/a	No	0.05	NP (normality)
CARBON TETRACHLORIDE ...	73005	-25.6	26.22	No	0.01667	n/a	Yes	0.05	NP (normality)
CARBON TETRACHLORIDE ...	73205	-25.6	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
CARBON TETRACHLORIDE ...	73105	-25.6	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
CHLOROFORM (UG/L)	73005	-16.69	26.22	No	0.01667	n/a	Yes	0.05	NP (normality)
CHLOROFORM (UG/L)	73205	-16.69	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
CHLOROFORM (UG/L)	73105	-1.896	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
CHLOROMETHANE (UG/L)	73005	-0.7407	26.22	No	0.01667	n/a	No	0.05	NP (normality)
CHLOROMETHANE (UG/L)	73205	3.906	25.54	No	0.01667	n/a	No	0.05	NP (normality)
CHLOROMETHANE (UG/L)	73105	3.847	25.54	No	0.01667	n/a	No	0.05	NP (normality)
CHROMIUM (UG/L)	73005	3.02	25.02	No	0.01667	n/a	Yes	0.05	NP (normality)
CHROMIUM (UG/L)	73205	-6.877	24.38	No	0.01667	n/a	Yes	0.05	NP (normality)
CHROMIUM (UG/L)	73105	-11.23	24.38	No	0.01667	n/a	Yes	0.05	NP (normality)
cis-1,2-DICHLOROETHEN...	73005	-8.778	26.22	No	0.01667	n/a	Yes	0.05	NP (normality)
cis-1,2-DICHLOROETHEN...	73205	-8.778	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
cis-1,2-DICHLOROETHEN...	73105	-8.778	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
COPPER (UG/L)	73005	-8.785	25.02	No	0.01667	n/a	Yes	0.05	NP (normality)
COPPER (UG/L)	73205	10.13	24.38	No	0.01667	n/a	Yes	0.05	NP (normality)
COPPER (UG/L)	73105	-8.785	24.38	No	0.01667	n/a	Yes	0.05	NP (normality)
LEAD (UG/L)	73005	-5.25	25.02	No	0.01667	n/a	No	0.05	NP (normality)

Analysis of Variance, PLF

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 6:25 PM

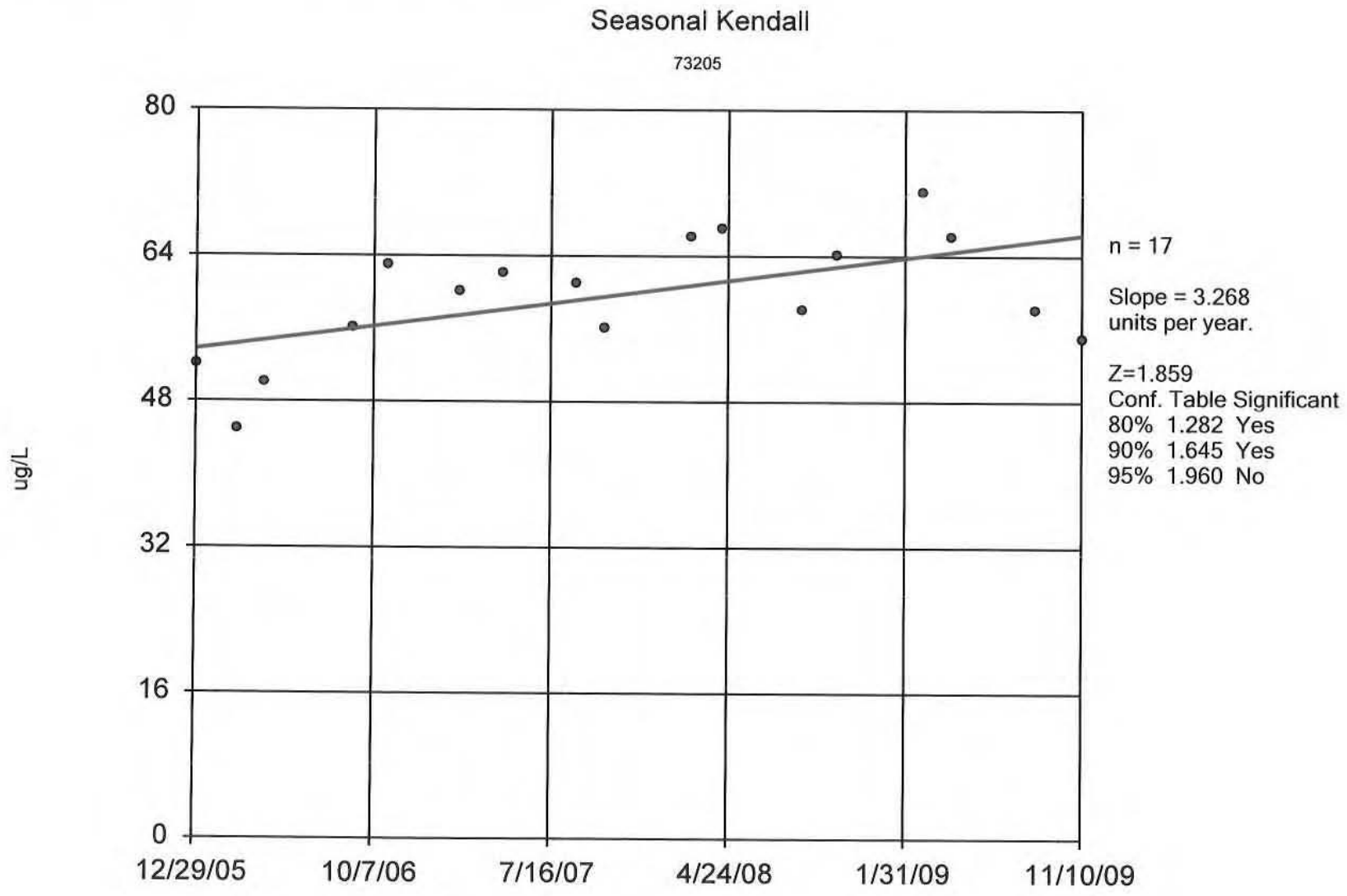
Constituent	Well	Calc.	Crit.	Sig.	Alpha	Transform	ANOVA Sig.	Alpha	Method
LEAD (UG/L)	73205	-5.25	24.38	No	0.01667	n/a	No	0.05	NP (normality)
LEAD (UG/L)	73105	-5.25	24.38	No	0.01667	n/a	No	0.05	NP (normality)
m,p-Xylene (ug/L)	73005	0	10.77	No	0.01667	n/a	No	0.05	NP (normality)
m,p-Xylene (ug/L)	73105	2.833	10.04	No	0.01667	n/a	No	0.05	NP (normality)
m,p-Xylene (ug/L)	73205	0	10.77	No	0.01667	n/a	No	0.05	NP (normality)
MERCURY (UG/L)	73005	-3.02	24.72	No	0.01667	n/a	No	0.05	NP (normality)
MERCURY (UG/L)	73205	-3.02	24.09	No	0.01667	n/a	No	0.05	NP (normality)
MERCURY (UG/L)	73105	-3.02	24.09	No	0.01667	n/a	No	0.05	NP (normality)
METHYLENE CHLORIDE (U...	73005	-3.633	26.22	No	0.01667	n/a	No	0.05	NP (normality)
METHYLENE CHLORIDE (U...	73205	-4.256	25.54	No	0.01667	n/a	No	0.05	NP (normality)
METHYLENE CHLORIDE (U...	73105	-3.727	25.54	No	0.01667	n/a	No	0.05	NP (normality)
NICKEL (UG/L)	73005	-8.974	25.02	No	0.01667	n/a	Yes	0.05	NP (normality)
NICKEL (UG/L)	73205	10.99	24.38	No	0.01667	n/a	Yes	0.05	NP (normality)
NICKEL (UG/L)	73105	13.96	24.38	No	0.01667	n/a	Yes	0.05	NP (normality)
SELENIUM (UG/L)	73105	-24.51	24.38	No	0.01667	n/a	Yes	0.05	NP (normality)
SELENIUM (UG/L)	**73005**	**50.86**	**25.02**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
SELENIUM (UG/L)	**73205**	**77.99**	**24.38**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
SILVER (UG/L)	73005	2.474	25.02	No	0.01667	n/a	No	0.05	NP (normality)
SILVER (UG/L)	73205	-2.245	24.38	No	0.01667	n/a	No	0.05	NP (normality)
SILVER (UG/L)	73105	-2.245	24.38	No	0.01667	n/a	No	0.05	NP (normality)
TETRACHLOROETHENE (UG/L)	73005	-49.01	26.22	No	0.01667	n/a	Yes	0.05	NP (normality)
TETRACHLOROETHENE (UG/L)	73105	-49.01	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
TETRACHLOROETHENE (UG/L)	73205	-49.01	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
TOLUENE (UG/L)	73005	-2.949	26.22	No	0.01667	n/a	No	0.05	NP (normality)
TOLUENE (UG/L)	73205	1.727	25.54	No	0.01667	n/a	No	0.05	NP (normality)
TOLUENE (UG/L)	73105	6.169	25.54	No	0.01667	n/a	No	0.05	NP (normality)
Total Xylene (ug/L)	73105	-1.958	11.97	No	0.01667	n/a	No	0.05	NP (normality)
Total Xylene (ug/L)	73005	-1.958	12.6	No	0.01667	n/a	No	0.05	NP (normality)
Total Xylene (ug/L)	73205	-1.958	11.97	No	0.01667	n/a	No	0.05	NP (normality)
TRICHLOROETHENE (UG/L)	73005	-50.47	26.22	No	0.01667	n/a	Yes	0.05	NP (normality)
TRICHLOROETHENE (UG/L)	73105	-50.47	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
TRICHLOROETHENE (UG/L)	73205	-50.47	25.54	No	0.01667	n/a	Yes	0.05	NP (normality)
Uranium (ug/L)	**73005**	**44.2**	**24.91**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
Uranium (ug/L)	**73105**	**51.53**	**24.22**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
Uranium (ug/L)	**73205**	**84.03**	**24.22**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
ZINC (UG/L)	73205	7.245	24.09	No	0.01667	n/a	Yes	0.05	NP (normality)
ZINC (UG/L)	**73105**	**35.98**	**24.09**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
ZINC (UG/L)	73005	24.63	24.72	No	0.01667	n/a	Yes	0.05	NP (normality)

B.3.2.2 PLF S-K Plots and Summary Tables



Constituent: Boron Analysis Run 2/17/2010 6:58 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

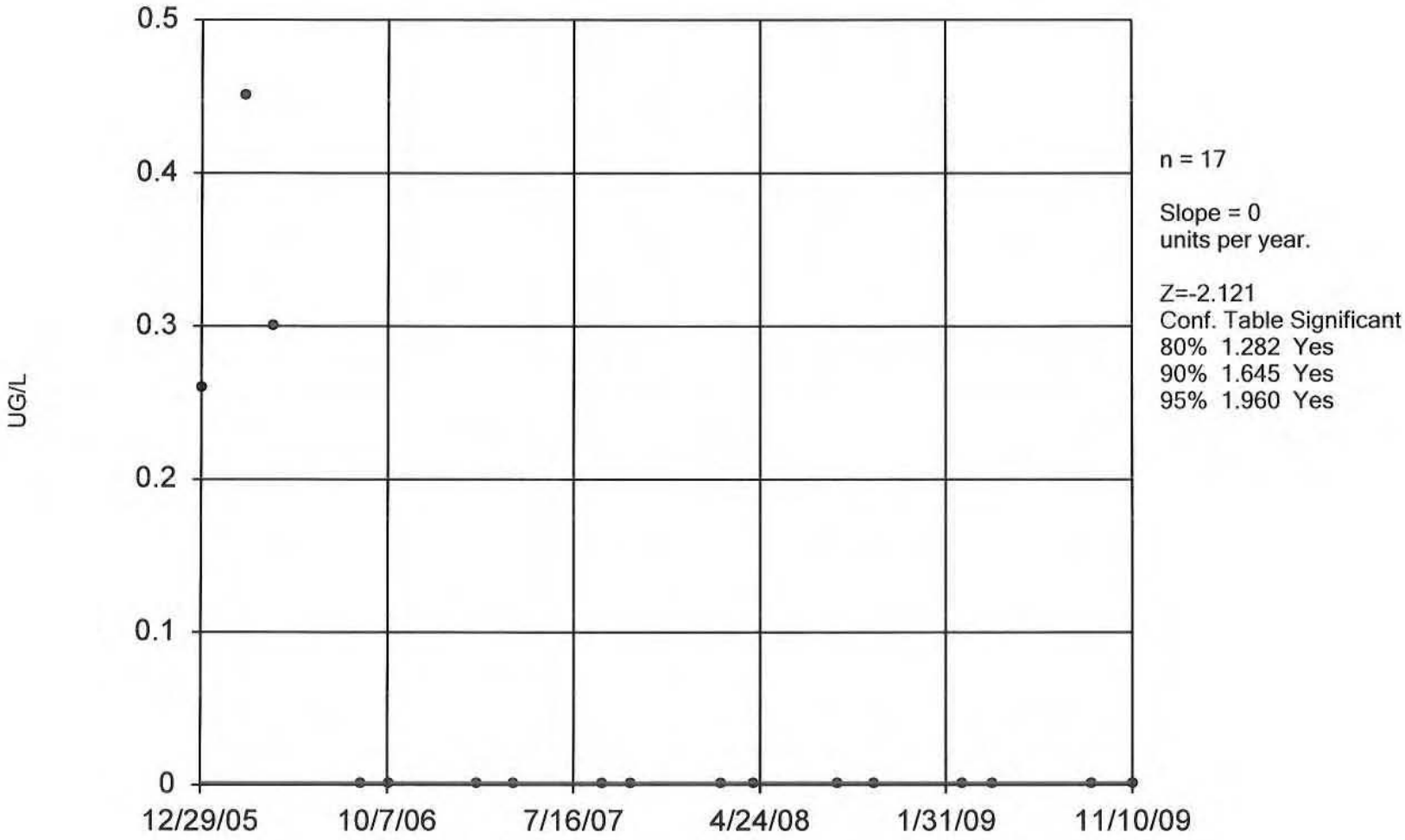


Constituent: Boron Analysis Run 2/17/2010 6:58 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

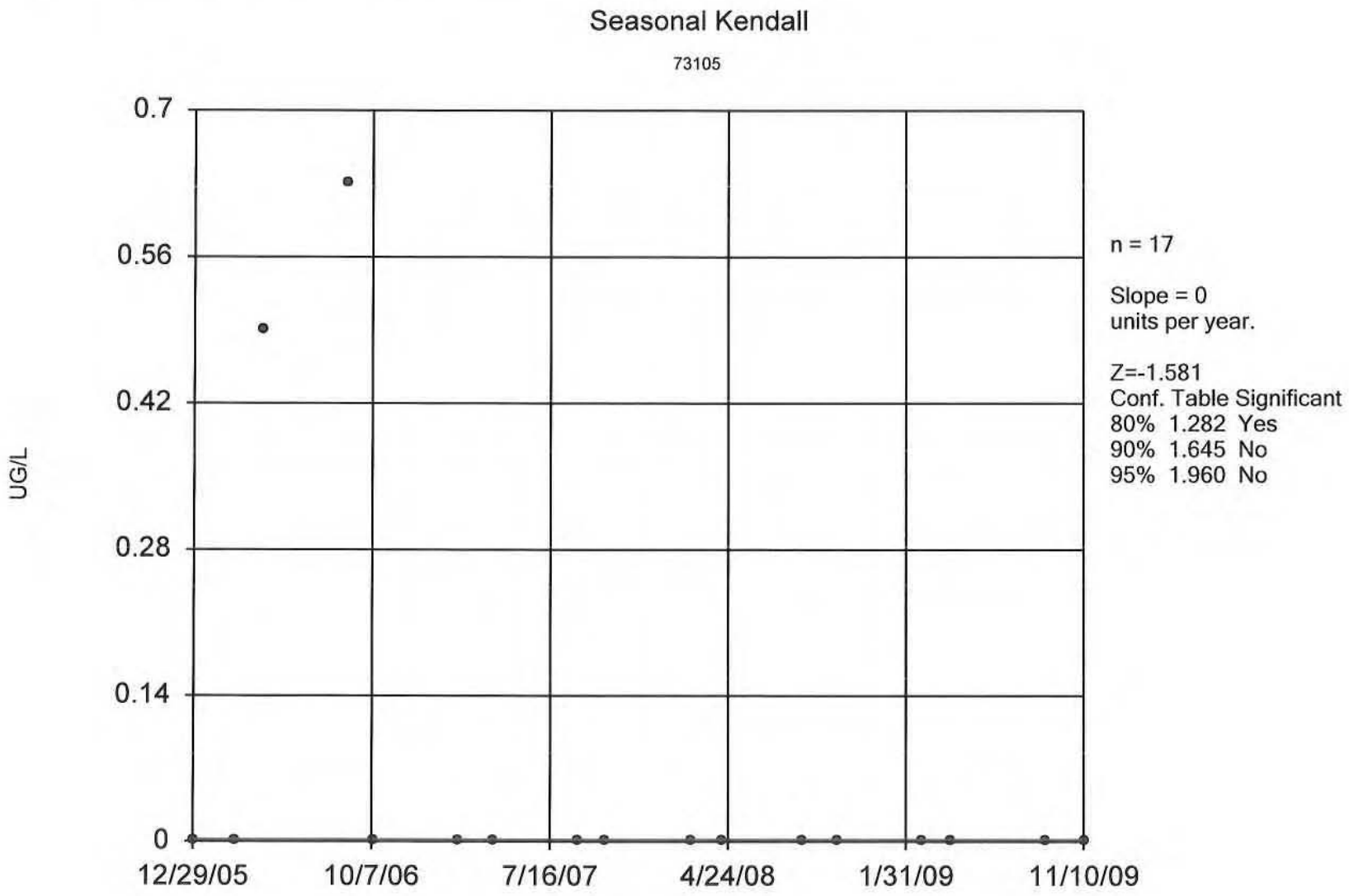
Seasonal Kendall

73105



Constituent: CHLOROFORM Analysis Run 2/17/2010 6:58 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09



Constituent: TOLUENE Analysis Run 2/17/2010 7:00 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

Seasonal Kendall, PLF Downgradient Wells

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 7:03 PM

Constituent	Well	N	Slope	Z	80%	Sig.	90%	Sig.	95%	Sig.
1,1,1-TRICHLOROETHANE...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE...	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROET...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROET...	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE...	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (U...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (U...	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZEN...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZEN...	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chlorop...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chlorop...	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (...	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (U...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (U...	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (...	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (...	73205	17	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (...	73105	17	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (...	73205	17	0	0	1.282	No	1.645	No	1.960	No
ARSENIC (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
ARSENIC (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
BERYLLIUM (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
BERYLLIUM (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
Boron (ug/L)	**73105**	**17**	**15.88**	**3.408**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Boron (ug/L)	**73205**	**17**	**3.268**	**1.859**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
BROMODICHLOROMETHANE ...	73105	17	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE ...	73205	17	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
CADMIUM (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
CADMIUM (UG/L)	73205	17	0	0.3948	1.282	No	1.645	No	1.960	No

Seasonal Kendall, PLF Downgradient Wells

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 7:03 PM

Constituent	Well	N	Slope	Z	80%	Sig.	90%	Sig.	95%	Sig.
CARBON TETRACHLORIDE ...	73105	17	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE ...	73205	17	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane ...	73105	17	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane ...	73205	17	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	**73105**	**17**	**0**	**-2.121**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
CHLOROFORM (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	73105	17	0	-0....	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	73205	17	0	-0....	1.282	No	1.645	No	1.960	No
CHROMIUM (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
CHROMIUM (UG/L)	73205	17	0	0.8944	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHEN...	73105	17	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHEN...	73205	17	0	0	1.282	No	1.645	No	1.960	No
COPPER (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
COPPER (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (...	73105	17	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (...	73205	17	0	0	1.282	No	1.645	No	1.960	No
LEAD (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
LEAD (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
MERCURY (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
MERCURY (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (U...	73105	17	0	-1.061	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (U...	73205	17	0	-1.061	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
NICKEL (UG/L)	73105	17	0	0.3381	1.282	No	1.645	No	1.960	No
NICKEL (UG/L)	73205	17	0	-0....	1.282	No	1.645	No	1.960	No
SELENIUM (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
SELENIUM (UG/L)	73205	17	5.014	0	1.282	No	1.645	No	1.960	No
SILVER (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
SILVER (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	**73105**	**17**	**0**	**-1.581**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
TOLUENE (UG/L)	73205	17	0	-0....	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETH...	73105	17	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETH...	73205	17	0	0	1.282	No	1.645	No	1.960	No

Seasonal Kendall, PLF Downgradient Wells

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 7:03 PM

Constituent	Well	N	Slope	Z	80%	Sig.	90%	Sig.	95%	Sig.
TRICHLOROETHENE (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	73105	17	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	73205	17	0	0	1.282	No	1.645	No	1.960	No
ZINC (UG/L)	73105	17	0.4213	0.4704	1.282	No	1.645	No	1.960	No
ZINC (UG/L)	73205	17	0	0.1846	1.282	No	1.645	No	1.960	No

B.3.2.3 OLF ANOVA Summary

Non-Parametric ANOVA

Constituent: Bis[2-ethylhexyl] phthalate Analysis Run 2/17/2010 6:32 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 12/28/2005 and 11/24/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 8.69

Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.

There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.804
Adjusted Kruskal-Wallis statistic (H') = 8.69

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
80205	-7.765	14.3	No
80105	-5.546	14.52	No
80005	-7.765	14.3	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Shapiro Francia normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: Boron Analysis Run 2/17/2010 6:32 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 12/28/2005 and 11/11/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 58.44

Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.

There were 10 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 58.14
Adjusted Kruskal-Wallis statistic (H') = 58.44

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in 3 of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
80005	18.44	14.51	Yes
80205	30.44	14.51	Yes
80105	50.29	14.51	Yes

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison.

Non-parametric test used in lieu of parametric anova because the Shapiro Francia normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: CHLOROFORM Analysis Run 2/17/2010 6:32 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 6/19/2003 and 11/11/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 9.257

Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.

There were 2 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.11
Adjusted Kruskal-Wallis statistic (H') = 9.257

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
80205	-6	14.92	No
80105	-6	14.92	No
80005	-6	14.92	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Shapiro Francia normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: CHROMIUM Analysis Run 2/17/2010 6:32 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 9/12/2005 and 11/11/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 8.343

Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.

There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 1.942
Adjusted Kruskal-Wallis statistic (H') = 8.343

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
80205	-4.408	14.93	No
80105	-8.353	14.93	No
80005	-8.353	14.93	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Shapiro Francia normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: SELENIUM Analysis Run 2/17/2010 6:33 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 9/12/2005 and 11/11/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 13.42

Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.

There were 1 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 4.909
Adjusted Kruskal-Wallis statistic (H') = 13.42

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in none of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
80205	11.76	14.93	No
80105	1.206	14.93	No
80005	-2.294	14.93	No

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison. (Note: In this case, with Anova indicating differences which are not reflected in the contrast test, it should be concluded that it is the median of the Background data which is significantly higher.)

Non-parametric test used in lieu of parametric anova because the Shapiro Francia normality test showed the residuals to be non-normal at the 0.01 alpha level.

Non-Parametric ANOVA

Constituent: Uranium Analysis Run 2/17/2010 6:34 PM
Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

For observations made between 9/12/2005 and 11/11/2009, the non-parametric analysis of variance test indicates a DIFFERENCE between the medians of the groups tested at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one group has a significantly different median concentration of this constituent when compared to another group.

Calculated Kruskal-Wallis statistic = 41.18

Tabulated Chi-Squared value = 7.815 with 3 degrees of freedom at the 5% significance level.

There were 6 groups of ties in the data, consequently the Kruskal-Wallis statistic (H) was adjusted. The adjusted statistic (H') was utilized to determine if the medians were equal.
Kruskal-Wallis statistic (H) = 39.03
Adjusted Kruskal-Wallis statistic (H') = 41.18

The contrast test was performed to determine if any compliance group concentration was significantly higher than the background concentration. The contrast test indicates statistical significance in 1 of the compliance wells.

Contrast table:

Well	Difference	Contrast	Significant?
80005	-3.382	14.52	No
80105	4.853	14.52	No
80205	34	14.52	Yes

The critical (contrast) value was computed with 3 degrees of freedom and a 1.667% error level for each well comparison.

Non-parametric test used in lieu of parametric anova because Levine's Equality of Variance test failed at the 0.05 alpha level.

Analysis of Variance, OLF

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 6:38 PM

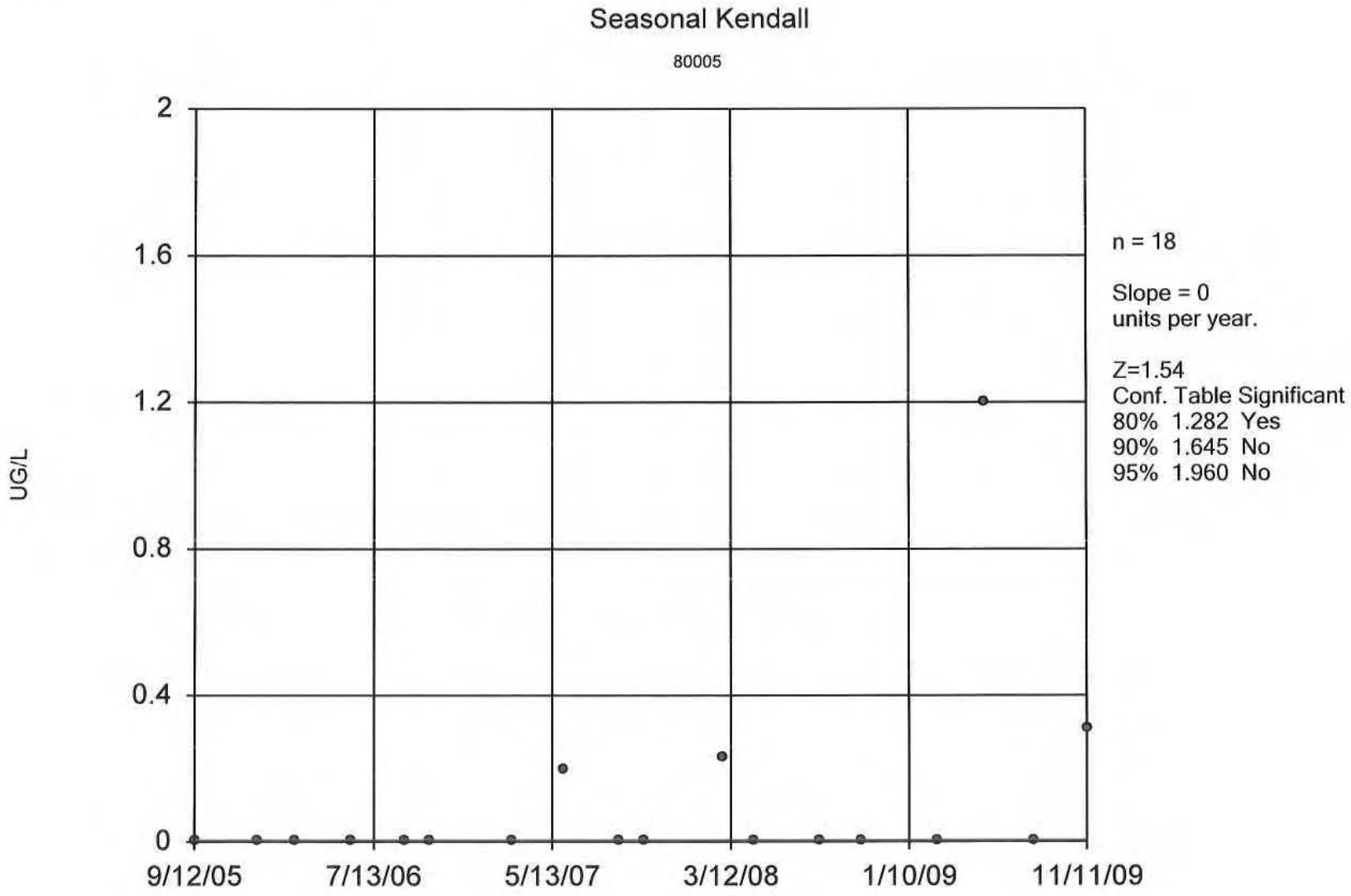
Constituent	Well	Calc.	Crit.	Sig.	Alpha	Transform	ANOVA Sig.	Alpha	Method
1,2,4-TRICHLOROBENZEN...	80205	1.921	14.93	No	0.01667	n/a	No	0.05	NP (normality)
1,2,4-TRICHLOROBENZEN...	80005	0	15.13	No	0.01667	n/a	No	0.05	NP (normality)
1,2,4-TRICHLOROBENZEN...	80105	0	15.13	No	0.01667	n/a	No	0.05	NP (normality)
1,2-DICHLOROBENZENE (...	80205	-2.056	14.93	No	0.01667	n/a	No	0.05	NP (normality)
1,2-DICHLOROBENZENE (...	80005	-2.056	15.13	No	0.01667	n/a	No	0.05	NP (normality)
1,2-DICHLOROBENZENE (...	80105	-0.05556	15.13	No	0.01667	n/a	No	0.05	NP (normality)
1,3-DICHLOROBENZENE (...	80205	5.711	14.93	No	0.01667	n/a	No	0.05	NP (normality)
1,3-DICHLOROBENZENE (...	80105	4.056	15.13	No	0.01667	n/a	No	0.05	NP (normality)
1,3-DICHLOROBENZENE (...	80005	8.167	15.13	No	0.01667	n/a	No	0.05	NP (normality)
1,4-DICHLOROBENZENE (...	80205	0	14.93	No	0.01667	n/a	No	0.05	NP (normality)
1,4-DICHLOROBENZENE (...	80005	0	15.13	No	0.01667	n/a	No	0.05	NP (normality)
1,4-DICHLOROBENZENE (...	80105	2.028	15.13	No	0.01667	n/a	No	0.05	NP (normality)
ARSENIC (UG/L)	80205	-0.00...	14.93	No	0.01667	n/a	No	0.05	NP (normality)
ARSENIC (UG/L)	80105	-2.029	14.93	No	0.01667	n/a	No	0.05	NP (normality)
ARSENIC (UG/L)	80005	-0.05719	14.93	No	0.01667	n/a	No	0.05	NP (normality)
BERYLLIUM (UG/L)	80205	-2.088	14.93	No	0.01667	n/a	No	0.05	NP (normality)
BERYLLIUM (UG/L)	80105	-2.088	14.93	No	0.01667	n/a	No	0.05	NP (normality)
BERYLLIUM (UG/L)	80005	-2.088	14.93	No	0.01667	n/a	No	0.05	NP (normality)
Bis[2-ethylhexyl] pht...	80205	-7.765	14.3	No	0.01667	n/a	Yes	0.05	NP (normality)
Bis[2-ethylhexyl] pht...	80105	-5.546	14.52	No	0.01667	n/a	Yes	0.05	NP (normality)
Bis[2-ethylhexyl] pht...	80005	-7.765	14.3	No	0.01667	n/a	Yes	0.05	NP (normality)
Boron (ug/L)	**80005**	**18.44**	**14.51**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
Boron (ug/L)	**80205**	**30.44**	**14.51**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
Boron (ug/L)	**80105**	**50.29**	**14.51**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (normality)**
CADMIUM (UG/L)	80205	0.4281	14.93	No	0.01667	n/a	No	0.05	NP (normality)
CADMIUM (UG/L)	80105	-8.627	14.93	No	0.01667	n/a	No	0.05	NP (normality)
CADMIUM (UG/L)	80005	-10.71	14.93	No	0.01667	n/a	No	0.05	NP (normality)
CHLOROFORM (UG/L)	80205	-6	14.92	No	0.01667	n/a	Yes	0.05	NP (normality)
CHLOROFORM (UG/L)	80105	-6	14.92	No	0.01667	n/a	Yes	0.05	NP (normality)
CHLOROFORM (UG/L)	80005	-6	14.92	No	0.01667	n/a	Yes	0.05	NP (normality)
CHROMIUM (UG/L)	80205	-4.408	14.93	No	0.01667	n/a	Yes	0.05	NP (normality)
CHROMIUM (UG/L)	80105	-8.353	14.93	No	0.01667	n/a	Yes	0.05	NP (normality)
CHROMIUM (UG/L)	80005	-8.353	14.93	No	0.01667	n/a	Yes	0.05	NP (normality)
CHRYSENE (UG/L)	80205	-0.05882	14.72	No	0.01667	n/a	No	0.05	NP (normality)
CHRYSENE (UG/L)	80105	-0.05882	14.93	No	0.01667	n/a	No	0.05	NP (normality)
CHRYSENE (UG/L)	80005	1.83	14.72	No	0.01667	n/a	No	0.05	NP (normality)
COPPER (UG/L)	80205	2.056	14.93	No	0.01667	n/a	No	0.05	NP (normality)
COPPER (UG/L)	80105	-0.1111	14.93	No	0.01667	n/a	No	0.05	NP (normality)
COPPER (UG/L)	80005	0.02778	14.93	No	0.01667	n/a	No	0.05	NP (normality)
HEXACHLOROBUTADIENE (...	80205	-2.028	14.93	No	0.01667	n/a	No	0.05	NP (normality)

Analysis of Variance, OLF

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 6:38 PM

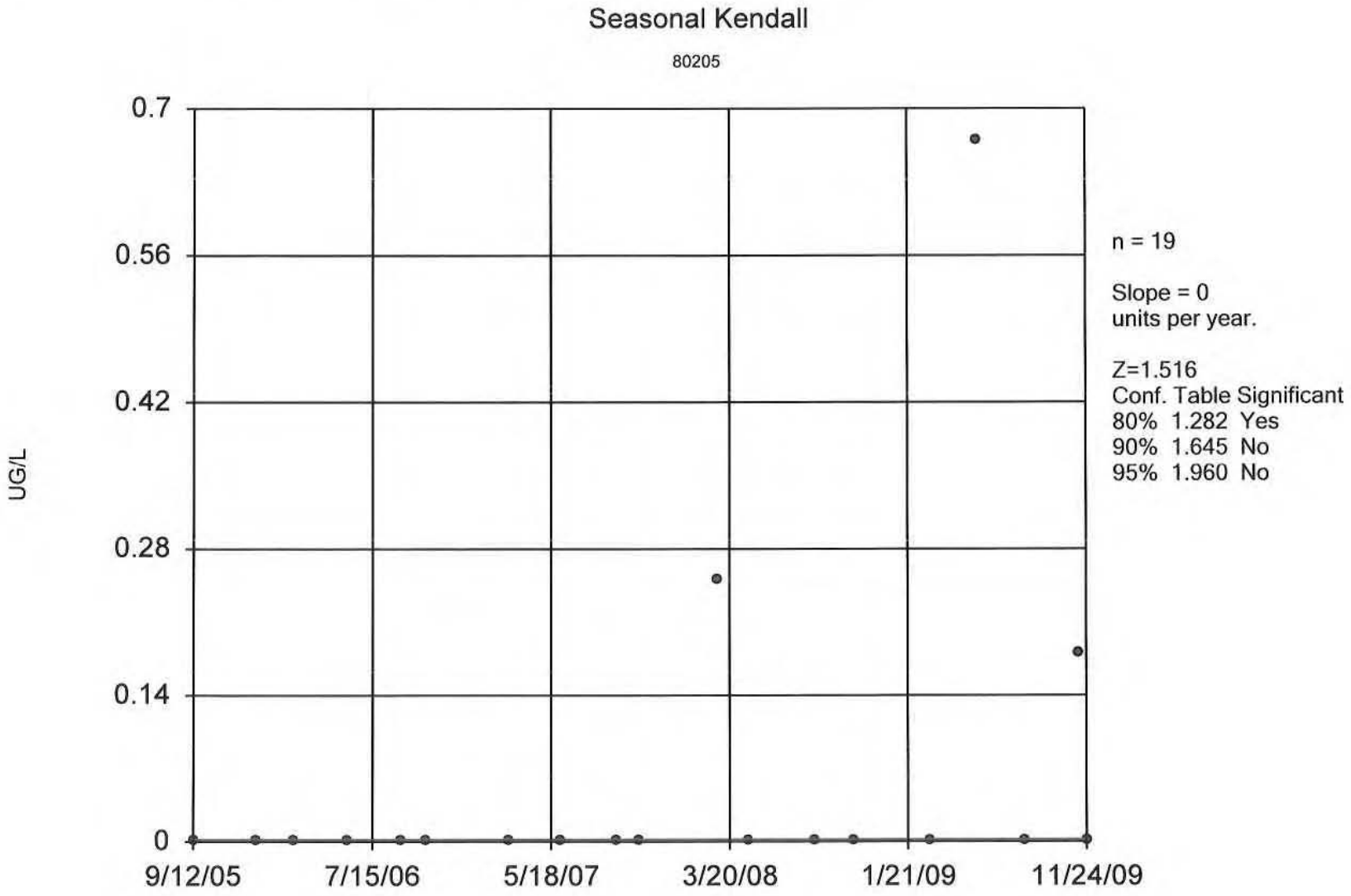
Constituent	Well	Calc.	Crit.	Sig.	Alpha	Transform	ANOVA Sig.	Alpha	Method
HEXACHLOROBUTADIENE (...	80005	-2.028	15.13	No	0.01667	n/a	No	0.05	NP (normality)
HEXACHLOROBUTADIENE (...	80105	-2.028	15.13	No	0.01667	n/a	No	0.05	NP (normality)
m,p-Xylene (ug/L)	80205	-1.929	9.445	No	0.01667	n/a	No	0.05	NP (normality)
m,p-Xylene (ug/L)	80105	0	9.075	No	0.01667	n/a	No	0.05	NP (normality)
m,p-Xylene (ug/L)	80005	-1.929	9.075	No	0.01667	n/a	No	0.05	NP (normality)
METHYLENE CHLORIDE (U...	80205	0	14.92	No	0.01667	n/a	No	0.05	NP (normality)
METHYLENE CHLORIDE (U...	80005	0	14.92	No	0.01667	n/a	No	0.05	NP (normality)
METHYLENE CHLORIDE (U...	80105	2	14.92	No	0.01667	n/a	No	0.05	NP (normality)
NAPHTHALENE (UG/L)	80205	-2.028	14.93	No	0.01667	n/a	No	0.05	NP (normality)
NAPHTHALENE (UG/L)	80005	-2.028	15.13	No	0.01667	n/a	No	0.05	NP (normality)
NAPHTHALENE (UG/L)	80105	-2.028	15.13	No	0.01667	n/a	No	0.05	NP (normality)
NICKEL (UG/L)	80205	4.904	14.93	No	0.01667	n/a	No	0.05	NP (normality)
NICKEL (UG/L)	80105	-4.985	14.93	No	0.01667	n/a	No	0.05	NP (normality)
NICKEL (UG/L)	80005	-4.791	14.93	No	0.01667	n/a	No	0.05	NP (normality)
SELENIUM (UG/L)	80205	11.76	14.93	No	0.01667	n/a	Yes	0.05	NP (normality)
SELENIUM (UG/L)	80105	1.206	14.93	No	0.01667	n/a	Yes	0.05	NP (normality)
SELENIUM (UG/L)	80005	-2.294	14.93	No	0.01667	n/a	Yes	0.05	NP (normality)
SILVER (UG/L)	80205	1.972	14.93	No	0.01667	n/a	No	0.05	NP (normality)
SILVER (UG/L)	80105	0	14.93	No	0.01667	n/a	No	0.05	NP (normality)
SILVER (UG/L)	80005	0	14.93	No	0.01667	n/a	No	0.05	NP (normality)
TOLUENE (UG/L)	80205	-1.972	14.92	No	0.01667	n/a	No	0.05	NP (normality)
TOLUENE (UG/L)	80105	0.05556	14.92	No	0.01667	n/a	No	0.05	NP (normality)
TOLUENE (UG/L)	80005	-1.972	14.92	No	0.01667	n/a	No	0.05	NP (normality)
TRICHLOROETHENE (UG/L)	80205	0	14.92	No	0.01667	n/a	No	0.05	NP (normality)
TRICHLOROETHENE (UG/L)	80005	2	14.92	No	0.01667	n/a	No	0.05	NP (normality)
TRICHLOROETHENE (UG/L)	80105	0	14.92	No	0.01667	n/a	No	0.05	NP (normality)
Uranium (ug/L)	80005	-3.382	14.52	No	0.01667	n/a	Yes	0.05	NP (eq. var.)
Uranium (ug/L)	80105	4.853	14.52	No	0.01667	n/a	Yes	0.05	NP (eq. var.)
Uranium (ug/L)	**80205**	**34**	**14.52**	**Yes**	**0.01667**	**n/a**	**Yes**	**0.05**	**NP (eq. var.)**
ZINC (UG/L)	80105	-11.39	14.93	No	0.01667	n/a	No	0.05	NP (eq. var.)
ZINC (UG/L)	80205	-6.471	14.93	No	0.01667	n/a	No	0.05	NP (eq. var.)
ZINC (UG/L)	80005	-7.665	14.93	No	0.01667	n/a	No	0.05	NP (eq. var.)

B.3.2.4 OLF S-K Plots and Summary Tables



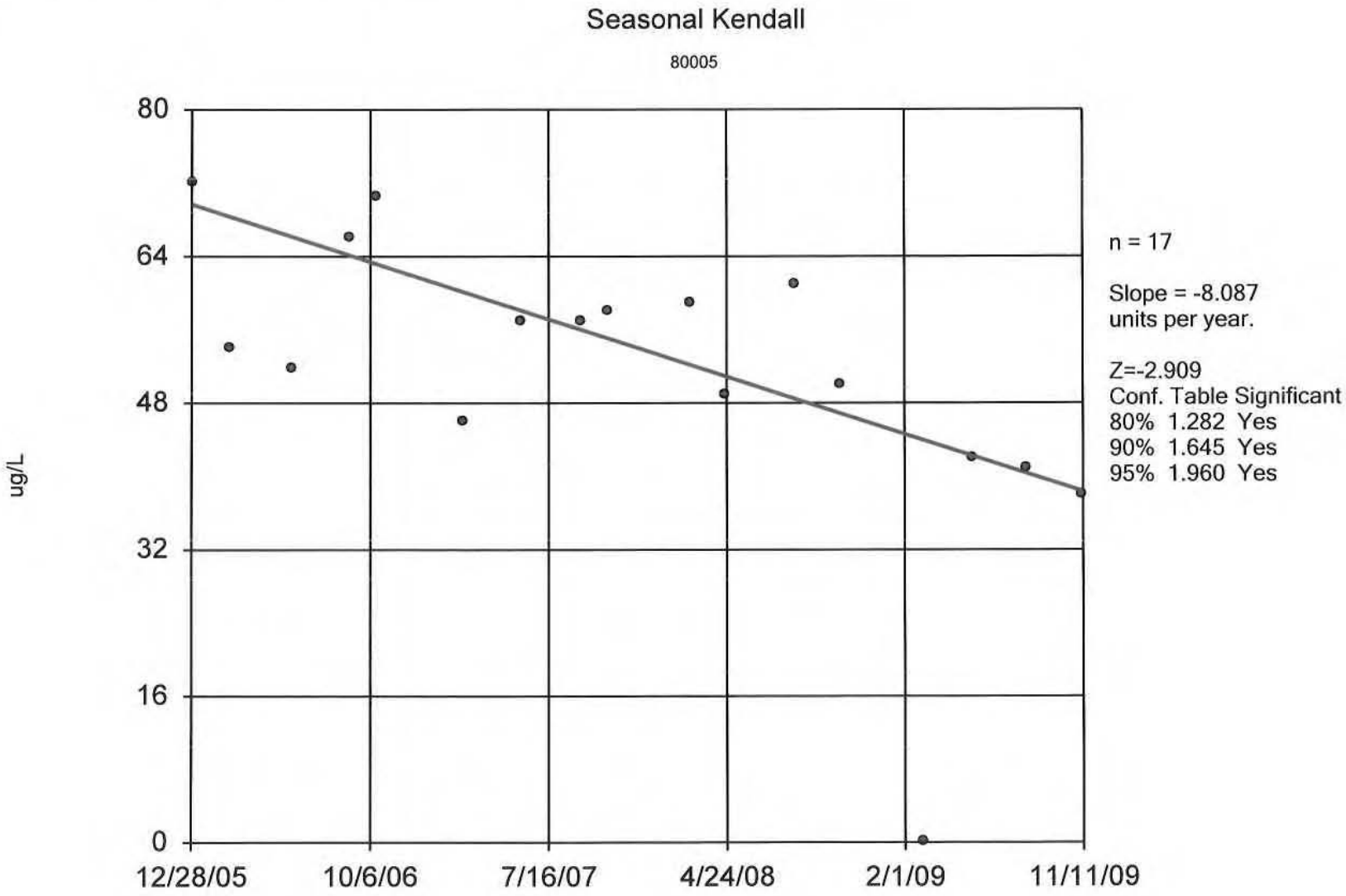
Constituent: 1,3-DICHLOROBENZENE Analysis Run 2/17/2010 6:41 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09



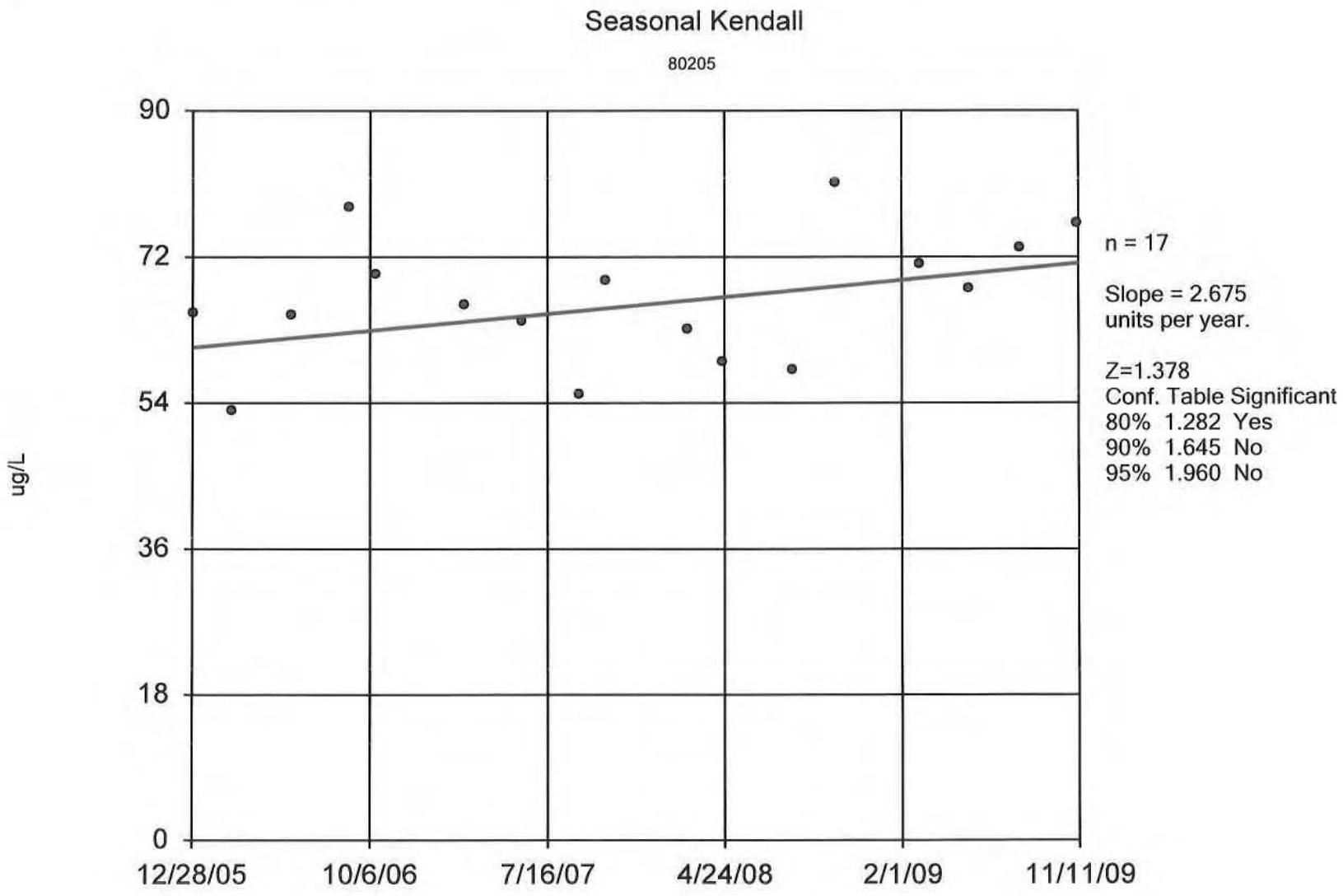
Constituent: 1,3-DICHLOROBENZENE Analysis Run 2/17/2010 6:41 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09



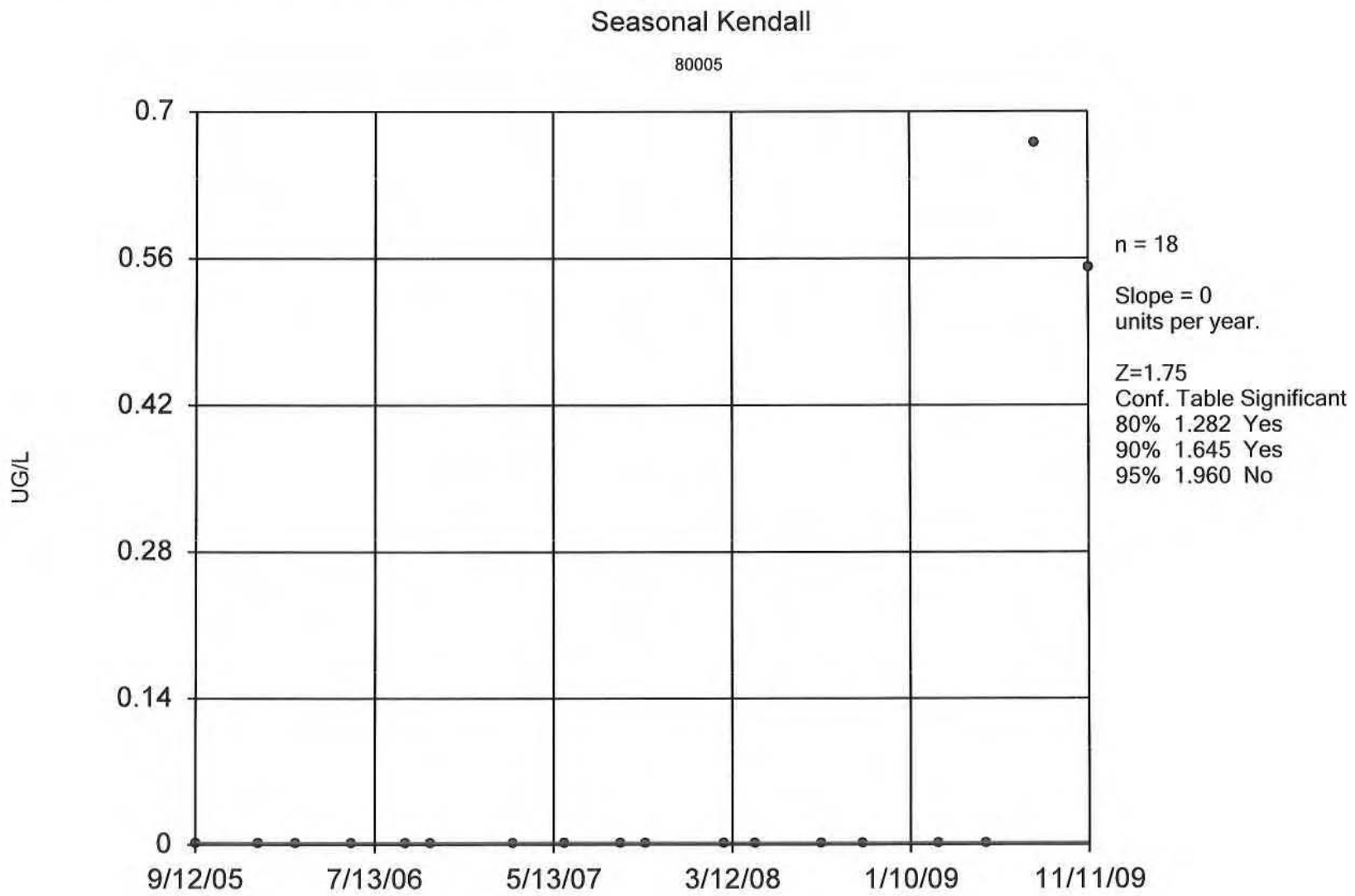
Constituent: Boron Analysis Run 2/17/2010 6:44 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09



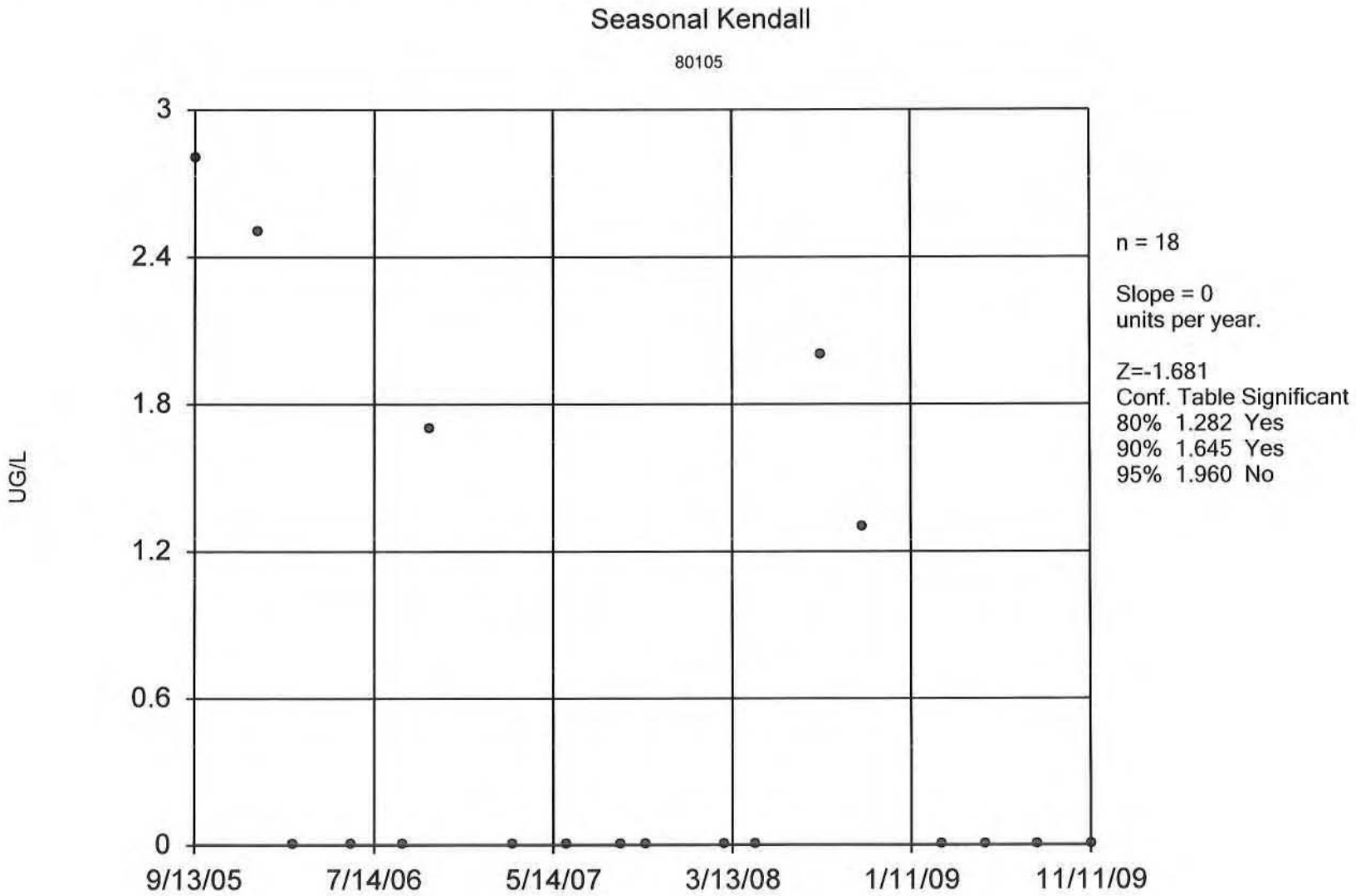
Constituent: Boron Analysis Run 2/17/2010 6:44 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09



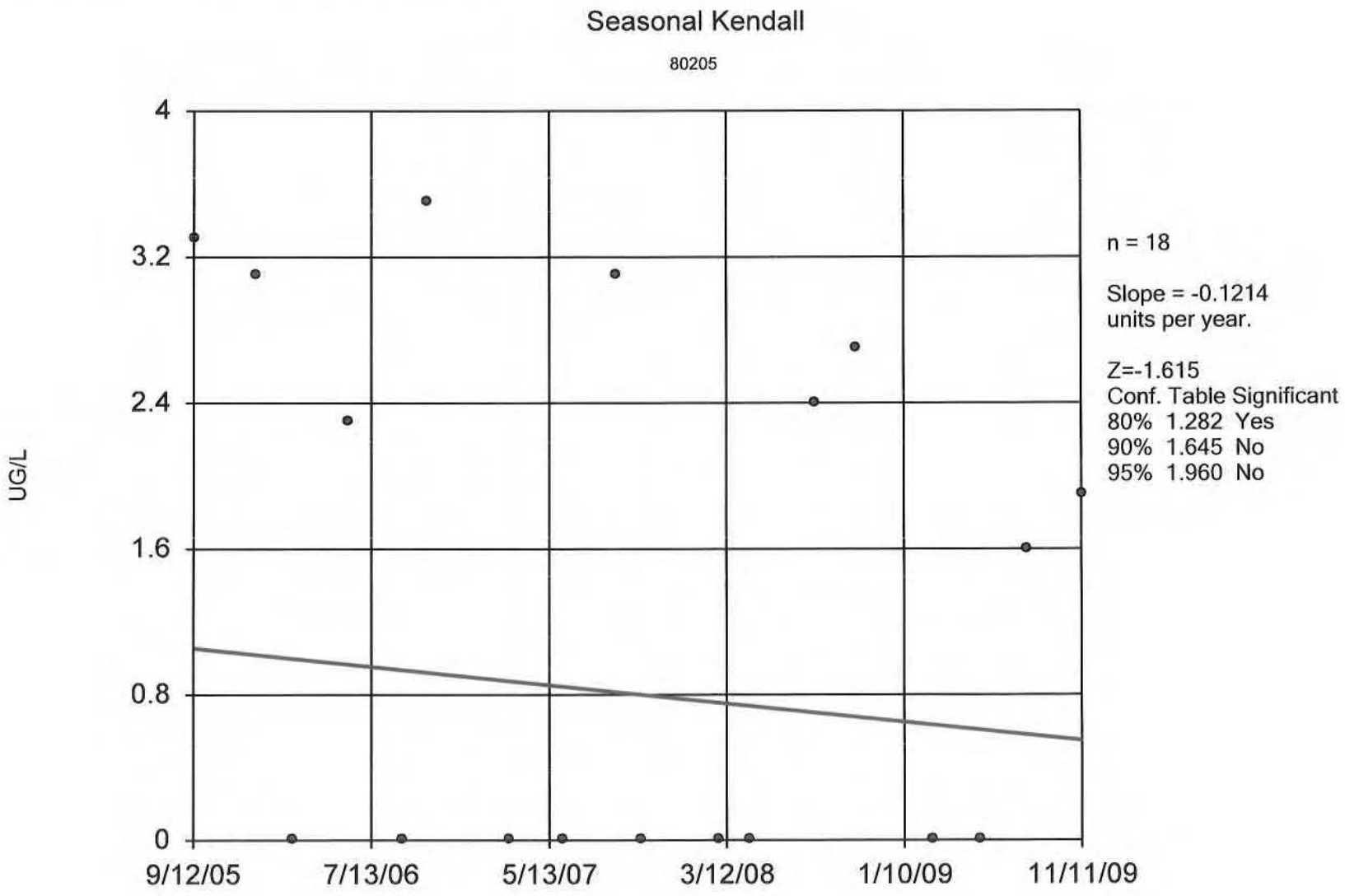
Constituent: CHRYSENE Analysis Run 2/17/2010 6:45 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09



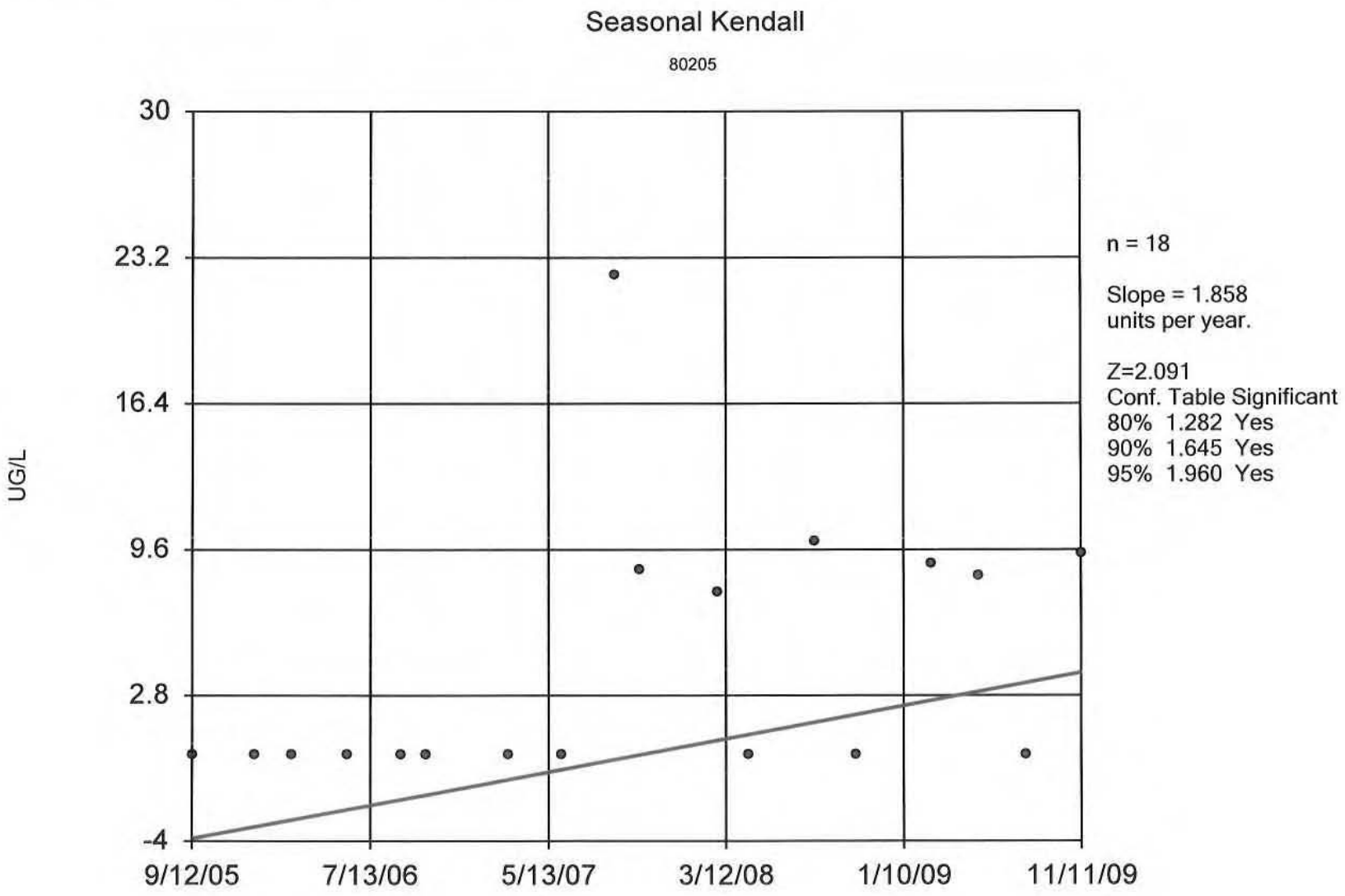
Constituent: NICKEL Analysis Run 2/17/2010 6:47 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09



Constituent: NICKEL Analysis Run 2/17/2010 6:47 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09



Constituent: SELENIUM Analysis Run 2/17/2010 6:48 PM

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09

Seasonal Kendall, OLF Downgradient Wells

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 6:53 PM

Constituent	Well	N	Slope	Z	80%	Sig.	90%	Sig.	95%	Sig.
FLUORANTHENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
FLUORANTHENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
FLUORENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
FLUORENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBENZENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBENZENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (...	80005	18	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (...	80105	18	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROBUTADIENE (...	80205	19	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROCYCLOPENTAD...	80005	18	0	0	1.282	No	1.645	No	1.960	No
HEXACHLOROCYCLOPENTAD...	80205	18	0	0	1.282	No	1.645	No	1.960	No
INDENO[1,2,3-cd]PYREN...	80005	18	0	0	1.282	No	1.645	No	1.960	No
INDENO[1,2,3-cd]PYREN...	80205	18	0	0	1.282	No	1.645	No	1.960	No
ISOPHORONE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
ISOPHORONE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
LEAD (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
LEAD (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
LEAD (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
MERCURY (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
MERCURY (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
MERCURY (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (U...	80005	18	0	0	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (U...	80105	18	0	0.3536	1.282	No	1.645	No	1.960	No
METHYLENE CHLORIDE (U...	80205	18	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
NAPHTHALENE (UG/L)	80205	19	0	0	1.282	No	1.645	No	1.960	No
NICKEL (UG/L)	80005	18	0	-0....	1.282	No	1.645	No	1.960	No
NICKEL (UG/L)	**80105**	**18**	**0**	**-1.681**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
NICKEL (UG/L)	**80205**	**18**	**-0.1214**	**-1.615**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
N-Nitrosodi-n-propyla...	80005	17	0	0	1.282	No	1.645	No	1.960	No
N-Nitrosodi-n-propyla...	80205	17	0	0	1.282	No	1.645	No	1.960	No
PENTACHLOROPHENOL (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
PENTACHLOROPHENOL (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
PHENOL (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
PHENOL (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
PYRENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
PYRENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
SELENIUM (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
SELENIUM (UG/L)	80105	18	0	1.25	1.282	No	1.645	No	1.960	No

Seasonal Kendall, OLF Downgradient Wells

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 6:53 PM

Constituent	Well	N	Slope	Z	80%	Sig.	90%	Sig.	95%	Sig.
SELENIUM (UG/L)	**80205**	**18**	**1.858**	**2.091**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
SILVER (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
SILVER (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
SILVER (UG/L)	80205	18	0	1.061	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
STYRENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
TETRACHLOROETHENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	80105	18	0	-0....	1.282	No	1.645	No	1.960	No
TOLUENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETH...	80005	18	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETH...	80105	18	0	0	1.282	No	1.645	No	1.960	No
trans-1,2-DICHLOROETH...	80205	18	0	0	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
TRICHLOROETHENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
VINYL CHLORIDE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
ZINC (UG/L)	80005	18	0	0.8748	1.282	No	1.645	No	1.960	No
ZINC (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
ZINC (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE...	80005	18	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE...	80105	18	0	0	1.282	No	1.645	No	1.960	No
1,1,1-TRICHLOROETHANE...	80205	18	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROET...	80005	18	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROET...	80105	18	0	0	1.282	No	1.645	No	1.960	No
1,1,2,2-TETRACHLOROET...	80205	18	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE...	80005	18	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE...	80105	18	0	0	1.282	No	1.645	No	1.960	No
1,1,2-TRICHLOROETHANE...	80205	18	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (U...	80005	18	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (U...	80105	18	0	0	1.282	No	1.645	No	1.960	No
1,1-DICHLOROETHENE (U...	80205	18	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZEN...	80005	18	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZEN...	80105	18	0	0	1.282	No	1.645	No	1.960	No
1,2,4-TRICHLOROBENZEN...	80205	19	0	-0....	1.282	No	1.645	No	1.960	No

Seasonal Kendall, OLF Downgradient Wells

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 6:53 PM

Constituent	Well	N	Slope	Z	80%	Sig.	90%	Sig.	95%	Sig.
1,2-Dibromo-3-chlorop...	80005	17	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chlorop...	80105	17	0	0	1.282	No	1.645	No	1.960	No
1,2-Dibromo-3-chlorop...	80205	17	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DIBROMOETHANE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (...	80005	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (...	80105	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROBENZENE (...	80205	19	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (U...	80005	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (U...	80105	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROETHANE (U...	80205	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (...	80005	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (...	80105	18	0	0	1.282	No	1.645	No	1.960	No
1,2-DICHLOROPROPANE (...	80205	18	0	0	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (...	**80005**	**18**	**0**	**1.54**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,3-DICHLOROBENZENE (...	80105	18	0	0.7223	1.282	No	1.645	No	1.960	No
1,3-DICHLOROBENZENE (...	**80205**	**19**	**0**	**1.516**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
1,4-DICHLOROBENZENE (...	80005	18	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (...	80105	18	0	0	1.282	No	1.645	No	1.960	No
1,4-DICHLOROBENZENE (...	80205	19	0	0	1.282	No	1.645	No	1.960	No
2, 4-Dimethylphenol (...	80005	17	0	0	1.282	No	1.645	No	1.960	No
2, 4-Dimethylphenol (...	80205	17	0	0	1.282	No	1.645	No	1.960	No
2,4,6-TRICHLOROPHENOL...	80005	18	0	0	1.282	No	1.645	No	1.960	No
2,4,6-TRICHLOROPHENOL...	80205	18	0	0	1.282	No	1.645	No	1.960	No
2,4-DICHLOROPHENOL (U...	80005	18	0	0	1.282	No	1.645	No	1.960	No
2,4-DICHLOROPHENOL (U...	80205	18	0	0	1.282	No	1.645	No	1.960	No
2,4-DINITROPHENOL (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
2,4-DINITROPHENOL (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
2,4-DINITROTOLUENE (U...	80005	18	0	0	1.282	No	1.645	No	1.960	No
2,4-DINITROTOLUENE (U...	80205	18	0	0	1.282	No	1.645	No	1.960	No
2,6-DINITROTOLUENE (U...	80005	18	0	0	1.282	No	1.645	No	1.960	No
2,6-DINITROTOLUENE (U...	80205	18	0	0	1.282	No	1.645	No	1.960	No
2-CHLORONAPHTHALENE (...	80005	18	0	0	1.282	No	1.645	No	1.960	No
2-CHLORONAPHTHALENE (...	80205	18	0	0	1.282	No	1.645	No	1.960	No
2-CHLOROPHENOL (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
2-CHLOROPHENOL (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
3,3`-DICHLOROBENZIDIN...	80005	18	0	0	1.282	No	1.645	No	1.960	No
3,3`-DICHLOROBENZIDIN...	80205	18	0	0	1.282	No	1.645	No	1.960	No
4,6-Dinitro-2-methyl ...	80005	17	0	0	1.282	No	1.645	No	1.960	No

Seasonal Kendall, OLF Downgradient Wells

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 6:53 PM

Constituent	Well	N	Slope	Z	80%	Sig.	90%	Sig.	95%	Sig.
4,6-Dinitro-2-methyl ...	80205	17	0	0	1.282	No	1.645	No	1.960	No
4-CHLORO-3-METHYLPHEN...	80005	18	0	0	1.282	No	1.645	No	1.960	No
4-CHLORO-3-METHYLPHEN...	80205	18	0	0	1.282	No	1.645	No	1.960	No
4-NITROPHENOL (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
4-NITROPHENOL (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
ACENAPHTHENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
ACENAPHTHENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
ANTHRACENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
ANTHRACENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
ARSENIC (UG/L)	80005	18	0	-0....	1.282	No	1.645	No	1.960	No
ARSENIC (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
ARSENIC (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
Benz[a]anthracene (ug/L)	80005	17	0	0	1.282	No	1.645	No	1.960	No
Benz[a]anthracene (ug/L)	80205	17	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
BENZENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
BENZO[a]PYRENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
BENZO[a]PYRENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
BENZO[b]FLUORANTHENE ...	80005	18	0	0	1.282	No	1.645	No	1.960	No
BENZO[b]FLUORANTHENE ...	80205	18	0	0	1.282	No	1.645	No	1.960	No
Benzo[g,h,i]Perylene ...	80005	17	0	0	1.282	No	1.645	No	1.960	No
Benzo[g,h,i]Perylene ...	80205	17	0	0	1.282	No	1.645	No	1.960	No
BENZO[k]FLUORANTHENE ...	80005	18	0	0	1.282	No	1.645	No	1.960	No
BENZO[k]FLUORANTHENE ...	80205	18	0	0	1.282	No	1.645	No	1.960	No
BERYLLIUM (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
BERYLLIUM (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
BERYLLIUM (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
Bis[2-chloroethyl] et...	80005	17	0	0	1.282	No	1.645	No	1.960	No
Bis[2-chloroethyl] et...	80205	17	0	0	1.282	No	1.645	No	1.960	No
BIS[2-CHLOROISOPROPYL...	80005	17	0	0	1.282	No	1.645	No	1.960	No
BIS[2-CHLOROISOPROPYL...	80205	17	0	0	1.282	No	1.645	No	1.960	No
Bis[2-ethylhexyl] pht...	80005	17	0	0	1.282	No	1.645	No	1.960	No
Bis[2-ethylhexyl] pht...	80205	17	0	0	1.282	No	1.645	No	1.960	No
Boron (ug/L)	**80005**	**17**	**-8.087**	**-2.909**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**Yes**
Boron (ug/L)	80105	17	0.1691	0.3176	1.282	No	1.645	No	1.960	No
Boron (ug/L)	**80205**	**17**	**2.675**	**1.378**	**1.282**	**Yes**	**1.645**	**No**	**1.960**	**No**
BROMODICHLOROMETHANE ...	80005	18	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE ...	80105	18	0	0	1.282	No	1.645	No	1.960	No
BROMODICHLOROMETHANE ...	80205	18	0	0	1.282	No	1.645	No	1.960	No

Seasonal Kendall, OLF Downgradient Wells

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 6:53 PM

Constituent	Well	N	Slope	Z	80%	Sig.	90%	Sig.	95%	Sig.
BROMOFORM (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
BROMOFORM (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
BROMOMETHANE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
BUTYL BENZYL PHTHALAT...	80005	18	0	0	1.282	No	1.645	No	1.960	No
BUTYL BENZYL PHTHALAT...	80205	18	0	0	1.282	No	1.645	No	1.960	No
CADMIUM (UG/L)	80005	18	0	0.7184	1.282	No	1.645	No	1.960	No
CADMIUM (UG/L)	80105	18	0	1.034	1.282	No	1.645	No	1.960	No
CADMIUM (UG/L)	80205	18	0.1786	1.193	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE ...	80005	18	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE ...	80105	18	0	0	1.282	No	1.645	No	1.960	No
CARBON TETRACHLORIDE ...	80205	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROBENZENE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane ...	80005	17	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane ...	80105	17	0	0	1.282	No	1.645	No	1.960	No
Chlorodibromomethane ...	80205	17	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROFORM (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
CHLOROMETHANE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
CHROMIUM (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
CHROMIUM (UG/L)	80105	18	0	0	1.282	No	1.645	No	1.960	No
CHROMIUM (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
CHRYSENE (UG/L)	**80005**	**18**	**0**	**1.75**	**1.282**	**Yes**	**1.645**	**Yes**	**1.960**	**No**
CHRYSENE (UG/L)	80205	18	0	1.061	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHEN...	80005	18	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHEN...	80105	18	0	0	1.282	No	1.645	No	1.960	No
cis-1,2-DICHLOROETHEN...	80205	18	0	0	1.282	No	1.645	No	1.960	No
COPPER (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No
COPPER (UG/L)	80105	18	0	1.061	1.282	No	1.645	No	1.960	No
COPPER (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
Dibenz[a,h]anthracene...	80005	17	0	0	1.282	No	1.645	No	1.960	No
Dibenz[a,h]anthracene...	80205	17	0	0	1.282	No	1.645	No	1.960	No
DIETHYL PHTHALATE (UG/L)	80005	18	0	0	1.282	No	1.645	No	1.960	No

Seasonal Kendall, OLF Downgradient Wells

Facility: Rocky Flats Client: SM Stoller Data File: RFLMA RCRA wells, SWD&CPro_09 Printed 2/17/2010, 6:53 PM

Constituent	Well	N	Slope	Z	80%	Sig.	90%	Sig.	95%	Sig.
DIETHYL PHTHALATE (UG/L)	80205	18	0	0	1.282	No	1.645	No	1.960	No
DIMETHYL PHTHALATE (U...	80005	18	0	0	1.282	No	1.645	No	1.960	No
DIMETHYL PHTHALATE (U...	80205	18	0	0	1.282	No	1.645	No	1.960	No
DI-n-BUTYL PHTHALATE ...	80005	18	0	0	1.282	No	1.645	No	1.960	No
DI-n-BUTYL PHTHALATE ...	80205	18	0	0	1.282	No	1.645	No	1.960	No

B.4 PARCC Evaluation

This section includes the PARCC tables referenced in Section 3.6 of the report.

Table B–1. Duplicate Error Ratios (DERs) for Radionuclides

Location	Sample Date	Analyte	Real Result	Real 2 Sigma Error	Real Lab Qual	Real Validation	Dup Result	Dup 2 Sigma Error	Dup Lab Qual	Dup Validation	Units	DER
20705	5/5/2009	Americium-241	0.003	0.011	U		0.003	0.010	U		pCi/L	0.00
SW027	4/18/2009	Americium-241	0.017	0.010		J	0.016	0.009		J	pCi/L	0.01
SW093	3/29/2009	Uranium-238	1.870	0.457			1.860	0.452			pCi/L	0.02
GS03	6/2/2009	Americium-241	0.003	0.005	U		0.002	0.016	U		pCi/L	0.07
GS01	4/20/2009	Plutonium-239, 240	0.009	0.011	U		0.010	0.007	U		pCi/L	0.08
GS59	3/2/2009	Uranium-238	0.487	0.236		J	0.450	0.194		J	pCi/L	0.12
20705	10/13/2009	Plutonium-239, 240	0.00117	0.00759	U		0	0.00582	U		pCi/L	0.12
SW093	3/6/2009	Uranium-238	3.37	0.669			3.49	0.682			pCi/L	0.13
SW093	3/6/2009	Americium-241	0.00405	0.0149	U		0.000879	0.0194	U		pCi/L	0.13
20705	10/13/2009	Americium-241	0.00208	0.00316	U		0.00282	0.00465	U		pCi/L	0.13
GS59	3/2/2009	Uranium-235/236	0	0.144	U		-0.0222	0.0617	U		pCi/L	0.14
GS08	5/25/2009	Americium-241	-0.0016	0.00306	U		0.0000877	0.0115	U		pCi/L	0.14
SW027	4/18/2009	Plutonium-239, 240	0.086	0.0211			0.0813	0.0206			pCi/L	0.16
GS59	3/2/2009	Uranium-234	0.303	0.274	U		0.36	0.2	U		pCi/L	0.17
SW093	3/6/2009	Plutonium-239, 240	0.00831	0.00843	U		0.00627	0.00818	U		pCi/L	0.17
GS03	4/19/2009	Americium-241	0.00561	0.0132	U		0.00916	0.0145	U		pCi/L	0.18
GS03	4/19/2009	Plutonium-239, 240	0.00735	0.00868	U		0.00495	0.00841	U		pCi/L	0.2
SW093	3/29/2009	Uranium-234	2.36	0.537			2.17	0.507			pCi/L	0.26
GS10	10/31/2009	Americium-241	-0.0029	0.00776	U		0.00134	0.012	U		pCi/L	0.3
SW093	3/6/2009	Uranium-234	3.86	0.745			3.54	0.692			pCi/L	0.31
GS31	5/26/2009	Americium-241	0.00258	0.0054	U		0.00499	0.00508	U		pCi/L	0.33
SW093	3/6/2009	Uranium-235/236	0.134	0.109	U		0.198	0.132	U		pCi/L	0.37
GS03	6/2/2009	Plutonium-239, 240	-0.0019	0.00831	U		0.00298	0.00584	U		pCi/L	0.48
GS08	5/25/2009	Plutonium-239, 240	0.00922	0.00551	U		0.0057	0.00459	U		pCi/L	0.49
SW093	3/29/2009	Americium-241	0.0123	0.0109	U		0.00418	0.00606	U		pCi/L	0.65
20705	5/5/2009	Plutonium-239, 240	-5.51E-10	0.00641	U		0.0071	0.00838	U		pCi/L	0.67
GS31	5/26/2009	Plutonium-239, 240	0.0023	0.00955	U		0.0119	0.00995	U		pCi/L	0.7
SW093	3/29/2009	Plutonium-239, 240	0.00178	0.00782	U		0.011	0.0102	U		pCi/L	0.72
GS01	4/20/2009	Americium-241	0.007	0.006	U		0.000	0.005	U		pCi/L	0.76
GS10	10/31/2009	Plutonium-239, 240	-0.003	0.005	U		0.004	0.007	U		pCi/L	0.82
SW093	3/29/2009	Uranium-235/236	0.218	0.146	U		0.023	0.121	U		pCi/L	1.03

Table B–2. Relative Percent Differences (RPDs) for Metals, VOCs/SVOCs, and Water-Quality Analysis

Location	Sample Date	Analyte	Real Result	Real Lab Qual	Real Valid-ation	Dup Result	Dup Lab Qual	Dup Valid-ation	Units	RPD%	Filtered
80105	5/19/2009	Boron	130			130			ug/L	0.00	Yes
73205	3/2/2009	Boron	71	J		71	J		ug/L	0.00	Yes
80105	8/13/2009	Uranium	10			10			ug/L	0.00	Yes
10304	11/4/2009	Uranium	19			19			ug/L	0.00	Yes
20705	10/13/2009	Uranium	11			11			ug/L	0.00	Yes
SW027	4/18/2009	Uranium	3.34			3.38			ug/L	1.19	No
GS31	5/26/2009	Uranium	5.61			5.7			ug/L	1.59	No
80105	11/11/2009	Uranium	9.6			9.4			ug/L	2.11	Yes
20705	5/5/2009	Uranium	4.3			4.4			ug/L	2.30	Yes
GS03	4/19/2009	Uranium	0.596			0.61			ug/L	2.32	No
73205	3/2/2009	Selenium	430			420			ug/L	2.35	Yes
91305	5/12/2009	Uranium	41			40			ug/L	2.47	Yes
GS08	5/25/2009	Uranium	5.97			6.15			ug/L	2.97	No
80105	5/19/2009	Cadmium	0.57	B		0.55	B		ug/L	3.57	Yes
80105	5/19/2009	Uranium	20	B	J	21	B		ug/L	4.88	Yes
GS01	4/20/2009	Uranium	0.882			0.837			ug/L	5.24	No
GS03	6/2/2009	Uranium	5.29			4.93			ug/L	7.05	No
80105	8/13/2009	Boron	130	J		140	J		ug/L	7.41	Yes
80105	11/11/2009	Boron	130			120			ug/L	8.00	Yes
73205	3/2/2009	Uranium	120	J		110	J		ug/L	8.70	Yes
GS59	3/2/2009	Boron	12.9	B		11.5	B		ug/L	11.48	No
GS59	3/2/2009	Nickel	2.15	B		1.82	B		ug/L	16.62	No
80105	8/13/2009	Cadmium	0.79	B		0.94	B		ug/L	17.34	Yes
GS10	10/31/2009	Chromium	1.9	B		1.47	B		ug/L	25.52	No
73205	3/2/2009	Zinc	6	B		4.6	B		ug/L	26.42	Yes
80105	8/13/2009	Zinc	4.9	B	J	7.3	B	J	ug/L	39.34	Yes
GS10	10/31/2009	Uranium	26.5		J	16.1		J	ug/L	48.83	No
91305	5/12/2009	Nitrate + Nitrite as Nitrogen	0.16			0.16			mg/L	0.00	No
GS11	6/2/2009	Nitrate + Nitrite as Nitrogen	0.0244	J		0.0246	J		mg/L	0.82	No
SW027	4/18/2009	Hardness	148			151			mg/L	2.01	No
GS10	10/31/2009	Hardness	527			548			mg/L	3.91	No
SW093	3/6/2009	Hardness	761			731			mg/L	4.02	No
20705	10/13/2009	Vinyl chloride	0.86	J		0.85	J		ug/L	1.17	No
20705	10/13/2009	cis-1,2-Dichloroethene	0.65	J		0.62	J		ug/L	4.72	No
80105	8/13/2009	Chrysene	0.58	J		0.55	J		ug/L	5.31	No
91305	5/12/2009	Trichloroethene	0.35	J		0.37	J		ug/L	5.56	No
80105	5/19/2009	1,3-Dichlorobenzene	0.57	J		0.77	J		ug/L	29.85	No
91305	5/12/2009	Carbon tetrachloride	0.22	J		17			ug/L	194.89	No

Table B–3. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09042240	1,1,1-Trichloroethane	MSD	78.0	%REC
09112718	1,1,1-Trichloroethane	MSD	78.0	%REC
09042240	1,1,1-Trichloroethane	MS	81.0	%REC
09112718	1,1,1-Trichloroethane	MS	83.0	%REC
09112699	1,1,1-Trichloroethane	MSD	89.0	%REC
09112685	1,1,1-Trichloroethane	MS	91.0	%REC
09072444	1,1,1-Trichloroethane	MSD	91.0	%REC
09052281	1,1,1-Trichloroethane	MSD	92.0	%REC
09052341	1,1,1-Trichloroethane	MSD	92.0	%REC
09112685	1,1,1-Trichloroethane	MSD	92.0	%REC
09052300	1,1,1-Trichloroethane	MS	93.0	%REC
09072444	1,1,1-Trichloroethane	MS	94.0	%REC
09042219	1,1,1-Trichloroethane	MSD	94.5	%REC
09062399	1,1,1-Trichloroethane	MS	95.0	%REC
09112685	1,1,1-Trichloroethane	MSD	95.0	%REC
09102645	1,1,1-Trichloroethane	MS	96.0	%REC
09112699	1,1,1-Trichloroethane	MS	96.0	%REC
09112699	1,1,1-Trichloroethane	MS	97.0	%REC
09062399	1,1,1-Trichloroethane	MSD	97.0	%REC
09052281	1,1,1-Trichloroethane	MS	98.0	%REC
09072455	1,1,1-Trichloroethane	MS	98.0	%REC
09082511	1,1,1-Trichloroethane	MS	98.0	%REC
09082527	1,1,1-Trichloroethane	MS	98.0	%REC
09082511	1,1,1-Trichloroethane	MSD	98.0	%REC
09102650	1,1,1-Trichloroethane	MSD	98.0	%REC
09112699	1,1,1-Trichloroethane	MSD	98.0	%REC
09102668	1,1,1-Trichloroethane	MS	99.0	%REC
09112685	1,1,1-Trichloroethane	MS	99.0	%REC
09042253	1,1,1-Trichloroethane	MSD	99.0	%REC
09052300	1,1,1-Trichloroethane	MSD	99.0	%REC
09092582	1,1,1-Trichloroethane	MSD	99.0	%REC
09042219	1,1,1-Trichloroethane	MS	99.4	%REC
09062383	1,1,1-Trichloroethane	MS	100.0	%REC
09092582	1,1,1-Trichloroethane	MS	100.0	%REC
09102658	1,1,1-Trichloroethane	MS	100.0	%REC
09082527	1,1,1-Trichloroethane	MSD	100.0	%REC
09032134	1,1,1-Trichloroethane	MS	101.0	%REC
09052341	1,1,1-Trichloroethane	MS	101.0	%REC
09062383	1,1,1-Trichloroethane	MSD	101.0	%REC
09072455	1,1,1-Trichloroethane	MSD	101.0	%REC
09102645	1,1,1-Trichloroethane	MSD	101.0	%REC
09052332	1,1,1-Trichloroethane	MS	102.0	%REC
09102650	1,1,1-Trichloroethane	MS	102.0	%REC
09102668	1,1,1-Trichloroethane	MSD	102.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09052306	1,1,1-Trichloroethane	MS	103.0	%REC
09082527	1,1,1-Trichloroethane	MS	103.0	%REC
09092581	1,1,1-Trichloroethane	MS	103.0	%REC
09032134	1,1,1-Trichloroethane	MSD	103.0	%REC
09052306	1,1,1-Trichloroethane	MSD	103.0	%REC
09052332	1,1,1-Trichloroethane	MSD	103.0	%REC
09092581	1,1,1-Trichloroethane	MSD	103.0	%REC
09082499	1,1,1-Trichloroethane	MS	106.0	%REC
09012069	1,1,1-Trichloroethane	MSD	106.0	%REC
09082499	1,1,1-Trichloroethane	MSD	106.0	%REC
09092584	1,1,1-Trichloroethane	MSD	106.0	%REC
09012069	1,1,1-Trichloroethane	MS	108.0	%REC
09042253	1,1,1-Trichloroethane	MS	109.0	%REC
09042233	1,1,1-Trichloroethane	MSD	110.0	%REC
09082527	1,1,1-Trichloroethane	MSD	110.0	%REC
09102658	1,1,1-Trichloroethane	MSD	111.0	%REC
09042255	1,1,1-Trichloroethane	MS	115.0	%REC
09102656	1,1,1-Trichloroethane	MSD	115.0	%REC
09042233	1,1,1-Trichloroethane	MS	122.0	%REC
09042255	1,1,1-Trichloroethane	MSD	122.0	%REC
09022131	1,1,1-Trichloroethane	MS	123.0	%REC
09092584	1,1,1-Trichloroethane	MS	123.0	%REC
09102656	1,1,1-Trichloroethane	MS	123.0	%REC
09022131	1,1,1-Trichloroethane	MSD	127.0	%REC
09042219	1,1,2,2-Tetrachloroethane	MSD	88.3	%REC
09012069	1,1,2,2-Tetrachloroethane	MS	99.1	%REC
09012069	1,1,2,2-Tetrachloroethane	MSD	99.4	%REC
09042219	1,1,2,2-Tetrachloroethane	MS	99.8	%REC
09042219	1,1,2-Trichloroethane	MSD	92.8	%REC
09042219	1,1,2-Trichloroethane	MS	99.5	%REC
09012069	1,1,2-Trichloroethane	MS	105.0	%REC
09012069	1,1,2-Trichloroethane	MSD	105.0	%REC
09042240	1,1-Dichloroethene	MS	51.0	%REC
09042240	1,1-Dichloroethene	MSD	60.0	%REC
09042233	1,1-Dichloroethene	MSD	71.0	%REC
09042253	1,1-Dichloroethene	MSD	71.0	%REC
09042233	1,1-Dichloroethene	MS	75.0	%REC
09082527	1,1-Dichloroethene	MSD	78.0	%REC
09082527	1,1-Dichloroethene	MS	79.0	%REC
09042253	1,1-Dichloroethene	MS	80.0	%REC
09112699	1,1-Dichloroethene	MSD	82.0	%REC
09102650	1,1-Dichloroethene	MSD	83.0	%REC
09052300	1,1-Dichloroethene	MS	84.0	%REC
09102650	1,1-Dichloroethene	MS	84.0	%REC
09112685	1,1-Dichloroethene	MS	85.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09112685	1,1-Dichloroethene	MSD	87.0	%REC
09102658	1,1-Dichloroethene	MS	88.0	%REC
09052281	1,1-Dichloroethene	MSD	90.0	%REC
09112699	1,1-Dichloroethene	MS	91.0	%REC
09112718	1,1-Dichloroethene	MS	92.0	%REC
09052300	1,1-Dichloroethene	MSD	92.0	%REC
09052332	1,1-Dichloroethene	MSD	92.0	%REC
09112699	1,1-Dichloroethene	MS	93.0	%REC
09052332	1,1-Dichloroethene	MS	94.0	%REC
09112718	1,1-Dichloroethene	MSD	94.0	%REC
09052281	1,1-Dichloroethene	MS	95.0	%REC
09072444	1,1-Dichloroethene	MSD	95.0	%REC
09102658	1,1-Dichloroethene	MSD	95.0	%REC
09112699	1,1-Dichloroethene	MSD	95.0	%REC
09052341	1,1-Dichloroethene	MSD	96.0	%REC
09092582	1,1-Dichloroethene	MSD	96.0	%REC
09052306	1,1-Dichloroethene	MS	98.0	%REC
09092582	1,1-Dichloroethene	MS	98.0	%REC
09052306	1,1-Dichloroethene	MSD	99.0	%REC
09092581	1,1-Dichloroethene	MSD	99.0	%REC
09102668	1,1-Dichloroethene	MSD	99.0	%REC
09072444	1,1-Dichloroethene	MS	101.0	%REC
09102656	1,1-Dichloroethene	MSD	101.0	%REC
09062399	1,1-Dichloroethene	MS	102.0	%REC
09092581	1,1-Dichloroethene	MS	102.0	%REC
09102656	1,1-Dichloroethene	MS	103.0	%REC
09102668	1,1-Dichloroethene	MS	103.0	%REC
09052341	1,1-Dichloroethene	MS	104.0	%REC
09112685	1,1-Dichloroethene	MSD	104.0	%REC
09082511	1,1-Dichloroethene	MSD	105.0	%REC
09072455	1,1-Dichloroethene	MS	107.0	%REC
09082511	1,1-Dichloroethene	MS	107.0	%REC
09112685	1,1-Dichloroethene	MS	107.0	%REC
09062399	1,1-Dichloroethene	MSD	107.0	%REC
09102645	1,1-Dichloroethene	MS	109.0	%REC
09072455	1,1-Dichloroethene	MSD	109.0	%REC
09082499	1,1-Dichloroethene	MSD	109.0	%REC
09042255	1,1-Dichloroethene	MS	111.0	%REC
09082499	1,1-Dichloroethene	MS	112.0	%REC
09092584	1,1-Dichloroethene	MSD	113.0	%REC
09062383	1,1-Dichloroethene	MS	118.0	%REC
09102645	1,1-Dichloroethene	MSD	118.0	%REC
09042255	1,1-Dichloroethene	MSD	120.0	%REC
09082527	1,1-Dichloroethene	MS	122.0	%REC
09032134	1,1-Dichloroethene	MS	123.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09062383	1,1-Dichloroethene	MSD	123.0	%REC
09082527	1,1-Dichloroethene	MSD	125.0	%REC
09092584	1,1-Dichloroethene	MS	127.0	%REC
09032134	1,1-Dichloroethene	MSD	128.0	%REC
09022131	1,1-Dichloroethene	MS	139.0	%REC
09022131	1,1-Dichloroethene	MSD	143.0	%REC
09042219	1,1-Dichloroethylene	MSD	90.7	%REC
09042219	1,1-Dichloroethylene	MS	95.6	%REC
09012069	1,1-Dichloroethylene	MSD	111.0	%REC
09012069	1,1-Dichloroethylene	MS	113.0	%REC
09012069	1,2,4-Trichlorobenzene	MSD	94.4	%REC
09012069	1,2,4-Trichlorobenzene	MS	95.6	%REC
09042219	1,2,4-Trichlorobenzene	MSD	103.0	%REC
09042219	1,2,4-Trichlorobenzene	MS	107.0	%REC
09012069	1,2-Dibromo-3-chloropropane	MSD	93.7	%REC
09012069	1,2-Dibromo-3-chloropropane	MS	94.2	%REC
09042219	1,2-Dibromo-3-chloropropane	MSD	101.0	%REC
09042219	1,2-Dibromo-3-chloropropane	MS	118.0	%REC
09042219	1,2-Dibromoethane	MSD	93.1	%REC
09042219	1,2-Dibromoethane	MS	101.0	%REC
09012069	1,2-Dibromoethane	MS	103.0	%REC
09012069	1,2-Dibromoethane	MSD	103.0	%REC
09042219	1,2-Dichlorobenzene	MSD	95.9	%REC
09042219	1,2-Dichlorobenzene	MS	99.3	%REC
09012069	1,2-Dichlorobenzene	MS	101.0	%REC
09012069	1,2-Dichlorobenzene	MSD	101.0	%REC
09042219	1,2-Dichloroethane	MSD	92.6	%REC
09042219	1,2-Dichloroethane	MS	100.0	%REC
09012069	1,2-Dichloroethane	MSD	102.0	%REC
09012069	1,2-Dichloroethane	MS	104.0	%REC
09102658	1,2-Dichloropropane	MS	79.0	%REC
09112718	1,2-Dichloropropane	MSD	80.0	%REC
09052281	1,2-Dichloropropane	MSD	84.0	%REC
09082527	1,2-Dichloropropane	MS	85.0	%REC
09092584	1,2-Dichloropropane	MSD	86.0	%REC
09052306	1,2-Dichloropropane	MS	87.0	%REC
09082527	1,2-Dichloropropane	MSD	87.0	%REC
09112685	1,2-Dichloropropane	MSD	87.0	%REC
09052281	1,2-Dichloropropane	MS	88.0	%REC
09112685	1,2-Dichloropropane	MS	88.0	%REC
09052306	1,2-Dichloropropane	MSD	89.0	%REC
09072444	1,2-Dichloropropane	MSD	89.0	%REC
09112685	1,2-Dichloropropane	MSD	89.0	%REC
09042240	1,2-Dichloropropane	MS	90.0	%REC
09072444	1,2-Dichloropropane	MS	90.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09112718	1,2-Dichloropropane	MS	90.0	%REC
09042240	1,2-Dichloropropane	MSD	90.0	%REC
09042253	1,2-Dichloropropane	MSD	90.0	%REC
09052341	1,2-Dichloropropane	MSD	90.0	%REC
09112685	1,2-Dichloropropane	MS	91.0	%REC
09102658	1,2-Dichloropropane	MSD	91.0	%REC
09042219	1,2-Dichloropropane	MSD	91.8	%REC
09052300	1,2-Dichloropropane	MS	93.0	%REC
09102645	1,2-Dichloropropane	MS	95.0	%REC
09042233	1,2-Dichloropropane	MSD	95.0	%REC
09042219	1,2-Dichloropropane	MS	95.3	%REC
09092581	1,2-Dichloropropane	MS	97.0	%REC
09102650	1,2-Dichloropropane	MS	97.0	%REC
09102650	1,2-Dichloropropane	MSD	97.0	%REC
09092581	1,2-Dichloropropane	MSD	98.0	%REC
09042253	1,2-Dichloropropane	MS	99.0	%REC
09062399	1,2-Dichloropropane	MS	99.0	%REC
09052341	1,2-Dichloropropane	MS	100.0	%REC
09072455	1,2-Dichloropropane	MS	100.0	%REC
09092582	1,2-Dichloropropane	MS	100.0	%REC
09092584	1,2-Dichloropropane	MS	100.0	%REC
09052300	1,2-Dichloropropane	MSD	100.0	%REC
09052332	1,2-Dichloropropane	MSD	100.0	%REC
09102668	1,2-Dichloropropane	MS	101.0	%REC
09062399	1,2-Dichloropropane	MSD	101.0	%REC
09092582	1,2-Dichloropropane	MSD	101.0	%REC
09102645	1,2-Dichloropropane	MSD	101.0	%REC
09102668	1,2-Dichloropropane	MSD	101.0	%REC
09052332	1,2-Dichloropropane	MS	102.0	%REC
09072455	1,2-Dichloropropane	MSD	102.0	%REC
09042233	1,2-Dichloropropane	MS	103.0	%REC
09112699	1,2-Dichloropropane	MS	103.0	%REC
09082511	1,2-Dichloropropane	MS	104.0	%REC
09102656	1,2-Dichloropropane	MSD	104.0	%REC
09082527	1,2-Dichloropropane	MS	105.0	%REC
09082499	1,2-Dichloropropane	MSD	105.0	%REC
09082511	1,2-Dichloropropane	MSD	105.0	%REC
09082499	1,2-Dichloropropane	MS	106.0	%REC
09112699	1,2-Dichloropropane	MSD	106.0	%REC
09082527	1,2-Dichloropropane	MSD	107.0	%REC
09012069	1,2-Dichloropropane	MSD	108.0	%REC
09012069	1,2-Dichloropropane	MS	109.0	%REC
09102656	1,2-Dichloropropane	MS	109.0	%REC
09112699	1,2-Dichloropropane	MSD	110.0	%REC
09032134	1,2-Dichloropropane	MS	113.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09042255	1,2-Dichloropropane	MS	113.0	%REC
09112699	1,2-Dichloropropane	MS	114.0	%REC
09062383	1,2-Dichloropropane	MS	115.0	%REC
09032134	1,2-Dichloropropane	MSD	116.0	%REC
09062383	1,2-Dichloropropane	MSD	116.0	%REC
09042255	1,2-Dichloropropane	MSD	119.0	%REC
09022131	1,2-Dichloropropane	MS	127.0	%REC
09022131	1,2-Dichloropropane	MSD	131.0	%REC
09112718	1,3-Dichlorobenzene	MSD	53.0	%REC
09112718	1,3-Dichlorobenzene	MS	61.0	%REC
09092584	1,3-Dichlorobenzene	MSD	67.0	%REC
09042240	1,3-Dichlorobenzene	MSD	76.0	%REC
09042240	1,3-Dichlorobenzene	MS	78.0	%REC
09042255	1,3-Dichlorobenzene	MS	79.0	%REC
09072444	1,3-Dichlorobenzene	MSD	79.0	%REC
09072444	1,3-Dichlorobenzene	MS	81.0	%REC
09102658	1,3-Dichlorobenzene	MS	81.0	%REC
09112685	1,3-Dichlorobenzene	MSD	81.0	%REC
09082527	1,3-Dichlorobenzene	MS	82.0	%REC
09102650	1,3-Dichlorobenzene	MS	84.0	%REC
09112685	1,3-Dichlorobenzene	MS	84.0	%REC
09042233	1,3-Dichlorobenzene	MSD	84.0	%REC
09092584	1,3-Dichlorobenzene	MS	85.0	%REC
09112699	1,3-Dichlorobenzene	MS	85.0	%REC
09102650	1,3-Dichlorobenzene	MSD	85.0	%REC
09042253	1,3-Dichlorobenzene	MSD	86.0	%REC
09042255	1,3-Dichlorobenzene	MSD	86.0	%REC
09062399	1,3-Dichlorobenzene	MS	87.0	%REC
09052281	1,3-Dichlorobenzene	MSD	87.0	%REC
09052281	1,3-Dichlorobenzene	MS	88.0	%REC
09102668	1,3-Dichlorobenzene	MS	88.0	%REC
09082527	1,3-Dichlorobenzene	MSD	88.0	%REC
09082511	1,3-Dichlorobenzene	MS	89.0	%REC
09062399	1,3-Dichlorobenzene	MSD	89.0	%REC
09052341	1,3-Dichlorobenzene	MSD	90.0	%REC
09082511	1,3-Dichlorobenzene	MSD	90.0	%REC
09112699	1,3-Dichlorobenzene	MSD	90.0	%REC
09052306	1,3-Dichlorobenzene	MS	91.0	%REC
09042233	1,3-Dichlorobenzene	MS	92.0	%REC
09042253	1,3-Dichlorobenzene	MS	92.0	%REC
09052332	1,3-Dichlorobenzene	MS	92.0	%REC
09102645	1,3-Dichlorobenzene	MS	92.0	%REC
09052300	1,3-Dichlorobenzene	MS	93.0	%REC
09092582	1,3-Dichlorobenzene	MSD	93.0	%REC
09112685	1,3-Dichlorobenzene	MSD	93.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09112699	1,3-Dichlorobenzene	MSD	93.0	%REC
09092581	1,3-Dichlorobenzene	MS	94.0	%REC
09092582	1,3-Dichlorobenzene	MS	94.0	%REC
09112685	1,3-Dichlorobenzene	MS	94.0	%REC
09052306	1,3-Dichlorobenzene	MSD	94.0	%REC
09102668	1,3-Dichlorobenzene	MSD	94.0	%REC
09082499	1,3-Dichlorobenzene	MS	95.0	%REC
09082499	1,3-Dichlorobenzene	MSD	95.0	%REC
09102658	1,3-Dichlorobenzene	MSD	95.0	%REC
09042219	1,3-Dichlorobenzene	MSD	95.1	%REC
09102656	1,3-Dichlorobenzene	MSD	97.0	%REC
09042219	1,3-Dichlorobenzene	MS	97.6	%REC
09092581	1,3-Dichlorobenzene	MSD	98.0	%REC
09082527	1,3-Dichlorobenzene	MS	100.0	%REC
09102656	1,3-Dichlorobenzene	MS	101.0	%REC
09112699	1,3-Dichlorobenzene	MS	101.0	%REC
09062383	1,3-Dichlorobenzene	MSD	101.0	%REC
09102645	1,3-Dichlorobenzene	MSD	101.0	%REC
09062383	1,3-Dichlorobenzene	MS	102.0	%REC
09012069	1,3-Dichlorobenzene	MSD	103.0	%REC
09052300	1,3-Dichlorobenzene	MSD	103.0	%REC
09082527	1,3-Dichlorobenzene	MSD	103.0	%REC
09012069	1,3-Dichlorobenzene	MS	104.0	%REC
09052332	1,3-Dichlorobenzene	MSD	104.0	%REC
09052341	1,3-Dichlorobenzene	MS	105.0	%REC
09072455	1,3-Dichlorobenzene	MS	105.0	%REC
09032134	1,3-Dichlorobenzene	MS	107.0	%REC
09072455	1,3-Dichlorobenzene	MSD	107.0	%REC
09022131	1,3-Dichlorobenzene	MS	108.0	%REC
09022131	1,3-Dichlorobenzene	MSD	111.0	%REC
09032134	1,3-Dichlorobenzene	MSD	111.0	%REC
09042219	1,4-Dichlorobenzene	MSD	92.9	%REC
09042219	1,4-Dichlorobenzene	MS	95.8	%REC
09012069	1,4-Dichlorobenzene	MSD	101.0	%REC
09012069	1,4-Dichlorobenzene	MS	102.0	%REC
09032195	Arsenic	MS	90.0	%REC
09032195	Arsenic	MSD	91.0	%REC
09032195	Arsenic	MSD	92.0	%REC
09092622	Arsenic	MS	92.5	%REC
09032195	Arsenic	MS	93.0	%REC
09042246	Arsenic	MS	93.0	%REC
09122754	Arsenic	MSD	93.0	%REC
09032134	Arsenic	MS	94.0	%REC
09112685	Arsenic	MS	94.0	%REC
09122754	Arsenic	MS	94.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09022120	Arsenic	MSD	94.0	%REC
09032134	Arsenic	MSD	94.0	%REC
09112685	Arsenic	MSD	94.0	%REC
09022120	Arsenic	MS	95.0	%REC
09112699	Arsenic	MS	97.0	%REC
09042233	Arsenic	MSD	97.0	%REC
09112699	Arsenic	MSD	97.0	%REC
09042219	Arsenic	MS	97.6	%REC
09052306	Arsenic	MS	98.0	%REC
09092581	Arsenic	MSD	98.0	%REC
09042254	Arsenic	MS	98.5	%REC
09052279	Arsenic	MS	98.9	%REC
09042233	Arsenic	MS	99.0	%REC
09052306	Arsenic	MSD	99.0	%REC
09122742	Arsenic	MS	99.2	%REC
09072444	Arsenic	MS	100.0	%REC
09082527	Arsenic	MS	100.0	%REC
09092581	Arsenic	MS	100.0	%REC
09102658	Arsenic	MS	100.0	%REC
09092584	Arsenic	MS	101.0	%REC
09082527	Arsenic	MSD	101.0	%REC
09102658	Arsenic	MSD	101.0	%REC
09072444	Arsenic	MSD	102.0	%REC
09052342	Arsenic	MS	103.0	%REC
09082511	Arsenic	MS	103.0	%REC
09072455	Arsenic	MSD	103.0	%REC
09082511	Arsenic	MSD	103.0	%REC
09092584	Arsenic	MSD	103.0	%REC
09032144	Arsenic	MS	104.0	%REC
09042221	Arsenic	MS	104.0	%REC
09122742	Arsenic	MS	104.0	%REC
09072455	Arsenic	MS	105.0	%REC
09012069	Arsenic	MS	106.0	%REC
09042248	Arsenic	MS	106.0	%REC
09112718	Arsenic	MS	106.0	%REC
10012825	Arsenic	MS	106.0	%REC
09112718	Arsenic	MSD	109.0	%REC
09042240	Benzene	MS	81.0	%REC
09042240	Benzene	MSD	81.0	%REC
09112718	Benzene	MSD	81.0	%REC
09082527	Benzene	MS	84.0	%REC
09102658	Benzene	MS	85.0	%REC
09112685	Benzene	MS	86.0	%REC
09112718	Benzene	MS	86.0	%REC
09082527	Benzene	MSD	86.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09112685	Benzene	MSD	87.0	%REC
09112699	Benzene	MS	89.0	%REC
09042233	Benzene	MSD	89.0	%REC
09042253	Benzene	MSD	89.0	%REC
09072444	Benzene	MSD	89.0	%REC
09042219	Benzene	MSD	89.3	%REC
09052281	Benzene	MSD	90.0	%REC
09052341	Benzene	MSD	90.0	%REC
09112685	Benzene	MSD	90.0	%REC
09052306	Benzene	MS	91.0	%REC
09102645	Benzene	MS	91.0	%REC
09052306	Benzene	MSD	92.0	%REC
09112699	Benzene	MSD	92.0	%REC
09042219	Benzene	MS	92.8	%REC
09102650	Benzene	MSD	93.0	%REC
09052281	Benzene	MS	94.0	%REC
09102650	Benzene	MS	94.0	%REC
09112685	Benzene	MS	94.0	%REC
09052332	Benzene	MSD	94.0	%REC
09102658	Benzene	MSD	94.0	%REC
09112699	Benzene	MSD	94.0	%REC
09052332	Benzene	MS	95.0	%REC
09062399	Benzene	MS	95.0	%REC
09072444	Benzene	MS	95.0	%REC
09092584	Benzene	MSD	96.0	%REC
09042253	Benzene	MS	97.0	%REC
09042233	Benzene	MS	98.0	%REC
09102668	Benzene	MS	98.0	%REC
09062399	Benzene	MSD	98.0	%REC
09102668	Benzene	MSD	99.0	%REC
09052300	Benzene	MS	100.0	%REC
09112699	Benzene	MS	100.0	%REC
09082511	Benzene	MS	101.0	%REC
09082511	Benzene	MSD	101.0	%REC
09092582	Benzene	MSD	102.0	%REC
09102645	Benzene	MSD	102.0	%REC
09042255	Benzene	MS	103.0	%REC
09052341	Benzene	MS	103.0	%REC
09072455	Benzene	MS	103.0	%REC
09092581	Benzene	MS	103.0	%REC
09102656	Benzene	MSD	103.0	%REC
09082527	Benzene	MS	104.0	%REC
09092582	Benzene	MS	104.0	%REC
09052300	Benzene	MSD	104.0	%REC
09092581	Benzene	MSD	104.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09072455	Benzene	MSD	105.0	%REC
09012069	Benzene	MSD	106.0	%REC
09082527	Benzene	MSD	107.0	%REC
09012069	Benzene	MS	108.0	%REC
09082499	Benzene	MSD	108.0	%REC
09082499	Benzene	MS	109.0	%REC
09102656	Benzene	MS	109.0	%REC
09042255	Benzene	MSD	110.0	%REC
09092584	Benzene	MS	111.0	%REC
09032134	Benzene	MS	114.0	%REC
09062383	Benzene	MS	117.0	%REC
09032134	Benzene	MSD	118.0	%REC
09062383	Benzene	MSD	119.0	%REC
09022131	Benzene	MS	128.0	%REC
09022131	Benzene	MSD	130.0	%REC
09032186	Beryllium	MS	89.2	%REC
09032175	Beryllium	MS	94.0	%REC
09092622	Beryllium	MS	94.4	%REC
09052297	Beryllium	MS	94.9	%REC
09042219	Beryllium	MS	95.0	%REC
09082511	Beryllium	MS	95.0	%REC
09112699	Beryllium	MS	95.0	%REC
09022120	Beryllium	MSD	95.0	%REC
09042233	Beryllium	MSD	95.0	%REC
09112685	Beryllium	MSD	95.0	%REC
09112699	Beryllium	MSD	95.0	%REC
09072445	Beryllium	MS	95.4	%REC
09092581	Beryllium	MS	96.0	%REC
09112685	Beryllium	MS	96.0	%REC
09032134	Beryllium	MSD	96.0	%REC
09082511	Beryllium	MSD	96.0	%REC
09092581	Beryllium	MSD	96.0	%REC
09102651	Beryllium	MS	96.2	%REC
09022129	Beryllium	MS	96.4	%REC
09032134	Beryllium	MS	97.0	%REC
09042233	Beryllium	MS	97.0	%REC
09102658	Beryllium	MS	97.0	%REC
09122742	Beryllium	MS	97.1	%REC
09052306	Beryllium	MS	98.0	%REC
09072444	Beryllium	MS	98.0	%REC
09052306	Beryllium	MSD	98.0	%REC
09102658	Beryllium	MSD	98.0	%REC
09042245	Beryllium	MS	98.2	%REC
09052279	Beryllium	MS	98.2	%REC
09042254	Beryllium	MS	98.3	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09022120	Beryllium	MS	99.0	%REC
09032157	Beryllium	MS	99.0	%REC
09042221	Beryllium	MS	99.0	%REC
09072444	Beryllium	MSD	99.0	%REC
09022116	Beryllium	MS	99.3	%REC
09052339	Beryllium	MS	99.3	%REC
09082520	Beryllium	MS	99.5	%REC
09052315	Beryllium	MS	100.0	%REC
09062401	Beryllium	MS	100.0	%REC
09012069	Beryllium	MS	101.0	%REC
09032144	Beryllium	MS	101.0	%REC
09052342	Beryllium	MS	101.0	%REC
09082527	Beryllium	MS	101.0	%REC
09062386	Beryllium	MS	102.0	%REC
09102672	Beryllium	MS	102.0	%REC
09112686	Beryllium	MS	102.0	%REC
09082527	Beryllium	MSD	102.0	%REC
10012800	Beryllium	MS	103.0	%REC
09122742	Beryllium	MS	104.0	%REC
09042248	Beryllium	MS	105.0	%REC
10012825	Beryllium	MS	105.0	%REC
09092622	Boron	MS	90.8	%REC
09112685	Boron	MS	93.0	%REC
09112685	Boron	MSD	93.0	%REC
09112699	Boron	MSD	94.0	%REC
09042254	Boron	MS	95.0	%REC
09112699	Boron	MS	95.0	%REC
09092581	Boron	MSD	95.0	%REC
09052279	Boron	MS	95.2	%REC
09092581	Boron	MS	96.0	%REC
09022120	Boron	MS	97.0	%REC
09032134	Boron	MS	97.0	%REC
09072444	Boron	MS	97.0	%REC
09032134	Boron	MSD	97.0	%REC
09122742	Boron	MS	97.5	%REC
09042219	Boron	MS	98.0	%REC
09042233	Boron	MS	98.0	%REC
09022120	Boron	MSD	98.0	%REC
09042233	Boron	MSD	98.0	%REC
09102658	Boron	MS	99.0	%REC
09082511	Boron	MSD	99.0	%REC
09052342	Boron	MS	99.1	%REC
09032144	Boron	MS	99.3	%REC
09042221	Boron	MS	100.0	%REC
09082511	Boron	MS	100.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09122742	Boron	MS	100.0	%REC
09102658	Boron	MSD	100.0	%REC
09052306	Boron	MS	101.0	%REC
09082527	Boron	MS	101.0	%REC
09052306	Boron	MSD	101.0	%REC
09072444	Boron	MSD	102.0	%REC
09012069	Boron	MS	103.0	%REC
09042248	Boron	MS	103.0	%REC
10012825	Boron	MS	103.0	%REC
09082527	Boron	MSD	103.0	%REC
09092584	Bromodichloromethane	MSD	72.0	%REC
09052281	Bromodichloromethane	MSD	81.0	%REC
09102645	Bromodichloromethane	MS	82.0	%REC
09052341	Bromodichloromethane	MSD	82.0	%REC
09112718	Bromodichloromethane	MSD	83.0	%REC
09092584	Bromodichloromethane	MS	84.0	%REC
09072455	Bromodichloromethane	MSD	85.0	%REC
09112685	Bromodichloromethane	MSD	85.0	%REC
09052306	Bromodichloromethane	MS	86.0	%REC
09042240	Bromodichloromethane	MS	87.0	%REC
09042240	Bromodichloromethane	MSD	87.0	%REC
09042253	Bromodichloromethane	MSD	87.0	%REC
09072444	Bromodichloromethane	MSD	87.0	%REC
09052341	Bromodichloromethane	MS	88.0	%REC
09112685	Bromodichloromethane	MS	88.0	%REC
09052306	Bromodichloromethane	MSD	88.0	%REC
09052281	Bromodichloromethane	MS	89.0	%REC
09102658	Bromodichloromethane	MS	89.0	%REC
09112718	Bromodichloromethane	MS	89.0	%REC
09112685	Bromodichloromethane	MSD	89.0	%REC
09072444	Bromodichloromethane	MS	90.0	%REC
09082527	Bromodichloromethane	MS	90.0	%REC
09112685	Bromodichloromethane	MS	90.0	%REC
09102645	Bromodichloromethane	MSD	91.0	%REC
09102650	Bromodichloromethane	MS	92.0	%REC
09082527	Bromodichloromethane	MSD	92.0	%REC
09102650	Bromodichloromethane	MSD	93.0	%REC
09082527	Bromodichloromethane	MS	94.0	%REC
09112699	Bromodichloromethane	MSD	95.0	%REC
09042253	Bromodichloromethane	MS	96.0	%REC
09112699	Bromodichloromethane	MS	96.0	%REC
09072455	Bromodichloromethane	MS	97.0	%REC
09082499	Bromodichloromethane	MS	98.0	%REC
09092581	Bromodichloromethane	MS	98.0	%REC
09112699	Bromodichloromethane	MS	98.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09082499	Bromodichloromethane	MSD	98.0	%REC
09082527	Bromodichloromethane	MSD	98.0	%REC
09112699	Bromodichloromethane	MSD	98.0	%REC
09082511	Bromodichloromethane	MS	99.0	%REC
09042219	Bromodichloromethane	MSD	99.9	%REC
09062399	Bromodichloromethane	MS	100.0	%REC
09092581	Bromodichloromethane	MSD	100.0	%REC
09102668	Bromodichloromethane	MSD	100.0	%REC
09052300	Bromodichloromethane	MS	101.0	%REC
09092582	Bromodichloromethane	MS	101.0	%REC
09062399	Bromodichloromethane	MSD	101.0	%REC
09082511	Bromodichloromethane	MSD	101.0	%REC
09052332	Bromodichloromethane	MS	102.0	%REC
09102668	Bromodichloromethane	MS	102.0	%REC
09092582	Bromodichloromethane	MSD	102.0	%REC
09032134	Bromodichloromethane	MS	103.0	%REC
09042255	Bromodichloromethane	MS	103.0	%REC
09052332	Bromodichloromethane	MSD	103.0	%REC
09042233	Bromodichloromethane	MSD	104.0	%REC
09042219	Bromodichloromethane	MS	105.0	%REC
09052300	Bromodichloromethane	MSD	106.0	%REC
09102658	Bromodichloromethane	MSD	106.0	%REC
09042255	Bromodichloromethane	MSD	107.0	%REC
09012069	Bromodichloromethane	MSD	108.0	%REC
09032134	Bromodichloromethane	MSD	108.0	%REC
09012069	Bromodichloromethane	MS	109.0	%REC
09102656	Bromodichloromethane	MSD	113.0	%REC
09022131	Bromodichloromethane	MS	117.0	%REC
09042233	Bromodichloromethane	MS	117.0	%REC
09062383	Bromodichloromethane	MS	120.0	%REC
09022131	Bromodichloromethane	MSD	120.0	%REC
09062383	Bromodichloromethane	MSD	122.0	%REC
09102656	Bromodichloromethane	MS	124.0	%REC
09042219	Bromoform	MSD	102.0	%REC
09012069	Bromoform	MSD	108.0	%REC
09012069	Bromoform	MS	110.0	%REC
09042219	Bromoform	MS	112.0	%REC
09042219	Bromomethane	MSD	101.0	%REC
09042219	Bromomethane	MS	102.0	%REC
09012069	Bromomethane	MSD	119.0	%REC
09012069	Bromomethane	MS	122.0	%REC
09042219	Cadmium	MS	89.9	%REC
09102651	Cadmium	MS	90.4	%REC
09122754	Cadmium	MSD	92.0	%REC
09092622	Cadmium	MS	92.1	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09042245	Cadmium	MS	92.7	%REC
09052306	Cadmium	MS	93.0	%REC
09122754	Cadmium	MS	93.0	%REC
09052306	Cadmium	MSD	93.0	%REC
09092581	Cadmium	MSD	94.0	%REC
09052279	Cadmium	MS	94.4	%REC
09042221	Cadmium	MS	95.0	%REC
09092581	Cadmium	MS	95.0	%REC
09032195	Cadmium	MSD	95.0	%REC
09012069	Cadmium	MS	95.4	%REC
09072445	Cadmium	MS	95.4	%REC
09042254	Cadmium	MS	95.6	%REC
09052339	Cadmium	MS	95.6	%REC
09122742	Cadmium	MS	95.8	%REC
09052297	Cadmium	MS	96.0	%REC
09112699	Cadmium	MS	96.0	%REC
09112699	Cadmium	MSD	96.0	%REC
09092622	Cadmium	MS	96.8	%REC
09032195	Cadmium	MS	97.0	%REC
09072444	Cadmium	MS	97.0	%REC
09102658	Cadmium	MS	97.0	%REC
09112685	Cadmium	MS	97.0	%REC
09022120	Cadmium	MSD	97.0	%REC
09112685	Cadmium	MSD	97.0	%REC
09062386	Cadmium	MS	97.2	%REC
09062401	Cadmium	MS	97.3	%REC
09082520	Cadmium	MS	97.3	%REC
09052342	Cadmium	MS	97.7	%REC
09052279	Cadmium	MS	97.9	%REC
09012069	Cadmium	MS	98.0	%REC
09022120	Cadmium	MS	98.0	%REC
09032195	Cadmium	MS	98.0	%REC
09072444	Cadmium	MSD	98.0	%REC
09082511	Cadmium	MSD	98.0	%REC
09102658	Cadmium	MSD	98.0	%REC
09022129	Cadmium	MS	98.3	%REC
09082511	Cadmium	MS	99.0	%REC
09092584	Cadmium	MS	99.0	%REC
09032195	Cadmium	MSD	99.0	%REC
09122742	Cadmium	MS	99.8	%REC
09032134	Cadmium	MS	100.0	%REC
09032144	Cadmium	MS	100.0	%REC
09082527	Cadmium	MS	100.0	%REC
10012800	Cadmium	MS	100.0	%REC
09032134	Cadmium	MSD	100.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09082527	Cadmium	MSD	100.0	%REC
09092584	Cadmium	MSD	100.0	%REC
09052315	Cadmium	MS	101.0	%REC
09102672	Cadmium	MS	101.0	%REC
09112686	Cadmium	MS	101.0	%REC
09122742	Cadmium	MS	101.0	%REC
09042233	Cadmium	MSD	101.0	%REC
09032157	Cadmium	MS	102.0	%REC
09032175	Cadmium	MS	102.0	%REC
09032186	Cadmium	MS	102.0	%REC
09042221	Cadmium	MS	102.0	%REC
09042248	Cadmium	MS	103.0	%REC
10012825	Cadmium	MS	103.0	%REC
09022116	Cadmium	MS	104.0	%REC
09042233	Cadmium	MS	104.0	%REC
09072455	Cadmium	MSD	104.0	%REC
09112718	Cadmium	MS	105.0	%REC
09072455	Cadmium	MS	106.0	%REC
09042248	Cadmium	MS	107.0	%REC
09042254	Cadmium	MS	107.0	%REC
09112718	Cadmium	MSD	107.0	%REC
09042240	Carbon tetrachloride	MS	83.0	%REC
09042240	Carbon tetrachloride	MSD	83.0	%REC
09112699	Carbon tetrachloride	MSD	83.0	%REC
09072455	Carbon tetrachloride	MSD	84.0	%REC
09092584	Carbon tetrachloride	MSD	84.0	%REC
09112718	Carbon tetrachloride	MS	86.0	%REC
09052341	Carbon tetrachloride	MSD	87.0	%REC
09072444	Carbon tetrachloride	MSD	89.0	%REC
09112718	Carbon tetrachloride	MSD	90.0	%REC
09052300	Carbon tetrachloride	MS	91.0	%REC
09112685	Carbon tetrachloride	MS	91.0	%REC
09072444	Carbon tetrachloride	MS	92.0	%REC
09112699	Carbon tetrachloride	MS	92.0	%REC
09112699	Carbon tetrachloride	MS	92.0	%REC
09042253	Carbon tetrachloride	MSD	92.0	%REC
09052281	Carbon tetrachloride	MS	94.0	%REC
09072455	Carbon tetrachloride	MS	94.0	%REC
09082527	Carbon tetrachloride	MS	94.0	%REC
09102645	Carbon tetrachloride	MS	94.0	%REC
09052281	Carbon tetrachloride	MSD	94.0	%REC
09112685	Carbon tetrachloride	MSD	94.0	%REC
09112685	Carbon tetrachloride	MSD	94.0	%REC
09052341	Carbon tetrachloride	MS	95.0	%REC
09042219	Carbon tetrachloride	MSD	95.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09112699	Carbon tetrachloride	MSD	95.0	%REC
09082511	Carbon tetrachloride	MS	96.0	%REC
09082527	Carbon tetrachloride	MSD	96.0	%REC
09112685	Carbon tetrachloride	MS	97.0	%REC
09082511	Carbon tetrachloride	MSD	97.0	%REC
09032134	Carbon tetrachloride	MS	98.0	%REC
09092584	Carbon tetrachloride	MS	98.0	%REC
09052300	Carbon tetrachloride	MSD	98.0	%REC
09062399	Carbon tetrachloride	MSD	99.0	%REC
09092582	Carbon tetrachloride	MSD	99.0	%REC
09042219	Carbon tetrachloride	MS	100.0	%REC
09062399	Carbon tetrachloride	MS	100.0	%REC
09102658	Carbon tetrachloride	MS	100.0	%REC
09102668	Carbon tetrachloride	MS	100.0	%REC
09102645	Carbon tetrachloride	MSD	100.0	%REC
09052332	Carbon tetrachloride	MSD	101.0	%REC
09052306	Carbon tetrachloride	MS	102.0	%REC
09052332	Carbon tetrachloride	MS	102.0	%REC
09042253	Carbon tetrachloride	MS	103.0	%REC
09052306	Carbon tetrachloride	MSD	103.0	%REC
09062383	Carbon tetrachloride	MSD	103.0	%REC
09082499	Carbon tetrachloride	MSD	103.0	%REC
09102668	Carbon tetrachloride	MSD	103.0	%REC
09062383	Carbon tetrachloride	MS	104.0	%REC
09082499	Carbon tetrachloride	MS	104.0	%REC
09092582	Carbon tetrachloride	MS	104.0	%REC
09032134	Carbon tetrachloride	MSD	104.0	%REC
09082527	Carbon tetrachloride	MS	105.0	%REC
09082527	Carbon tetrachloride	MSD	108.0	%REC
09102650	Carbon tetrachloride	MSD	109.0	%REC
09092581	Carbon tetrachloride	MS	110.0	%REC
09012069	Carbon tetrachloride	MSD	110.0	%REC
09042233	Carbon tetrachloride	MSD	110.0	%REC
09102656	Carbon tetrachloride	MSD	110.0	%REC
09042255	Carbon tetrachloride	MS	111.0	%REC
09092581	Carbon tetrachloride	MSD	111.0	%REC
09102650	Carbon tetrachloride	MS	112.0	%REC
09102658	Carbon tetrachloride	MSD	112.0	%REC
09012069	Carbon tetrachloride	MS	113.0	%REC
09022131	Carbon tetrachloride	MS	116.0	%REC
09042233	Carbon tetrachloride	MS	119.0	%REC
09042255	Carbon tetrachloride	MSD	119.0	%REC
09102656	Carbon tetrachloride	MS	121.0	%REC
09022131	Carbon tetrachloride	MSD	121.0	%REC
09112718	Chlorobenzene	MSD	68.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09112718	Chlorobenzene	MS	72.0	%REC
09072444	Chlorobenzene	MSD	82.0	%REC
09082527	Chlorobenzene	MS	83.0	%REC
09092584	Chlorobenzene	MSD	84.0	%REC
09112685	Chlorobenzene	MSD	84.0	%REC
09072444	Chlorobenzene	MS	85.0	%REC
09052281	Chlorobenzene	MSD	85.0	%REC
09082527	Chlorobenzene	MSD	86.0	%REC
09042240	Chlorobenzene	MS	87.0	%REC
09112685	Chlorobenzene	MS	87.0	%REC
09042240	Chlorobenzene	MSD	87.0	%REC
09052281	Chlorobenzene	MS	88.0	%REC
09112685	Chlorobenzene	MSD	88.0	%REC
09052306	Chlorobenzene	MS	89.0	%REC
09102658	Chlorobenzene	MS	89.0	%REC
09052306	Chlorobenzene	MSD	89.0	%REC
09042255	Chlorobenzene	MS	90.0	%REC
09062399	Chlorobenzene	MS	90.0	%REC
09102650	Chlorobenzene	MS	90.0	%REC
09042253	Chlorobenzene	MSD	90.0	%REC
09062399	Chlorobenzene	MSD	90.0	%REC
09102650	Chlorobenzene	MSD	90.0	%REC
09052341	Chlorobenzene	MSD	91.0	%REC
09102645	Chlorobenzene	MS	92.0	%REC
09112685	Chlorobenzene	MS	92.0	%REC
09052332	Chlorobenzene	MS	93.0	%REC
09052332	Chlorobenzene	MSD	93.0	%REC
09042219	Chlorobenzene	MSD	93.7	%REC
09042255	Chlorobenzene	MSD	95.0	%REC
09102658	Chlorobenzene	MSD	96.0	%REC
09052300	Chlorobenzene	MS	97.0	%REC
09082511	Chlorobenzene	MS	97.0	%REC
09102668	Chlorobenzene	MS	97.0	%REC
09042219	Chlorobenzene	MS	97.2	%REC
09042253	Chlorobenzene	MS	98.0	%REC
09082511	Chlorobenzene	MSD	98.0	%REC
09082527	Chlorobenzene	MS	99.0	%REC
09092584	Chlorobenzene	MS	99.0	%REC
09102668	Chlorobenzene	MSD	99.0	%REC
09042233	Chlorobenzene	MSD	100.0	%REC
09052341	Chlorobenzene	MS	101.0	%REC
09082499	Chlorobenzene	MSD	101.0	%REC
09082527	Chlorobenzene	MSD	101.0	%REC
09092581	Chlorobenzene	MSD	101.0	%REC
09102656	Chlorobenzene	MSD	101.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09082499	Chlorobenzene	MS	102.0	%REC
09092582	Chlorobenzene	MS	102.0	%REC
09052300	Chlorobenzene	MSD	102.0	%REC
09092582	Chlorobenzene	MSD	102.0	%REC
09092581	Chlorobenzene	MS	103.0	%REC
09102645	Chlorobenzene	MSD	103.0	%REC
09112699	Chlorobenzene	MS	104.0	%REC
09012069	Chlorobenzene	MSD	104.0	%REC
09012069	Chlorobenzene	MS	105.0	%REC
09072455	Chlorobenzene	MSD	106.0	%REC
09072455	Chlorobenzene	MS	107.0	%REC
09112699	Chlorobenzene	MSD	107.0	%REC
09112699	Chlorobenzene	MSD	107.0	%REC
09032134	Chlorobenzene	MS	110.0	%REC
09042233	Chlorobenzene	MS	111.0	%REC
09102656	Chlorobenzene	MS	111.0	%REC
09022131	Chlorobenzene	MS	113.0	%REC
09022131	Chlorobenzene	MSD	114.0	%REC
09032134	Chlorobenzene	MSD	114.0	%REC
09112699	Chlorobenzene	MS	115.0	%REC
09062383	Chlorobenzene	MS	124.0	%REC
09062383	Chlorobenzene	MSD	127.0	%REC
09042253	Chloroform	MSD	69.0	%REC
09112718	Chloroform	MSD	81.0	%REC
09112718	Chloroform	MS	84.0	%REC
09052341	Chloroform	MSD	86.0	%REC
09102645	Chloroform	MS	87.0	%REC
09082527	Chloroform	MS	88.0	%REC
09042240	Chloroform	MSD	89.0	%REC
09112685	Chloroform	MS	90.0	%REC
09072444	Chloroform	MSD	90.0	%REC
09112685	Chloroform	MSD	90.0	%REC
09052281	Chloroform	MS	91.0	%REC
09102658	Chloroform	MS	91.0	%REC
09112699	Chloroform	MS	91.0	%REC
09052281	Chloroform	MSD	91.0	%REC
09082527	Chloroform	MSD	91.0	%REC
09112699	Chloroform	MSD	91.0	%REC
09042219	Chloroform	MSD	91.8	%REC
09042240	Chloroform	MS	92.0	%REC
09052306	Chloroform	MS	92.0	%REC
09112685	Chloroform	MSD	92.0	%REC
09112685	Chloroform	MS	93.0	%REC
09052306	Chloroform	MSD	93.0	%REC
09072444	Chloroform	MS	94.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09112699	Chloroform	MSD	94.0	%REC
09042253	Chloroform	MS	95.0	%REC
09112699	Chloroform	MS	95.0	%REC
09042219	Chloroform	MS	95.9	%REC
09102650	Chloroform	MSD	96.0	%REC
09052341	Chloroform	MS	98.0	%REC
09052332	Chloroform	MSD	98.0	%REC
09102645	Chloroform	MSD	98.0	%REC
09062399	Chloroform	MS	99.0	%REC
09102650	Chloroform	MS	99.0	%REC
09082511	Chloroform	MSD	99.0	%REC
09102658	Chloroform	MSD	99.0	%REC
09042255	Chloroform	MS	100.0	%REC
09052332	Chloroform	MS	100.0	%REC
09082511	Chloroform	MS	100.0	%REC
09082527	Chloroform	MS	100.0	%REC
09092582	Chloroform	MSD	100.0	%REC
09052300	Chloroform	MS	101.0	%REC
09072455	Chloroform	MS	101.0	%REC
09062399	Chloroform	MSD	101.0	%REC
09092582	Chloroform	MS	102.0	%REC
09082527	Chloroform	MSD	102.0	%REC
09052300	Chloroform	MSD	103.0	%REC
09092581	Chloroform	MSD	103.0	%REC
09092581	Chloroform	MS	104.0	%REC
09102668	Chloroform	MS	104.0	%REC
09102668	Chloroform	MSD	104.0	%REC
09012069	Chloroform	MSD	105.0	%REC
09042233	Chloroform	MSD	105.0	%REC
09042255	Chloroform	MSD	105.0	%REC
09082499	Chloroform	MS	107.0	%REC
09092584	Chloroform	MSD	107.0	%REC
09012069	Chloroform	MS	108.0	%REC
09082499	Chloroform	MSD	108.0	%REC
09072455	Chloroform	MSD	109.0	%REC
09032134	Chloroform	MS	110.0	%REC
09102656	Chloroform	MSD	113.0	%REC
09032134	Chloroform	MSD	116.0	%REC
09042233	Chloroform	MS	117.0	%REC
09062383	Chloroform	MS	121.0	%REC
09102656	Chloroform	MS	121.0	%REC
09062383	Chloroform	MSD	123.0	%REC
09022131	Chloroform	MS	124.0	%REC
09092584	Chloroform	MS	124.0	%REC
09022131	Chloroform	MSD	125.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09042219	Chloromethane	MSD	92.2	%REC
09042219	Chloromethane	MS	96.0	%REC
09012069	Chloromethane	MSD	124.0	%REC
09012069	Chloromethane	MS	129.0	%REC
09032186	Chromium	MS	88.0	%REC
09122754	Chromium	MSD	90.0	%REC
09122754	Chromium	MS	91.0	%REC
09032175	Chromium	MS	92.0	%REC
09032195	Chromium	MS	92.0	%REC
09072445	Chromium	MS	93.0	%REC
09032195	Chromium	MSD	93.0	%REC
09052297	Chromium	MS	93.4	%REC
09042219	Chromium	MS	93.7	%REC
09102651	Chromium	MS	93.7	%REC
09042233	Chromium	MSD	95.0	%REC
09022129	Chromium	MS	95.5	%REC
09052306	Chromium	MS	96.0	%REC
09032195	Chromium	MSD	96.0	%REC
09052306	Chromium	MSD	96.0	%REC
09112699	Chromium	MSD	96.0	%REC
09042254	Chromium	MS	96.5	%REC
09042245	Chromium	MS	96.7	%REC
09122742	Chromium	MS	96.7	%REC
09052339	Chromium	MS	97.0	%REC
09072444	Chromium	MS	97.0	%REC
09112685	Chromium	MS	97.0	%REC
09112699	Chromium	MS	97.0	%REC
09112685	Chromium	MSD	97.0	%REC
09052279	Chromium	MS	97.2	%REC
09032144	Chromium	MS	97.5	%REC
09042221	Chromium	MS	97.5	%REC
09032195	Chromium	MS	98.0	%REC
09042233	Chromium	MS	98.0	%REC
09052315	Chromium	MS	98.0	%REC
09062401	Chromium	MS	98.0	%REC
09092581	Chromium	MS	98.0	%REC
09022120	Chromium	MSD	98.0	%REC
09072444	Chromium	MSD	98.0	%REC
09032157	Chromium	MS	98.2	%REC
09082520	Chromium	MS	98.3	%REC
09022116	Chromium	MS	98.4	%REC
09052342	Chromium	MS	98.8	%REC
09022120	Chromium	MS	99.0	%REC
09092584	Chromium	MS	99.0	%REC
09102658	Chromium	MS	99.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09092581	Chromium	MSD	99.0	%REC
09102658	Chromium	MSD	99.0	%REC
09012069	Chromium	MS	99.7	%REC
09032134	Chromium	MS	100.0	%REC
09092622	Chromium	MS	100.0	%REC
09032134	Chromium	MSD	100.0	%REC
09092584	Chromium	MSD	100.0	%REC
09062386	Chromium	MS	101.0	%REC
09082527	Chromium	MS	101.0	%REC
10012825	Chromium	MS	101.0	%REC
09082511	Chromium	MSD	101.0	%REC
09082527	Chromium	MSD	101.0	%REC
09082511	Chromium	MS	102.0	%REC
09102672	Chromium	MS	102.0	%REC
09112686	Chromium	MS	102.0	%REC
09122742	Chromium	MS	102.0	%REC
10012800	Chromium	MS	102.0	%REC
09072455	Chromium	MSD	102.0	%REC
09042248	Chromium	MS	103.0	%REC
09112718	Chromium	MS	103.0	%REC
09072455	Chromium	MS	105.0	%REC
09112718	Chromium	MSD	105.0	%REC
09042219	cis-1,2-Dichloroethylene	MSD	98.3	%REC
09042219	cis-1,2-Dichloroethylene	MS	101.0	%REC
09012069	cis-1,2-Dichloroethylene	MSD	114.0	%REC
09012069	cis-1,2-Dichloroethylene	MS	116.0	%REC
09032134	Copper	MS	97.0	%REC
09042233	Copper	MSD	97.0	%REC
09022120	Copper	MSD	98.0	%REC
09032134	Copper	MSD	98.0	%REC
09042233	Copper	MS	99.0	%REC
09052306	Copper	MS	99.0	%REC
09102658	Copper	MS	99.0	%REC
09112699	Copper	MS	99.0	%REC
09052306	Copper	MSD	99.0	%REC
09102658	Copper	MSD	99.0	%REC
09112699	Copper	MSD	99.0	%REC
09032144	Copper	MS	99.7	%REC
09022120	Copper	MS	100.0	%REC
09042254	Copper	MS	100.0	%REC
09072444	Copper	MS	100.0	%REC
09082511	Copper	MS	100.0	%REC
09112685	Copper	MS	100.0	%REC
09122742	Copper	MS	100.0	%REC
09092581	Copper	MSD	100.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09112685	Copper	MSD	100.0	%REC
09092581	Copper	MS	101.0	%REC
09042219	Copper	MS	102.0	%REC
09042221	Copper	MS	102.0	%REC
09072444	Copper	MSD	102.0	%REC
09082511	Copper	MSD	102.0	%REC
09052279	Copper	MS	103.0	%REC
09052342	Copper	MS	103.0	%REC
10012825	Copper	MS	103.0	%REC
09082527	Copper	MS	104.0	%REC
09122742	Copper	MS	104.0	%REC
09082527	Copper	MSD	104.0	%REC
09092622	Copper	MS	105.0	%REC
09042248	Copper	MS	108.0	%REC
09012069	Copper	MS	109.0	%REC
09042219	Dibromochloromethane	MSD	95.7	%REC
09042219	Dibromochloromethane	MS	102.0	%REC
09012069	Dibromochloromethane	MSD	106.0	%REC
09012069	Dibromochloromethane	MS	108.0	%REC
09112718	Ethylbenzene	MSD	67.0	%REC
09112718	Ethylbenzene	MS	77.0	%REC
09082527	Ethylbenzene	MS	83.0	%REC
09102658	Ethylbenzene	MS	84.0	%REC
09042240	Ethylbenzene	MS	86.0	%REC
09072444	Ethylbenzene	MSD	87.0	%REC
09082527	Ethylbenzene	MSD	87.0	%REC
09092584	Ethylbenzene	MSD	87.0	%REC
09042240	Ethylbenzene	MSD	88.0	%REC
09072444	Ethylbenzene	MS	89.0	%REC
09102650	Ethylbenzene	MS	89.0	%REC
09102650	Ethylbenzene	MSD	89.0	%REC
09042219	Ethylbenzene	MSD	90.1	%REC
09112685	Ethylbenzene	MS	91.0	%REC
09112685	Ethylbenzene	MSD	91.0	%REC
09062399	Ethylbenzene	MS	92.0	%REC
09042253	Ethylbenzene	MSD	92.0	%REC
09042219	Ethylbenzene	MS	92.9	%REC
09042255	Ethylbenzene	MS	93.0	%REC
09052300	Ethylbenzene	MS	93.0	%REC
09052306	Ethylbenzene	MS	93.0	%REC
09062399	Ethylbenzene	MSD	93.0	%REC
09102668	Ethylbenzene	MS	94.0	%REC
09052306	Ethylbenzene	MSD	94.0	%REC
09082511	Ethylbenzene	MSD	94.0	%REC
09102658	Ethylbenzene	MSD	94.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09052341	Ethylbenzene	MSD	95.0	%REC
09112685	Ethylbenzene	MSD	95.0	%REC
09052332	Ethylbenzene	MSD	96.0	%REC
09052332	Ethylbenzene	MS	97.0	%REC
09092582	Ethylbenzene	MSD	97.0	%REC
09082511	Ethylbenzene	MS	98.0	%REC
09102645	Ethylbenzene	MS	98.0	%REC
09052300	Ethylbenzene	MSD	98.0	%REC
09102668	Ethylbenzene	MSD	98.0	%REC
09042253	Ethylbenzene	MS	99.0	%REC
09052281	Ethylbenzene	MSD	99.0	%REC
09102656	Ethylbenzene	MSD	99.0	%REC
09052281	Ethylbenzene	MS	100.0	%REC
09092582	Ethylbenzene	MS	100.0	%REC
09112685	Ethylbenzene	MS	100.0	%REC
09042255	Ethylbenzene	MSD	100.0	%REC
09112699	Ethylbenzene	MS	102.0	%REC
09092581	Ethylbenzene	MSD	102.0	%REC
09052341	Ethylbenzene	MS	103.0	%REC
09012069	Ethylbenzene	MSD	103.0	%REC
09082499	Ethylbenzene	MSD	103.0	%REC
09012069	Ethylbenzene	MS	104.0	%REC
09082499	Ethylbenzene	MS	104.0	%REC
09092584	Ethylbenzene	MS	104.0	%REC
09092581	Ethylbenzene	MS	105.0	%REC
09042233	Ethylbenzene	MSD	105.0	%REC
09072455	Ethylbenzene	MS	106.0	%REC
09082527	Ethylbenzene	MS	107.0	%REC
09072455	Ethylbenzene	MSD	107.0	%REC
09112699	Ethylbenzene	MSD	107.0	%REC
09112699	Ethylbenzene	MSD	107.0	%REC
09082527	Ethylbenzene	MSD	108.0	%REC
09032134	Ethylbenzene	MS	109.0	%REC
09102656	Ethylbenzene	MS	109.0	%REC
09102645	Ethylbenzene	MSD	109.0	%REC
09032134	Ethylbenzene	MSD	111.0	%REC
09022131	Ethylbenzene	MS	115.0	%REC
09062383	Ethylbenzene	MS	115.0	%REC
09042233	Ethylbenzene	MS	117.0	%REC
09112699	Ethylbenzene	MS	117.0	%REC
09022131	Ethylbenzene	MSD	117.0	%REC
09062383	Ethylbenzene	MSD	119.0	%REC
09012069	Hardness as CaCO3	MS	94.7	%REC
09082520	Hardness as CaCO3	MS	98.0	%REC
10012800	Hardness as CaCO3	MS	98.5	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09072445	Hardness as CaCO3	MS	99.2	%REC
09022129	Hardness as CaCO3	MS	100.0	%REC
09042245	Hardness as CaCO3	MS	100.0	%REC
09042248	Hardness as CaCO3	MS	100.0	%REC
09042254	Hardness as CaCO3	MS	100.0	%REC
09062386	Hardness as CaCO3	MS	100.0	%REC
09022116	Hardness as CaCO3	MS	101.0	%REC
09042221	Hardness as CaCO3	MS	101.0	%REC
09052297	Hardness as CaCO3	MS	101.0	%REC
09052315	Hardness as CaCO3	MS	101.0	%REC
09052339	Hardness as CaCO3	MS	101.0	%REC
09102672	Hardness as CaCO3	MS	101.0	%REC
09032157	Hardness as CaCO3	MS	102.0	%REC
09032175	Hardness as CaCO3	MS	103.0	%REC
09032186	Hardness as CaCO3	MS	103.0	%REC
09012069	Hexachlorobutadiene	MSD	96.3	%REC
09012069	Hexachlorobutadiene	MS	97.3	%REC
09042219	Hexachlorobutadiene	MSD	97.4	%REC
09042219	Hexachlorobutadiene	MS	100.0	%REC
09032195	Lead	MS	91.0	%REC
09122754	Lead	MSD	91.0	%REC
09092622	Lead	MS	91.4	%REC
09122754	Lead	MS	92.0	%REC
09042219	Lead	MS	92.2	%REC
09032134	Lead	MS	93.0	%REC
09072444	Lead	MS	93.0	%REC
09102658	Lead	MS	93.0	%REC
09112685	Lead	MS	93.0	%REC
09112699	Lead	MS	93.0	%REC
09032134	Lead	MSD	93.0	%REC
09032195	Lead	MSD	93.0	%REC
09032195	Lead	MSD	93.0	%REC
09042233	Lead	MSD	93.0	%REC
09112685	Lead	MSD	93.0	%REC
09112699	Lead	MSD	93.0	%REC
09102658	Lead	MSD	94.0	%REC
09052279	Lead	MS	94.6	%REC
09122742	Lead	MS	94.9	%REC
09042221	Lead	MS	95.0	%REC
09042233	Lead	MS	95.0	%REC
09052306	Lead	MS	95.0	%REC
09022120	Lead	MSD	95.0	%REC
09052306	Lead	MSD	95.0	%REC
09072444	Lead	MSD	95.0	%REC
09092581	Lead	MSD	95.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09022120	Lead	MS	96.0	%REC
09032195	Lead	MS	96.0	%REC
09092581	Lead	MS	96.0	%REC
09092584	Lead	MS	96.0	%REC
09092584	Lead	MSD	97.0	%REC
09052342	Lead	MS	97.1	%REC
09042254	Lead	MS	97.3	%REC
09012069	Lead	MS	97.7	%REC
09082527	Lead	MS	98.0	%REC
09082511	Lead	MSD	98.0	%REC
09082511	Lead	MS	99.0	%REC
09082527	Lead	MSD	99.0	%REC
09032144	Lead	MS	100.0	%REC
09072455	Lead	MSD	101.0	%REC
09122742	Lead	MS	102.0	%REC
09042248	Lead	MS	103.0	%REC
09072455	Lead	MS	103.0	%REC
09112718	Lead	MS	104.0	%REC
10012825	Lead	MS	104.0	%REC
09112718	Lead	MSD	106.0	%REC
09032134	Mercury	MSD	5.8	%REC
09032134	Mercury	MS	9.1	%REC
09082527	Mercury	MSD	28.0	%REC
09042255	Mercury	MSD	43.0	%REC
09122754	Mercury	MS	48.0	%REC
09042255	Mercury	MS	54.0	%REC
09122754	Mercury	MSD	63.0	%REC
09082527	Mercury	MS	67.0	%REC
09102658	Mercury	MS	72.0	%REC
09072444	Mercury	MS	76.0	%REC
09072444	Mercury	MSD	77.0	%REC
09092581	Mercury	MSD	79.0	%REC
09102658	Mercury	MSD	79.0	%REC
09022120	Mercury	MSD	81.0	%REC
09032195	Mercury	MS	82.0	%REC
09032195	Mercury	MSD	83.0	%REC
09112685	Mercury	MS	84.0	%REC
09092581	Mercury	MS	89.0	%REC
09072455	Mercury	MS	90.0	%REC
09072455	Mercury	MSD	91.0	%REC
09112685	Mercury	MSD	94.0	%REC
09052342	Mercury	MS	94.2	%REC
09092584	Mercury	MSD	95.0	%REC
09092584	Mercury	MS	96.0	%REC
09032195	Mercury	MSD	98.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09042248	Mercury	MS	98.8	%REC
09032144	Mercury	MS	98.9	%REC
09082511	Mercury	MSD	99.0	%REC
09042219	Mercury	MS	99.2	%REC
09012069	Mercury	MS	99.9	%REC
09022120	Mercury	MS	100.0	%REC
09082511	Mercury	MS	100.0	%REC
09112699	Mercury	MSD	100.0	%REC
09032195	Mercury	MS	103.0	%REC
09052306	Mercury	MS	103.0	%REC
09122742	Mercury	MS	104.0	%REC
09042254	Mercury	MS	106.0	%REC
09112699	Mercury	MS	106.0	%REC
09052306	Mercury	MSD	106.0	%REC
09052279	Mercury	MS	107.0	%REC
09122742	Mercury	MS	107.0	%REC
10012825	Mercury	MS	107.0	%REC
09042221	Mercury	MS	111.0	%REC
09092622	Mercury	MS	122.0	%REC
09112699	Methylene chloride	MS	78.0	%REC
09112685	Methylene chloride	MSD	78.0	%REC
09112685	Methylene chloride	MS	79.0	%REC
09102650	Methylene chloride	MS	80.0	%REC
09112699	Methylene chloride	MS	80.0	%REC
09112699	Methylene chloride	MSD	80.0	%REC
09102650	Methylene chloride	MSD	81.0	%REC
09112699	Methylene chloride	MSD	81.0	%REC
09052306	Methylene chloride	MS	82.0	%REC
09042240	Methylene chloride	MSD	82.0	%REC
09112685	Methylene chloride	MSD	82.0	%REC
09042240	Methylene chloride	MS	83.0	%REC
09112685	Methylene chloride	MS	83.0	%REC
09052306	Methylene chloride	MSD	84.0	%REC
09042233	Methylene chloride	MSD	86.0	%REC
09112718	Methylene chloride	MS	87.0	%REC
09052281	Methylene chloride	MSD	87.0	%REC
09112718	Methylene chloride	MSD	87.0	%REC
09082527	Methylene chloride	MS	88.0	%REC
09042253	Methylene chloride	MSD	88.0	%REC
09092581	Methylene chloride	MS	90.0	%REC
09082527	Methylene chloride	MSD	90.0	%REC
09052300	Methylene chloride	MS	91.0	%REC
09072455	Methylene chloride	MS	91.0	%REC
09072444	Methylene chloride	MSD	91.0	%REC
09052281	Methylene chloride	MS	92.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09092582	Methylene chloride	MS	93.0	%REC
09052300	Methylene chloride	MSD	93.0	%REC
09052341	Methylene chloride	MSD	93.0	%REC
09042219	Methylene chloride	MSD	93.1	%REC
09092581	Methylene chloride	MSD	94.0	%REC
09042233	Methylene chloride	MS	95.0	%REC
09102645	Methylene chloride	MS	95.0	%REC
09062399	Methylene chloride	MS	96.0	%REC
09072444	Methylene chloride	MS	96.0	%REC
09092582	Methylene chloride	MSD	96.0	%REC
09042219	Methylene chloride	MS	96.3	%REC
09052341	Methylene chloride	MS	97.0	%REC
09072455	Methylene chloride	MSD	97.0	%REC
09052332	Methylene chloride	MSD	98.0	%REC
09042253	Methylene chloride	MS	99.0	%REC
09082527	Methylene chloride	MS	99.0	%REC
09062399	Methylene chloride	MSD	103.0	%REC
09102645	Methylene chloride	MSD	103.0	%REC
09052332	Methylene chloride	MS	104.0	%REC
09082499	Methylene chloride	MS	104.0	%REC
09082511	Methylene chloride	MS	104.0	%REC
09082527	Methylene chloride	MSD	104.0	%REC
09102656	Methylene chloride	MSD	104.0	%REC
09102668	Methylene chloride	MS	107.0	%REC
09102658	Methylene chloride	MS	108.0	%REC
09082499	Methylene chloride	MSD	108.0	%REC
09102668	Methylene chloride	MSD	108.0	%REC
09102656	Methylene chloride	MS	109.0	%REC
09032134	Methylene chloride	MS	110.0	%REC
09012069	Methylene chloride	MSD	110.0	%REC
09082511	Methylene chloride	MSD	110.0	%REC
09012069	Methylene chloride	MS	111.0	%REC
09092584	Methylene chloride	MSD	111.0	%REC
09062383	Methylene chloride	MS	113.0	%REC
09032134	Methylene chloride	MSD	113.0	%REC
09102658	Methylene chloride	MSD	113.0	%REC
09042255	Methylene chloride	MS	114.0	%REC
09022131	Methylene chloride	MS	116.0	%REC
09062383	Methylene chloride	MSD	117.0	%REC
09022131	Methylene chloride	MSD	118.0	%REC
09042255	Methylene chloride	MSD	118.0	%REC
09092584	Methylene chloride	MS	128.0	%REC
09012069	Naphthalene	MS	93.0	%REC
09012069	Naphthalene	MSD	93.5	%REC
09042219	Naphthalene	MSD	107.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09042219	Naphthalene	MS	117.0	%REC
09042219	Nickel	MS	90.7	%REC
09042221	Nickel	MS	93.0	%REC
09052306	Nickel	MS	93.0	%REC
09112699	Nickel	MS	93.0	%REC
09052306	Nickel	MSD	93.0	%REC
09112699	Nickel	MSD	93.0	%REC
09042233	Nickel	MSD	94.0	%REC
09122742	Nickel	MS	94.2	%REC
09052279	Nickel	MS	94.8	%REC
09042233	Nickel	MS	95.0	%REC
09072444	Nickel	MS	95.0	%REC
09092581	Nickel	MS	95.0	%REC
09022120	Nickel	MSD	95.0	%REC
09082511	Nickel	MSD	95.0	%REC
09092581	Nickel	MSD	95.0	%REC
09032144	Nickel	MS	95.4	%REC
09012069	Nickel	MS	95.6	%REC
09022120	Nickel	MS	96.0	%REC
09032134	Nickel	MS	96.0	%REC
09102658	Nickel	MS	96.0	%REC
09112685	Nickel	MS	96.0	%REC
09072444	Nickel	MSD	96.0	%REC
09102658	Nickel	MSD	96.0	%REC
09112685	Nickel	MSD	96.0	%REC
09052342	Nickel	MS	96.1	%REC
09082511	Nickel	MS	97.0	%REC
09032134	Nickel	MSD	97.0	%REC
09092622	Nickel	MS	97.2	%REC
09042254	Nickel	MS	97.6	%REC
09082527	Nickel	MS	99.0	%REC
09082527	Nickel	MSD	99.0	%REC
09122742	Nickel	MS	100.0	%REC
10012825	Nickel	MS	101.0	%REC
09042248	Nickel	MS	104.0	%REC
09012070	Nitrite	MS	121.0	%REC
09012070	Nitrite	MSD	122.0	%REC
09052286	NO2+NO3 as N	MS	93.2	%REC
09052278	NO2+NO3 as N	MS	93.6	%REC
09052335	NO2+NO3 as N	MS	94.8	%REC
09052339	NO2+NO3 as N	MS	94.8	%REC
09062376	NO2+NO3 as N	MS	95.5	%REC
09062357	NO2+NO3 as N	MS	96.9	%REC
09042246	NO2+NO3 as N	MS	98.6	%REC
09062376	NO2+NO3 as N	MS	98.8	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09112725	NO2+NO3 as N	MS	99.4	%REC
09062370	NO2+NO3 as N	MS	101.0	%REC
09052315	NO2+NO3 as N	MS	103.0	%REC
09052281	NO3+NO2 AS N	MS	84.0	%REC
09112685	NO3+NO2 AS N	MS	85.0	%REC
09052281	NO3+NO2 AS N	MSD	85.0	%REC
09112685	NO3+NO2 AS N	MSD	86.0	%REC
09082552	NO3+NO2 AS N	MS	87.0	%REC
09102650	NO3+NO2 AS N	MSD	89.0	%REC
09082552	NO3+NO2 AS N	MSD	91.0	%REC
09062383	NO3+NO2 AS N	MSD	92.0	%REC
09102650	NO3+NO2 AS N	MS	93.0	%REC
09052332	NO3+NO2 AS N	MSD	93.0	%REC
09052332	NO3+NO2 AS N	MS	94.0	%REC
09062383	NO3+NO2 AS N	MS	95.0	%REC
09122768	NO3+NO2 AS N	MS	95.0	%REC
09122768	NO3+NO2 AS N	MSD	95.0	%REC
09012058	NO3+NO2 AS N	MS	96.0	%REC
09042240	NO3+NO2 AS N	MS	97.0	%REC
09112699	NO3+NO2 AS N	MS	97.0	%REC
09122778	NO3+NO2 AS N	MSD	97.0	%REC
09042240	NO3+NO2 AS N	MS	98.0	%REC
09052306	NO3+NO2 AS N	MS	98.0	%REC
09122778	NO3+NO2 AS N	MS	98.0	%REC
09012058	NO3+NO2 AS N	MSD	98.0	%REC
09102645	NO3+NO2 AS N	MS	99.0	%REC
09102650	NO3+NO2 AS N	MS	99.0	%REC
09042240	NO3+NO2 AS N	MSD	99.0	%REC
09052306	NO3+NO2 AS N	MSD	99.0	%REC
09042233	NO3+NO2 AS N	MS	100.0	%REC
09052293	NO3+NO2 AS N	MS	100.0	%REC
09062404	NO3+NO2 AS N	MS	100.0	%REC
09042240	NO3+NO2 AS N	MSD	100.0	%REC
09052293	NO3+NO2 AS N	MSD	100.0	%REC
09062399	NO3+NO2 AS N	MSD	100.0	%REC
09062404	NO3+NO2 AS N	MSD	100.0	%REC
09112699	NO3+NO2 AS N	MSD	100.0	%REC
09062399	NO3+NO2 AS N	MS	101.0	%REC
09042233	NO3+NO2 AS N	MSD	101.0	%REC
09052341	NO3+NO2 AS N	MSD	101.0	%REC
09052341	NO3+NO2 AS N	MS	102.0	%REC
09122746	NO3+NO2 AS N	MS	102.0	%REC
09122746	NO3+NO2 AS N	MSD	102.0	%REC
09092612	NO3+NO2 AS N	MS	103.0	%REC
09092612	NO3+NO2 AS N	MSD	105.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09102645	NO3+NO2 AS N	MSD	106.0	%REC
09102650	NO3+NO2 AS N	MSD	106.0	%REC
09032195	Selenium	MS	89.0	%REC
09032195	Selenium	MSD	91.0	%REC
09122754	Selenium	MSD	91.0	%REC
09122754	Selenium	MS	92.0	%REC
09032195	Selenium	MSD	92.0	%REC
09032195	Selenium	MS	94.0	%REC
09112685	Selenium	MS	94.0	%REC
09112685	Selenium	MSD	94.0	%REC
09052306	Selenium	MS	95.0	%REC
09112699	Selenium	MS	95.0	%REC
09052306	Selenium	MSD	95.0	%REC
09092581	Selenium	MSD	95.0	%REC
09112699	Selenium	MSD	95.0	%REC
09042219	Selenium	MS	95.9	%REC
09052300	Selenium	MS	96.0	%REC
09092612	Selenium	MS	96.0	%REC
09042233	Selenium	MSD	96.0	%REC
09042254	Selenium	MS	96.2	%REC
09072444	Selenium	MS	97.0	%REC
09092581	Selenium	MS	97.0	%REC
09022120	Selenium	MSD	97.0	%REC
09032144	Selenium	MS	97.2	%REC
09092622	Selenium	MS	97.9	%REC
09022120	Selenium	MS	98.0	%REC
09022131	Selenium	MS	98.0	%REC
09042233	Selenium	MS	98.0	%REC
09082527	Selenium	MS	98.0	%REC
09052279	Selenium	MS	98.4	%REC
09092584	Selenium	MS	99.0	%REC
09102658	Selenium	MS	99.0	%REC
09072444	Selenium	MSD	99.0	%REC
09072455	Selenium	MSD	99.0	%REC
09082511	Selenium	MSD	99.0	%REC
09052342	Selenium	MS	99.3	%REC
09032134	Selenium	MS	100.0	%REC
09032134	Selenium	MSD	100.0	%REC
09092584	Selenium	MSD	100.0	%REC
09102658	Selenium	MSD	100.0	%REC
09082511	Selenium	MS	101.0	%REC
09122742	Selenium	MS	101.0	%REC
09082527	Selenium	MSD	101.0	%REC
09042221	Selenium	MS	102.0	%REC
09072455	Selenium	MS	102.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09122742	Selenium	MS	103.0	%REC
10012825	Selenium	MS	103.0	%REC
09022131	Selenium	MSD	103.0	%REC
09022131	Selenium	MS	104.0	%REC
09042248	Selenium	MS	104.0	%REC
09112718	Selenium	MS	104.0	%REC
09012069	Selenium	MS	106.0	%REC
09112718	Selenium	MSD	106.0	%REC
09122746	Selenium	MS	196.0	%REC
09022131	Silver	MS	38.6	%REC
09122754	Silver	MSD	70.0	%REC
09122754	Silver	MS	72.0	%REC
09052300	Silver	MS	86.0	%REC
09042233	Silver	MSD	87.0	%REC
09102651	Silver	MS	88.4	%REC
09022131	Silver	MSD	89.0	%REC
09042233	Silver	MS	90.0	%REC
09022131	Silver	MS	91.0	%REC
09032195	Silver	MS	91.0	%REC
09042245	Silver	MS	92.0	%REC
09032195	Silver	MSD	92.0	%REC
09032195	Silver	MSD	92.0	%REC
09032195	Silver	MS	94.0	%REC
09092622	Silver	MS	94.1	%REC
09032186	Silver	MS	94.6	%REC
09052306	Silver	MS	95.0	%REC
09092622	Silver	MS	96.2	%REC
09042221	Silver	MS	96.7	%REC
09052297	Silver	MS	96.7	%REC
09062386	Silver	MS	96.8	%REC
09052306	Silver	MSD	97.0	%REC
09102658	Silver	MSD	97.0	%REC
09012069	Silver	MS	97.6	%REC
09052339	Silver	MS	97.6	%REC
09092584	Silver	MS	98.0	%REC
09092581	Silver	MSD	98.0	%REC
09032175	Silver	MS	98.1	%REC
09122742	Silver	MS	98.4	%REC
09052279	Silver	MS	98.5	%REC
10012800	Silver	MS	98.5	%REC
09052279	Silver	MS	98.8	%REC
09052315	Silver	MS	99.0	%REC
09092581	Silver	MS	99.0	%REC
09102658	Silver	MS	99.0	%REC
09092584	Silver	MSD	99.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09062401	Silver	MS	99.4	%REC
09022129	Silver	MS	99.6	%REC
09042219	Silver	MS	99.7	%REC
09082520	Silver	MS	99.7	%REC
09122742	Silver	MS	99.8	%REC
09072445	Silver	MS	100.0	%REC
09112699	Silver	MS	100.0	%REC
09022120	Silver	MSD	100.0	%REC
09112699	Silver	MSD	100.0	%REC
09022120	Silver	MS	101.0	%REC
09072455	Silver	MS	101.0	%REC
09072455	Silver	MSD	101.0	%REC
09042221	Silver	MS	102.0	%REC
09052342	Silver	MS	102.0	%REC
09072444	Silver	MS	102.0	%REC
09082511	Silver	MS	102.0	%REC
09122742	Silver	MS	102.0	%REC
09082511	Silver	MSD	102.0	%REC
09032144	Silver	MS	103.0	%REC
09102672	Silver	MS	103.0	%REC
09112686	Silver	MS	103.0	%REC
09112718	Silver	MS	103.0	%REC
09072444	Silver	MSD	103.0	%REC
09032157	Silver	MS	104.0	%REC
10012825	Silver	MS	104.0	%REC
09012069	Silver	MS	105.0	%REC
09042248	Silver	MS	105.0	%REC
09042254	Silver	MS	105.0	%REC
09082527	Silver	MS	105.0	%REC
09112685	Silver	MS	105.0	%REC
09112718	Silver	MSD	105.0	%REC
09022116	Silver	MS	106.0	%REC
09042248	Silver	MS	106.0	%REC
09082527	Silver	MSD	106.0	%REC
09112685	Silver	MSD	106.0	%REC
09042254	Silver	MS	109.0	%REC
09032134	Silver	MS	113.0	%REC
09032134	Silver	MSD	113.0	%REC
09042219	Styrene	MSD	94.4	%REC
09042219	Styrene	MS	98.1	%REC
09012069	Styrene	MSD	105.0	%REC
09012069	Styrene	MS	106.0	%REC
09042253	Tetrachloroethene	MSD	40.0	%REC
09112718	Tetrachloroethene	MSD	68.0	%REC
09052281	Tetrachloroethene	MSD	83.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09072444	Tetrachloroethene	MSD	83.0	%REC
09102650	Tetrachloroethene	MSD	83.0	%REC
09072444	Tetrachloroethene	MS	84.0	%REC
09042240	Tetrachloroethene	MS	85.0	%REC
09102650	Tetrachloroethene	MS	85.0	%REC
09042240	Tetrachloroethene	MSD	85.0	%REC
09052341	Tetrachloroethene	MSD	86.0	%REC
09052281	Tetrachloroethene	MS	87.0	%REC
09082527	Tetrachloroethene	MS	87.0	%REC
09112718	Tetrachloroethene	MS	88.0	%REC
09082527	Tetrachloroethene	MSD	88.0	%REC
09042253	Tetrachloroethene	MS	89.0	%REC
09052332	Tetrachloroethene	MS	89.0	%REC
09112685	Tetrachloroethene	MSD	90.0	%REC
09052306	Tetrachloroethene	MS	91.0	%REC
09052332	Tetrachloroethene	MSD	91.0	%REC
09112685	Tetrachloroethene	MSD	91.0	%REC
09052300	Tetrachloroethene	MS	92.0	%REC
09102658	Tetrachloroethene	MS	92.0	%REC
09102668	Tetrachloroethene	MS	92.0	%REC
09112685	Tetrachloroethene	MS	92.0	%REC
09052306	Tetrachloroethene	MSD	92.0	%REC
09062399	Tetrachloroethene	MS	93.0	%REC
09082527	Tetrachloroethene	MSD	93.0	%REC
09082527	Tetrachloroethene	MS	94.0	%REC
09062399	Tetrachloroethene	MSD	94.0	%REC
09082511	Tetrachloroethene	MSD	95.0	%REC
09052341	Tetrachloroethene	MS	96.0	%REC
09082511	Tetrachloroethene	MS	96.0	%REC
09112685	Tetrachloroethene	MS	96.0	%REC
09042233	Tetrachloroethene	MSD	96.0	%REC
09092582	Tetrachloroethene	MS	97.0	%REC
09102668	Tetrachloroethene	MSD	97.0	%REC
09112699	Tetrachloroethene	MSD	97.0	%REC
09092582	Tetrachloroethene	MSD	98.0	%REC
09052300	Tetrachloroethene	MSD	100.0	%REC
09032134	Tetrachloroethene	MS	101.0	%REC
09042255	Tetrachloroethene	MS	101.0	%REC
09092581	Tetrachloroethene	MSD	101.0	%REC
09082499	Tetrachloroethene	MS	102.0	%REC
09082499	Tetrachloroethene	MSD	102.0	%REC
09102658	Tetrachloroethene	MSD	102.0	%REC
09032134	Tetrachloroethene	MSD	103.0	%REC
09022131	Tetrachloroethene	MS	105.0	%REC
09072455	Tetrachloroethene	MS	106.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09092581	Tetrachloroethene	MS	106.0	%REC
09102645	Tetrachloroethene	MS	106.0	%REC
09022131	Tetrachloroethene	MSD	106.0	%REC
09042233	Tetrachloroethene	MS	107.0	%REC
09042255	Tetrachloroethene	MSD	108.0	%REC
09072455	Tetrachloroethene	MSD	109.0	%REC
09102656	Tetrachloroethene	MSD	109.0	%REC
09112699	Tetrachloroethene	MS	110.0	%REC
09102656	Tetrachloroethene	MS	112.0	%REC
09102645	Tetrachloroethene	MSD	113.0	%REC
09062383	Tetrachloroethene	MS	115.0	%REC
09112699	Tetrachloroethene	MS	115.0	%REC
09112699	Tetrachloroethene	MSD	116.0	%REC
09062383	Tetrachloroethene	MSD	118.0	%REC
09092584	Tetrachloroethene	MSD	125.0	%REC
09092584	Tetrachloroethene	MS	167.0	%REC
09042219	Tetrachloroethylene	MSD	93.5	%REC
09042219	Tetrachloroethylene	MS	95.9	%REC
09012069	Tetrachloroethylene	MSD	103.0	%REC
09012069	Tetrachloroethylene	MS	105.0	%REC
09102650	Toluene	MS	84.0	%REC
09102650	Toluene	MSD	85.0	%REC
09042240	Toluene	MSD	86.0	%REC
09042240	Toluene	MS	88.0	%REC
09082527	Toluene	MS	88.0	%REC
09112685	Toluene	MSD	88.0	%REC
09062399	Toluene	MS	89.0	%REC
09072444	Toluene	MSD	89.0	%REC
09112718	Toluene	MSD	89.0	%REC
09042219	Toluene	MSD	89.5	%REC
09112685	Toluene	MS	90.0	%REC
09042253	Toluene	MSD	90.0	%REC
09052281	Toluene	MSD	90.0	%REC
09052341	Toluene	MSD	90.0	%REC
09062399	Toluene	MSD	90.0	%REC
09082527	Toluene	MSD	90.0	%REC
09092584	Toluene	MSD	90.0	%REC
09072444	Toluene	MS	91.0	%REC
09042219	Toluene	MS	91.6	%REC
09052281	Toluene	MS	93.0	%REC
09052306	Toluene	MS	93.0	%REC
09052332	Toluene	MSD	93.0	%REC
09082511	Toluene	MSD	93.0	%REC
09052332	Toluene	MS	94.0	%REC
09082511	Toluene	MS	94.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09052306	Toluene	MSD	94.0	%REC
09112699	Toluene	MS	95.0	%REC
09112685	Toluene	MSD	95.0	%REC
09042255	Toluene	MS	96.0	%REC
09052300	Toluene	MS	96.0	%REC
09102658	Toluene	MS	96.0	%REC
09042253	Toluene	MS	97.0	%REC
09102645	Toluene	MSD	97.0	%REC
09112699	Toluene	MSD	98.0	%REC
09112699	Toluene	MSD	99.0	%REC
09102668	Toluene	MS	100.0	%REC
09112685	Toluene	MS	100.0	%REC
09052341	Toluene	MS	101.0	%REC
09102645	Toluene	MS	101.0	%REC
09042233	Toluene	MSD	101.0	%REC
09102668	Toluene	MSD	101.0	%REC
09092584	Toluene	MS	102.0	%REC
09052300	Toluene	MSD	102.0	%REC
09042255	Toluene	MSD	103.0	%REC
09012069	Toluene	MSD	104.0	%REC
09012069	Toluene	MS	105.0	%REC
09072455	Toluene	MS	105.0	%REC
09082527	Toluene	MS	106.0	%REC
09102658	Toluene	MSD	106.0	%REC
09112699	Toluene	MS	107.0	%REC
09082527	Toluene	MSD	107.0	%REC
09112718	Toluene	MS	108.0	%REC
09072455	Toluene	MSD	108.0	%REC
09092582	Toluene	MSD	112.0	%REC
09042233	Toluene	MS	113.0	%REC
09092582	Toluene	MS	113.0	%REC
09102656	Toluene	MSD	113.0	%REC
09092581	Toluene	MSD	114.0	%REC
09032134	Toluene	MS	115.0	%REC
09082499	Toluene	MS	115.0	%REC
09082499	Toluene	MSD	115.0	%REC
09092581	Toluene	MS	117.0	%REC
09032134	Toluene	MSD	120.0	%REC
09102656	Toluene	MS	121.0	%REC
09022131	Toluene	MS	123.0	%REC
09022131	Toluene	MSD	124.0	%REC
09062383	Toluene	MS	125.0	%REC
09062383	Toluene	MSD	129.0	%REC
09042240	trans-1,2-Dichloroethene	MSD	73.0	%REC
09102658	trans-1,2-Dichloroethene	MS	76.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09042240	trans-1,2-Dichloroethene	MS	78.0	%REC
09112718	trans-1,2-Dichloroethene	MS	78.0	%REC
09042233	trans-1,2-Dichloroethene	MSD	79.0	%REC
09112685	trans-1,2-Dichloroethene	MS	81.0	%REC
09112685	trans-1,2-Dichloroethene	MSD	82.0	%REC
09112718	trans-1,2-Dichloroethene	MSD	83.0	%REC
09082527	trans-1,2-Dichloroethene	MS	84.0	%REC
09102658	trans-1,2-Dichloroethene	MSD	84.0	%REC
09052281	trans-1,2-Dichloroethene	MSD	85.0	%REC
09082527	trans-1,2-Dichloroethene	MSD	86.0	%REC
09102650	trans-1,2-Dichloroethene	MSD	86.0	%REC
09042233	trans-1,2-Dichloroethene	MS	87.0	%REC
09102650	trans-1,2-Dichloroethene	MS	88.0	%REC
09042253	trans-1,2-Dichloroethene	MSD	88.0	%REC
09052281	trans-1,2-Dichloroethene	MS	89.0	%REC
09072444	trans-1,2-Dichloroethene	MSD	90.0	%REC
09112685	trans-1,2-Dichloroethene	MSD	90.0	%REC
09112699	trans-1,2-Dichloroethene	MSD	91.0	%REC
09052300	trans-1,2-Dichloroethene	MS	93.0	%REC
09052306	trans-1,2-Dichloroethene	MS	93.0	%REC
09072444	trans-1,2-Dichloroethene	MS	94.0	%REC
09112685	trans-1,2-Dichloroethene	MS	94.0	%REC
09092582	trans-1,2-Dichloroethene	MSD	94.0	%REC
09102656	trans-1,2-Dichloroethene	MSD	94.0	%REC
09102645	trans-1,2-Dichloroethene	MS	95.0	%REC
09102656	trans-1,2-Dichloroethene	MS	95.0	%REC
09082511	trans-1,2-Dichloroethene	MSD	95.0	%REC
09042253	trans-1,2-Dichloroethene	MS	96.0	%REC
09082511	trans-1,2-Dichloroethene	MS	96.0	%REC
09092582	trans-1,2-Dichloroethene	MS	96.0	%REC
09102668	trans-1,2-Dichloroethene	MSD	96.0	%REC
09062399	trans-1,2-Dichloroethene	MS	97.0	%REC
09112699	trans-1,2-Dichloroethene	MS	98.0	%REC
09052306	trans-1,2-Dichloroethene	MSD	98.0	%REC
09092581	trans-1,2-Dichloroethene	MS	99.0	%REC
09102668	trans-1,2-Dichloroethene	MS	99.0	%REC
09052300	trans-1,2-Dichloroethene	MSD	99.0	%REC
09062399	trans-1,2-Dichloroethene	MSD	99.0	%REC
09092581	trans-1,2-Dichloroethene	MSD	99.0	%REC
09082527	trans-1,2-Dichloroethene	MS	100.0	%REC
09052341	trans-1,2-Dichloroethene	MSD	100.0	%REC
09072455	trans-1,2-Dichloroethene	MS	101.0	%REC
09112699	trans-1,2-Dichloroethene	MS	101.0	%REC
09052332	trans-1,2-Dichloroethene	MSD	101.0	%REC
09092584	trans-1,2-Dichloroethene	MSD	101.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09052341	trans-1,2-Dichloroethene	MS	102.0	%REC
09072455	trans-1,2-Dichloroethene	MSD	102.0	%REC
09052332	trans-1,2-Dichloroethene	MS	103.0	%REC
09082499	trans-1,2-Dichloroethene	MSD	103.0	%REC
09082527	trans-1,2-Dichloroethene	MSD	103.0	%REC
09042255	trans-1,2-Dichloroethene	MS	104.0	%REC
09082499	trans-1,2-Dichloroethene	MS	104.0	%REC
09112699	trans-1,2-Dichloroethene	MSD	104.0	%REC
09102645	trans-1,2-Dichloroethene	MSD	106.0	%REC
09062383	trans-1,2-Dichloroethene	MS	108.0	%REC
09062383	trans-1,2-Dichloroethene	MSD	108.0	%REC
09092584	trans-1,2-Dichloroethene	MS	110.0	%REC
09042255	trans-1,2-Dichloroethene	MSD	111.0	%REC
09032134	trans-1,2-Dichloroethene	MS	114.0	%REC
09032134	trans-1,2-Dichloroethene	MSD	118.0	%REC
09022131	trans-1,2-Dichloroethene	MS	130.0	%REC
09022131	trans-1,2-Dichloroethene	MSD	132.0	%REC
09042219	trans-1,2-Dichloroethylene	MSD	87.6	%REC
09042219	trans-1,2-Dichloroethylene	MS	90.9	%REC
09012069	trans-1,2-Dichloroethylene	MSD	102.0	%REC
09012069	trans-1,2-Dichloroethylene	MS	103.0	%REC
09042219	trans-1,3-Dichloropropylene	MSD	94.5	%REC
09042219	trans-1,3-Dichloropropylene	MS	102.0	%REC
09012069	trans-1,3-Dichloropropylene	MSD	107.0	%REC
09012069	trans-1,3-Dichloropropylene	MS	108.0	%REC
09042253	Trichloroethene	MSD	0.0	%REC
09042253	Trichloroethene	MS	71.0	%REC
09102658	Trichloroethene	MS	79.0	%REC
09082527	Trichloroethene	MS	80.0	%REC
09082527	Trichloroethene	MSD	84.0	%REC
09052306	Trichloroethene	MS	85.0	%REC
09112685	Trichloroethene	MS	85.0	%REC
09112685	Trichloroethene	MSD	85.0	%REC
09042240	Trichloroethene	MS	86.0	%REC
09042240	Trichloroethene	MSD	86.0	%REC
09052332	Trichloroethene	MS	87.0	%REC
09052306	Trichloroethene	MSD	87.0	%REC
09072444	Trichloroethene	MSD	87.0	%REC
09062399	Trichloroethene	MS	88.0	%REC
09052341	Trichloroethene	MSD	88.0	%REC
09112718	Trichloroethene	MS	89.0	%REC
09112685	Trichloroethene	MSD	89.0	%REC
09062399	Trichloroethene	MSD	90.0	%REC
09072444	Trichloroethene	MS	91.0	%REC
09102658	Trichloroethene	MSD	91.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09112718	Trichloroethene	MSD	91.0	%REC
09102645	Trichloroethene	MS	93.0	%REC
09112685	Trichloroethene	MS	93.0	%REC
09042233	Trichloroethene	MSD	93.0	%REC
09052281	Trichloroethene	MSD	93.0	%REC
09052300	Trichloroethene	MS	94.0	%REC
09082527	Trichloroethene	MS	95.0	%REC
09092581	Trichloroethene	MSD	95.0	%REC
09112699	Trichloroethene	MSD	95.0	%REC
09092582	Trichloroethene	MS	96.0	%REC
09052332	Trichloroethene	MSD	96.0	%REC
09102656	Trichloroethene	MSD	96.0	%REC
09042255	Trichloroethene	MS	97.0	%REC
09052281	Trichloroethene	MS	98.0	%REC
09082499	Trichloroethene	MSD	98.0	%REC
09082527	Trichloroethene	MSD	98.0	%REC
09102650	Trichloroethene	MSD	98.0	%REC
09112699	Trichloroethene	MSD	98.0	%REC
09032134	Trichloroethene	MS	99.0	%REC
09052341	Trichloroethene	MS	99.0	%REC
09082511	Trichloroethene	MS	99.0	%REC
09102650	Trichloroethene	MS	99.0	%REC
09102656	Trichloroethene	MS	99.0	%REC
09052300	Trichloroethene	MSD	99.0	%REC
09092581	Trichloroethene	MS	101.0	%REC
09092582	Trichloroethene	MSD	101.0	%REC
09082499	Trichloroethene	MS	102.0	%REC
09102668	Trichloroethene	MS	102.0	%REC
09082511	Trichloroethene	MSD	102.0	%REC
09042233	Trichloroethene	MS	103.0	%REC
09072455	Trichloroethene	MS	103.0	%REC
09042255	Trichloroethene	MSD	103.0	%REC
09092584	Trichloroethene	MSD	103.0	%REC
09112699	Trichloroethene	MS	104.0	%REC
09032134	Trichloroethene	MSD	104.0	%REC
09102645	Trichloroethene	MSD	105.0	%REC
09102668	Trichloroethene	MSD	105.0	%REC
09112699	Trichloroethene	MS	106.0	%REC
09072455	Trichloroethene	MSD	109.0	%REC
09022131	Trichloroethene	MS	114.0	%REC
09022131	Trichloroethene	MSD	114.0	%REC
09062383	Trichloroethene	MS	118.0	%REC
09062383	Trichloroethene	MSD	118.0	%REC
09092584	Trichloroethene	MS	128.0	%REC
09042219	Trichloroethylene	MSD	94.1	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09042219	Trichloroethylene	MS	97.4	%REC
09012069	Trichloroethylene	MSD	108.0	%REC
09012069	Trichloroethylene	MS	109.0	%REC
09062399	Uranium	MS	85.8	%REC
09052281	Uranium	MS	87.2	%REC
09052341	Uranium	MS	88.8	%REC
09102668	Uranium	MS	89.1	%REC
09042240	Uranium	MS	91.3	%REC
09052293	Uranium	MS	91.4	%REC
09042253	Uranium	MS	92.4	%REC
09042219	Uranium	MS	92.8	%REC
09042245	Uranium	MS	92.9	%REC
09042246	Uranium	MS	92.9	%REC
09062383	Uranium	MS	93.0	%REC
09122746	Uranium	MS	93.0	%REC
09112685	Uranium	MS	93.2	%REC
09082543	Uranium	MS	93.3	%REC
09122742	Uranium	MS	93.4	%REC
09042254	Uranium	MS	93.5	%REC
09082511	Uranium	MS	93.7	%REC
09082517	Uranium	MS	93.7	%REC
09102645	Uranium	MS	94.5	%REC
09102650	Uranium	MS	94.5	%REC
09072444	Uranium	MS	95.1	%REC
09012058	Uranium	MS	95.2	%REC
09112699	Uranium	MS	95.5	%REC
10012800	Uranium	MS	95.5	%REC
09052279	Uranium	MS	96.5	%REC
09042221	Uranium	MS	96.7	%REC
09032144	Uranium	MS	97.0	%REC
09092612	Uranium	MS	97.0	%REC
09122742	Uranium	MS	97.8	%REC
09092622	Uranium	MS	98.0	%REC
09092581	Uranium	MSD	98.0	%REC
09052306	Uranium	MS	98.1	%REC
09052332	Uranium	MS	98.3	%REC
09052342	Uranium	MS	98.4	%REC
09062386	Uranium	MS	98.5	%REC
09012069	Uranium	MS	98.6	%REC
09052339	Uranium	MS	98.8	%REC
09052278	Uranium	MS	98.9	%REC
09052279	Uranium	MS	99.1	%REC
09052297	Uranium	MS	99.7	%REC
09082543	Uranium	MS	101.0	%REC
09092581	Uranium	MS	101.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09122742	Uranium	MS	101.0	%REC
10012825	Uranium	MS	101.0	%REC
09082511	Uranium	MSD	101.0	%REC
09062404	Uranium	MS	102.0	%REC
09072444	Uranium	MS	102.0	%REC
09112685	Uranium	MS	102.0	%REC
09082517	Uranium	MS	103.0	%REC
09082552	Uranium	MS	103.0	%REC
09112699	Uranium	MS	103.0	%REC
10012825	Uranium	MS	103.0	%REC
09072444	Uranium	MSD	103.0	%REC
09082527	Uranium	MSD	103.0	%REC
09042248	Uranium	MS	104.0	%REC
09052286	Uranium	MS	104.0	%REC
09052306	Uranium	MS	104.0	%REC
09072444	Uranium	MS	104.0	%REC
09072470	Uranium	MS	104.0	%REC
09082511	Uranium	MS	104.0	%REC
09082520	Uranium	MS	104.0	%REC
09112711	Uranium	MS	104.0	%REC
09052306	Uranium	MSD	104.0	%REC
09072470	Uranium	MSD	104.0	%REC
09082543	Uranium	MSD	104.0	%REC
09052315	Uranium	MS	105.0	%REC
09052342	Uranium	MS	105.0	%REC
09062357	Uranium	MS	105.0	%REC
09062370	Uranium	MS	105.0	%REC
09062401	Uranium	MS	105.0	%REC
09092622	Uranium	MS	105.0	%REC
09022120	Uranium	MSD	105.0	%REC
09042233	Uranium	MSD	105.0	%REC
09112699	Uranium	MSD	105.0	%REC
09042233	Uranium	MS	106.0	%REC
09062376	Uranium	MS	106.0	%REC
09072444	Uranium	MSD	106.0	%REC
09022120	Uranium	MS	107.0	%REC
09082493	Uranium	MS	107.0	%REC
09092581	Uranium	MS	107.0	%REC
09042254	Uranium	MS	108.0	%REC
09082517	Uranium	MSD	108.0	%REC
09112685	Uranium	MSD	108.0	%REC
09062418	Uranium	MS	109.0	%REC
09082527	Uranium	MS	109.0	%REC
09112725	Uranium	MS	109.0	%REC
09032134	Uranium	MSD	109.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09032134	Uranium	MS	110.0	%REC
09102658	Uranium	MS	110.0	%REC
09102658	Uranium	MSD	110.0	%REC
09052335	Uranium	MS	111.0	%REC
09072445	Uranium	MS	111.0	%REC
09042248	Uranium	MS	112.0	%REC
09102651	Uranium	MS	112.0	%REC
09042233	Uranium	MS	113.0	%REC
09122767	Uranium	MS	113.0	%REC
09102672	Uranium	MS	115.0	%REC
09112686	Uranium	MS	115.0	%REC
09042219	Vinyl chloride	MSD	95.5	%REC
09042219	Vinyl chloride	MS	97.7	%REC
09012069	Vinyl chloride	MSD	123.0	%REC
09012069	Vinyl chloride	MS	126.0	%REC
09042219	Xylenes (total)	MSD	92.0	%REC
09042219	Xylenes (total)	MS	95.6	%REC
09012069	Xylenes (total)	MSD	104.0	%REC
09012069	Xylenes (total)	MS	105.0	%REC
09082511	Zinc	MS	91.0	%REC
09032134	Zinc	MS	92.0	%REC
09032134	Zinc	MSD	92.0	%REC
09042233	Zinc	MSD	92.0	%REC
09082511	Zinc	MSD	92.0	%REC
09042233	Zinc	MS	94.0	%REC
09102658	Zinc	MS	94.0	%REC
09092581	Zinc	MSD	94.0	%REC
09042219	Zinc	MS	94.1	%REC
09042254	Zinc	MS	94.6	%REC
09022120	Zinc	MS	95.0	%REC
09092581	Zinc	MS	95.0	%REC
09112699	Zinc	MS	95.0	%REC
09102658	Zinc	MSD	95.0	%REC
09072444	Zinc	MS	96.0	%REC
09022120	Zinc	MSD	96.0	%REC
09112699	Zinc	MSD	96.0	%REC
09052279	Zinc	MS	96.1	%REC
09122742	Zinc	MS	96.5	%REC
09032144	Zinc	MS	97.1	%REC
09042221	Zinc	MS	97.2	%REC
09052342	Zinc	MS	97.2	%REC
09092622	Zinc	MS	97.8	%REC
09112685	Zinc	MS	98.0	%REC
09072444	Zinc	MSD	98.0	%REC
09112685	Zinc	MSD	98.0	%REC

Table B−3 (continued). Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Recoveries

RIN	Analyte	Result Type	Result	Unit
09082527	Zinc	MS	99.0	%REC
09122742	Zinc	MS	99.7	%REC
09052306	Zinc	MS	100.0	%REC
10012825	Zinc	MS	100.0	%REC
09082527	Zinc	MSD	100.0	%REC
09012069	Zinc	MS	101.0	%REC
09052306	Zinc	MSD	101.0	%REC
09042248	Zinc	MS	103.0	%REC

Table B–4. Radionuclide Relative Bias Values for Lab Control Sample (LCS) Data

RESULT_TYPE_CODE	RIN	Analyte	Relative_Bias
LCS	09062386	Americium-241	-0.207
LCS	09062401	Americium-241	-0.207
LCS	09062418	Americium-241	-0.207
LCS	09062386	Americium-241	-0.163
LCS	09062401	Americium-241	-0.163
LCS	09062418	Americium-241	-0.163
LCS	09052342	Americium-241	-0.162
LCS	09062357	Americium-241	-0.162
LCS	09062370	Americium-241	-0.162
LCS	09062376	Americium-241	-0.162
LCS	09052315	Americium-241	-0.159
LCS	09052335	Americium-241	-0.159
LCS	09052339	Americium-241	-0.159
LCS	09082520	Americium-241	-0.151
LCS	09082493	Plutonium-239/240	-0.145
LCS	09052342	Americium-241	-0.141
LCS	09062357	Americium-241	-0.141
LCS	09062370	Americium-241	-0.141
LCS	09062376	Americium-241	-0.141
LCS	09022129	Plutonium-239/240	-0.122
LCS	09052280	Americium-241	-0.106
LCS	09052286	Americium-241	-0.106
LCS	09032157	Uranium-238	-0.104
LCS	09032175	Uranium-238	-0.104
LCS	09102646	Americium-241	-0.101
LCS	09102651	Americium-241	-0.101
LCS	09102672	Americium-241	-0.101
LCS	09112686	Americium-241	-0.101
LCS	09122742	Americium-241	-0.097
LCS	09082520	Plutonium-239/240	-0.096
LCS	09042245	Americium-241	-0.095
LCS	09042246	Americium-241	-0.095
LCS	09042248	Americium-241	-0.095
LCS	09072445	Americium-241	-0.092
LCS	09012069	Plutonium-239/240	-0.091
LCS	09052280	Americium-241	-0.091
LCS	09052286	Americium-241	-0.091
LCS	09082493	Americium-241	-0.091
LCS	09062386	Plutonium-239/240	-0.087
LCS	09062401	Plutonium-239/240	-0.087
LCS	09062418	Plutonium-239/240	-0.087
LCS	09122742	Plutonium-239/240	-0.084
LCS	09052297	Americium-241	-0.083
LCS	09112711	Americium-241	-0.081

Table B−4 (continued). Radionuclide Relative Bias Values for Lab Control Sample (LCS) Data

RESULT_TYPE_CODE	RIN	Analyte	Relative_Bias
LCS	09112725	Americium-241	-0.081
LCS	09042221	Americium-241	-0.077
LCS	09022116	Americium-241	-0.076
LCS	09102646	Americium-241	-0.075
LCS	09102651	Americium-241	-0.075
LCS	09102672	Americium-241	-0.075
LCS	09112686	Americium-241	-0.075
LCS	09062357	Americium-241	-0.056
LCS	09072445	Americium-241	-0.056
LCS	09052342	Plutonium-239/240	-0.049
LCS	09062357	Plutonium-239/240	-0.049
LCS	09062370	Plutonium-239/240	-0.049
LCS	09062376	Plutonium-239/240	-0.049
LCS	09092622	Americium-241	-0.047
LCS	09062357	Americium-241	-0.046
LCS	09022129	Plutonium-239/240	-0.045
LCS	09052342	Plutonium-239/240	-0.045
LCS	09062357	Plutonium-239/240	-0.045
LCS	09062370	Plutonium-239/240	-0.045
LCS	09062376	Plutonium-239/240	-0.045
LCS	09122742	Plutonium-239/240	-0.044
LCS	09062386	Plutonium-239/240	-0.038
LCS	09062401	Plutonium-239/240	-0.038
LCS	09062418	Plutonium-239/240	-0.038
LCS	09112711	Plutonium-239/240	-0.035
LCS	09112725	Plutonium-239/240	-0.035
LCS	09122767	Plutonium-239/240	-0.035
LCS	09102646	Plutonium-239/240	-0.032
LCS	09102651	Plutonium-239/240	-0.032
LCS	09102672	Plutonium-239/240	-0.032
LCS	09112686	Plutonium-239/240	-0.032
LCS	09062376	Plutonium-239/240	-0.031
LCS	09122767	Plutonium-239/240	-0.022
LCS	09052315	Plutonium-239/240	-0.021
LCS	09052315	Plutonium-239/240	-0.021
LCS	09052335	Plutonium-239/240	-0.021
LCS	09052335	Plutonium-239/240	-0.021
LCS	09052339	Plutonium-239/240	-0.021
LCS	09052339	Plutonium-239/240	-0.021
LCS	09042245	Uranium-238	-0.020
LCS	09072445	Plutonium-239/240	-0.017
LCS	09102646	Plutonium-239/240	-0.016
LCS	09102651	Plutonium-239/240	-0.016
LCS	09102672	Plutonium-239/240	-0.016
LCS	09112686	Plutonium-239/240	-0.016

Table B−4 (continued). Radionuclide Relative Bias Values for Lab Control Sample (LCS) Data

RESULT_TYPE_CODE	RIN	Analyte	Relative_Bias
LCS	09022129	Americium-241	-0.007
LCS	09122767	Americium-241	-0.003
LCS	09112711	Americium-241	0.000
LCS	09112725	Americium-241	0.000
LCS	09042221	Uranium-238	0.010
LCS	09052297	Americium-241	0.010
LCS	09052315	Americium-241	0.010
LCS	09052335	Americium-241	0.010
LCS	09052339	Americium-241	0.010
LCS	09062376	Plutonium-239/240	0.010
LCS	09082493	Americium-241	0.010
LCS	09082520	Plutonium-239/240	0.010
LCS	09082520	Plutonium-239/240	0.010
LCS	09022093	Plutonium-239/240	0.020
LCS	09022093	Uranium-238	0.020
LCS	09022116	Uranium-238	0.020
LCS	09032157	Plutonium-239/240	0.020
LCS	09032175	Plutonium-239/240	0.020
LCS	09042221	Americium-241	0.020
LCS	09042254	Americium-241	0.020
LCS	09052278	Americium-241	0.020
LCS	09052279	Americium-241	0.020
LCS	09112711	Plutonium-239/240	0.020
LCS	09112725	Plutonium-239/240	0.020
LCS	09122767	Americium-241	0.020
LCS	09012069	Uranium-238	0.030
LCS	09042221	Plutonium-239/240	0.030
LCS	09042254	Uranium-238	0.030
LCS	09072445	Plutonium-239/240	0.030
LCS	09082520	Plutonium-239/240	0.030
LCS	09092622	Plutonium-239/240	0.030
LCS	09022116	Plutonium-239/240	0.040
LCS	09022129	Uranium-238	0.040
LCS	09032144	Uranium-238	0.040
LCS	09042254	Plutonium-239/240	0.040
LCS	09052278	Plutonium-239/240	0.040
LCS	09082493	Plutonium-239/240	0.040
LCS	09042205	Uranium-238	0.050
LCS	09042245	Plutonium-239/240	0.050
LCS	09042246	Plutonium-239/240	0.050
LCS	09042248	Plutonium-239/240	0.050
LCS	09042254	Americium-241	0.050
LCS	09082520	Americium-241	0.050
LCS	09022129	Americium-241	0.060
LCS	09032157	Americium-241	0.060

Table B−4 (continued). Radionuclide Relative Bias Values for Lab Control Sample (LCS) Data

RESULT_TYPE_CODE	RIN	Analyte	Relative_Bias
LCS	09032175	Americium-241	0.060
LCS	09032186	Uranium-238	0.060
LCS	09042254	Americium-241	0.060
LCS	09012069	Americium-241	0.070
LCS	09042205	Plutonium-239/240	0.070
LCS	09052280	Plutonium-239/240	0.070
LCS	09052286	Plutonium-239/240	0.070
LCS	09052297	Plutonium-239/240	0.070
LCS	09092622	Plutonium-239/240	0.070
LCS	09122742	Americium-241	0.070
LCS	09022093	Americium-241	0.080
LCS	09032186	Americium-241	0.080
LCS	09032186	Plutonium-239/240	0.080
LCS	09042205	Americium-241	0.080
LCS	09042219	Uranium-238	0.080
LCS	09052278	Plutonium-239/240	0.080
LCS	09052279	Plutonium-239/240	0.080
LCS	09092622	Americium-241	0.080
LCS	09052297	Plutonium-239/240	0.100
LCS	09042221	Americium-241	0.120
LCS	09052280	Plutonium-239/240	0.160
LCS	09052286	Plutonium-239/240	0.160

Table B–5. Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09122746	Selenium	87.0	%REC
LCS	Metals	09032186	Chromium	88.9	%REC
LCS	Metals	09032195	Selenium	89.0	%REC
LCS	Metals	09092622	Cadmium	89.0	%REC
LCS	Metals	09032186	Beryllium	89.2	%REC
LCS	Metals	09092622	Arsenic	89.6	%REC
LCS	Metals	09092622	Silver	89.6	%REC
LCS	Metals	09092622	Beryllium	89.8	%REC
LCS	Metals	09042233	Silver	90.0	%REC
LCS	Metals	09092581	Mercury	90.0	%REC
LCS	Metals	09092622	Boron	90.1	%REC
LCS	Metals	09092622	Lead	90.7	%REC
LCS	Metals	09032195	Arsenic	91.0	%REC
LCS	Metals	09072455	Mercury	91.0	%REC
LCS	Metals	09082511	Beryllium	91.0	%REC
LCS	Metals	09082511	Zinc	91.0	%REC
LCS	Metals	09122754	Silver	91.0	%REC
LCS	Metals	09052339	Uranium	91.6	%REC
LCS	Metals	09042246	Arsenic	91.7	%REC
LCS	Metals	09032195	Arsenic	92.0	%REC
LCS	Metals	09032195	Selenium	92.0	%REC
LCS	Metals	09052301	Mercury	92.0	%REC
LCS	Metals	09092581	Cadmium	92.0	%REC
LCS	Metals	09122754	Chromium	92.0	%REC
LCS	Metals	09052339	Cadmium	92.9	%REC
LCS	Metals	09032134	Beryllium	93.0	%REC
LCS	Metals	09032195	Silver	93.0	%REC
LCS	Metals	09032195	Silver	93.0	%REC
LCS	Metals	09042254	Uranium	93.0	%REC
LCS	Metals	09052306	Cadmium	93.0	%REC
LCS	Metals	09052306	Nickel	93.0	%REC
LCS	Metals	09082511	Nickel	93.0	%REC
LCS	Metals	09092581	Nickel	93.0	%REC
LCS	Metals	09092581	Zinc	93.0	%REC
LCS	Metals	09112699	Boron	93.0	%REC
LCS	Metals	09122746	Selenium	93.0	%REC
LCS	Metals	09122754	Cadmium	93.0	%REC
LCS	Metals	09042254	Zinc	93.5	%REC
LCS	Metals	09032134	Lead	94.0	%REC
LCS	Metals	09032134	Mercury	94.0	%REC
LCS	Metals	09032195	Lead	94.0	%REC
LCS	Metals	09042233	Nickel	94.0	%REC
LCS	Metals	09042233	Zinc	94.0	%REC
LCS	Metals	09052300	Selenium	94.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09052301	Silver	94.0	%REC
LCS	Metals	09082511	Boron	94.0	%REC
LCS	Metals	09082511	Cadmium	94.0	%REC
LCS	Metals	09082527	Mercury	94.0	%REC
LCS	Metals	09092581	Beryllium	94.0	%REC
LCS	Metals	09092581	Boron	94.0	%REC
LCS	Metals	09092581	Lead	94.0	%REC
LCS	Metals	09092581	Selenium	94.0	%REC
LCS	Metals	09112685	Arsenic	94.0	%REC
LCS	Metals	09112685	Boron	94.0	%REC
LCS	Metals	09112685	Lead	94.0	%REC
LCS	Metals	09112685	Selenium	94.0	%REC
LCS	Metals	09122754	Lead	94.0	%REC
LCS	Metals	09122754	Selenium	94.0	%REC
LCS	Metals	09052297	Chromium	94.2	%REC
LCS	Metals	09052297	Beryllium	94.3	%REC
LCS	Metals	09032175	Beryllium	94.4	%REC
LCS	Metals	09042254	Boron	94.5	%REC
LCS	Metals	09052279	Cadmium	94.5	%REC
LCS	Metals	09092622	Zinc	94.8	%REC
LCS	Metals	09032134	Arsenic	95.0	%REC
LCS	Metals	09032134	Zinc	95.0	%REC
LCS	Metals	09032195	Lead	95.0	%REC
LCS	Metals	09042233	Beryllium	95.0	%REC
LCS	Metals	09052293	Uranium	95.0	%REC
LCS	Metals	09052297	Uranium	95.0	%REC
LCS	Metals	09062399	Uranium	95.0	%REC
LCS	Metals	09072444	Cadmium	95.0	%REC
LCS	Metals	09082511	Lead	95.0	%REC
LCS	Metals	09082511	Selenium	95.0	%REC
LCS	Metals	09092584	Mercury	95.0	%REC
LCS	Metals	09112699	Arsenic	95.0	%REC
LCS	Metals	09112699	Cadmium	95.0	%REC
LCS	Metals	09112699	Lead	95.0	%REC
LCS	Metals	09112699	Nickel	95.0	%REC
LCS	Metals	09112699	Selenium	95.0	%REC
LCS	Metals	09122754	Arsenic	95.0	%REC
LCS	Metals	09042254	Chromium	95.2	%REC
LCS	Metals	09052279	Lead	95.3	%REC
LCS	Metals	09022129	Chromium	95.4	%REC
LCS	Metals	09042254	Selenium	95.4	%REC
LCS	Metals	09042245	Cadmium	95.5	%REC
LCS	Metals	09072445	Chromium	95.6	%REC
LCS	Metals	09092622	Selenium	95.6	%REC
LCS	Metals	09032175	Chromium	95.7	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09042219	Boron	95.8	%REC
LCS	Metals	09042254	Cadmium	95.8	%REC
LCS	Metals	09052279	Zinc	95.8	%REC
LCS	Metals	09072445	Beryllium	95.8	%REC
LCS	Metals	09122742	Uranium	95.9	%REC
LCS	Metals	09022120	Mercury	96.0	%REC
LCS	Metals	09032134	Copper	96.0	%REC
LCS	Metals	09032195	Cadmium	96.0	%REC
LCS	Metals	09032195	Chromium	96.0	%REC
LCS	Metals	09052300	Silver	96.0	%REC
LCS	Metals	09052300	Silver	96.0	%REC
LCS	Metals	09052301	Arsenic	96.0	%REC
LCS	Metals	09052306	Chromium	96.0	%REC
LCS	Metals	09052306	Lead	96.0	%REC
LCS	Metals	09052306	Selenium	96.0	%REC
LCS	Metals	09052306	Uranium	96.0	%REC
LCS	Metals	09052306	Uranium	96.0	%REC
LCS	Metals	09072444	Lead	96.0	%REC
LCS	Metals	09072444	Mercury	96.0	%REC
LCS	Metals	09072444	Selenium	96.0	%REC
LCS	Metals	09092581	Arsenic	96.0	%REC
LCS	Metals	09112685	Beryllium	96.0	%REC
LCS	Metals	09112699	Beryllium	96.0	%REC
LCS	Metals	09022129	Beryllium	96.2	%REC
LCS	Metals	09042245	Silver	96.2	%REC
LCS	Metals	09052279	Arsenic	96.2	%REC
LCS	Metals	09052279	Beryllium	96.3	%REC
LCS	Metals	09122742	Boron	96.4	%REC
LCS	Metals	09042254	Nickel	96.5	%REC
LCS	Metals	09092622	Nickel	96.6	%REC
LCS	Metals	09052279	Boron	96.8	%REC
LCS	Metals	09052279	Silver	96.8	%REC
LCS	Metals	09042245	Beryllium	96.9	%REC
LCS	Metals	09042254	Copper	96.9	%REC
LCS	Metals	09022120	Arsenic	97.0	%REC
LCS	Metals	09032134	Nickel	97.0	%REC
LCS	Metals	09032195	Chromium	97.0	%REC
LCS	Metals	09032195	Mercury	97.0	%REC
LCS	Metals	09042233	Lead	97.0	%REC
LCS	Metals	09052293	Uranium	97.0	%REC
LCS	Metals	09052306	Silver	97.0	%REC
LCS	Metals	09062399	Uranium	97.0	%REC
LCS	Metals	09072444	Beryllium	97.0	%REC
LCS	Metals	09072444	Nickel	97.0	%REC
LCS	Metals	09072444	Zinc	97.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09082511	Chromium	97.0	%REC
LCS	Metals	09092581	Chromium	97.0	%REC
LCS	Metals	09092584	Lead	97.0	%REC
LCS	Metals	09112685	Cadmium	97.0	%REC
LCS	Metals	09112685	Nickel	97.0	%REC
LCS	Metals	09112699	Chromium	97.0	%REC
LCS	Metals	09042219	Lead	97.1	%REC
LCS	Metals	09042245	Chromium	97.1	%REC
LCS	Metals	09042254	Beryllium	97.2	%REC
LCS	Metals	09052339	Chromium	97.2	%REC
LCS	Metals	09042219	Cadmium	97.4	%REC
LCS	Metals	09042221	Boron	97.4	%REC
LCS	Metals	09122742	Arsenic	97.4	%REC
LCS	Metals	09042219	Beryllium	97.5	%REC
LCS	Metals	09042245	Uranium	97.5	%REC
LCS	Metals	09042246	Uranium	97.5	%REC
LCS	Metals	09052279	Chromium	97.5	%REC
LCS	Metals	09042254	Arsenic	97.6	%REC
LCS	Metals	09052339	Beryllium	97.6	%REC
LCS	Metals	09102651	Chromium	97.6	%REC
LCS	Metals	09032144	Boron	97.7	%REC
LCS	Metals	09032144	Mercury	97.7	%REC
LCS	Metals	09042219	Zinc	97.7	%REC
LCS	Metals	09052279	Nickel	97.7	%REC
LCS	Metals	09022116	Beryllium	97.8	%REC
LCS	Metals	09042219	Arsenic	97.8	%REC
LCS	Metals	09092622	Chromium	97.8	%REC
LCS	Metals	09042219	Copper	97.9	%REC
LCS	Metals	09122742	Beryllium	97.9	%REC
LCS	Metals	09042219	Chromium	98.0	%REC
LCS	Metals	09042233	Arsenic	98.0	%REC
LCS	Metals	09042233	Copper	98.0	%REC
LCS	Metals	09042233	Mercury	98.0	%REC
LCS	Metals	09042233	Selenium	98.0	%REC
LCS	Metals	09042254	Lead	98.0	%REC
LCS	Metals	09042255	Silver	98.0	%REC
LCS	Metals	09052300	Selenium	98.0	%REC
LCS	Metals	09072444	Arsenic	98.0	%REC
LCS	Metals	09072444	Boron	98.0	%REC
LCS	Metals	09072444	Chromium	98.0	%REC
LCS	Metals	09082511	Arsenic	98.0	%REC
LCS	Metals	09082511	Copper	98.0	%REC
LCS	Metals	09082511	Silver	98.0	%REC
LCS	Metals	09092581	Copper	98.0	%REC
LCS	Metals	09092584	Cadmium	98.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09092584	Silver	98.0	%REC
LCS	Metals	09102651	Beryllium	98.0	%REC
LCS	Metals	09112685	Chromium	98.0	%REC
LCS	Metals	09112699	Copper	98.0	%REC
LCS	Metals	09112718	Mercury	98.0	%REC
LCS	Metals	09122754	Mercury	98.0	%REC
LCS	Metals	09052315	Chromium	98.1	%REC
LCS	Metals	09062401	Chromium	98.1	%REC
LCS	Metals	09032157	Beryllium	98.2	%REC
LCS	Metals	09042219	Silver	98.2	%REC
LCS	Metals	09042219	Nickel	98.4	%REC
LCS	Metals	09052342	Boron	98.4	%REC
LCS	Metals	09062401	Cadmium	98.4	%REC
LCS	Metals	09072445	Cadmium	98.4	%REC
LCS	Metals	09122742	Chromium	98.4	%REC
LCS	Metals	09122742	Zinc	98.4	%REC
LCS	Metals	10012825	Zinc	98.4	%REC
LCS	Metals	09022116	Chromium	98.5	%REC
LCS	Metals	09032157	Chromium	98.6	%REC
LCS	Metals	09052279	Selenium	98.6	%REC
LCS	Metals	09052339	Silver	98.6	%REC
LCS	Metals	09122742	Lead	98.6	%REC
LCS	Metals	09042221	Zinc	98.7	%REC
LCS	Metals	09122742	Nickel	98.7	%REC
LCS	Metals	09052279	Uranium	98.8	%REC
LCS	Metals	09092622	Copper	98.8	%REC
LCS	Metals	09122742	Cadmium	98.8	%REC
LCS	Metals	09042219	Uranium	98.9	%REC
LCS	Metals	09042221	Cadmium	98.9	%REC
LCS	Metals	10012800	Silver	98.9	%REC
LCS	Metals	09022120	Beryllium	99.0	%REC
LCS	Metals	09022120	Boron	99.0	%REC
LCS	Metals	09022120	Cadmium	99.0	%REC
LCS	Metals	09022120	Lead	99.0	%REC
LCS	Metals	09022120	Nickel	99.0	%REC
LCS	Metals	09022120	Selenium	99.0	%REC
LCS	Metals	09022131	Silver	99.0	%REC
LCS	Metals	09032134	Boron	99.0	%REC
LCS	Metals	09032195	Mercury	99.0	%REC
LCS	Metals	09042233	Boron	99.0	%REC
LCS	Metals	09042233	Chromium	99.0	%REC
LCS	Metals	09052306	Arsenic	99.0	%REC
LCS	Metals	09052306	Beryllium	99.0	%REC
LCS	Metals	09072444	Mercury	99.0	%REC
LCS	Metals	09082520	Beryllium	99.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09082527	Lead	99.0	%REC
LCS	Metals	09082527	Selenium	99.0	%REC
LCS	Metals	09092581	Silver	99.0	%REC
LCS	Metals	09092584	Chromium	99.0	%REC
LCS	Metals	09092612	Selenium	99.0	%REC
LCS	Metals	09102658	Mercury	99.0	%REC
LCS	Metals	09112685	Zinc	99.0	%REC
LCS	Metals	09112699	Mercury	99.0	%REC
LCS	Metals	09112699	Zinc	99.0	%REC
LCS	Metals	09122742	Silver	99.0	%REC
LCS	Metals	09012069	Mercury	99.1	%REC
LCS	Metals	09042221	Chromium	99.2	%REC
LCS	Metals	09042221	Beryllium	99.3	%REC
LCS	Metals	09102651	Cadmium	99.3	%REC
LCS	Metals	09022129	Cadmium	99.4	%REC
LCS	Metals	09052342	Zinc	99.4	%REC
LCS	Metals	09122742	Boron	99.4	%REC
LCS	Metals	09042221	Lead	99.6	%REC
LCS	Metals	09052278	Uranium	99.6	%REC
LCS	Metals	09052279	Copper	99.6	%REC
LCS	Metals	10012825	Chromium	99.6	%REC
LCS	Metals	10012825	Nickel	99.6	%REC
LCS	Metals	09042221	Copper	99.7	%REC
LCS	Metals	09042221	Nickel	99.8	%REC
LCS	Metals	09042221	Selenium	99.8	%REC
LCS	Metals	09032144	Selenium	99.9	%REC
LCS	Metals	09052297	Cadmium	99.9	%REC
LCS	Metals	09012069	Cadmium	100.0	%REC
LCS	Metals	09012069	Zinc	100.0	%REC
LCS	Metals	09022120	Copper	100.0	%REC
LCS	Metals	09022131	Selenium	100.0	%REC
LCS	Metals	09032134	Cadmium	100.0	%REC
LCS	Metals	09032134	Chromium	100.0	%REC
LCS	Metals	09032134	Selenium	100.0	%REC
LCS	Metals	09032144	Beryllium	100.0	%REC
LCS	Metals	09032144	Copper	100.0	%REC
LCS	Metals	09032144	Zinc	100.0	%REC
LCS	Metals	09042219	Selenium	100.0	%REC
LCS	Metals	09042221	Arsenic	100.0	%REC
LCS	Metals	09042221	Silver	100.0	%REC
LCS	Metals	09052301	Boron	100.0	%REC
LCS	Metals	09052301	Selenium	100.0	%REC
LCS	Metals	09052306	Copper	100.0	%REC
LCS	Metals	09062386	Uranium	100.0	%REC
LCS	Metals	09072444	Copper	100.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09082520	Chromium	100.0	%REC
LCS	Metals	09082527	Boron	100.0	%REC
LCS	Metals	09082527	Cadmium	100.0	%REC
LCS	Metals	09092584	Selenium	100.0	%REC
LCS	Metals	09112685	Copper	100.0	%REC
LCS	Metals	09112699	Silver	100.0	%REC
LCS	Metals	09122742	Copper	100.0	%REC
LCS	Metals	10012800	Cadmium	100.0	%REC
LCS	Metals	10012800	Uranium	100.0	%REC
LCS	Metals	09012069	Arsenic	101.0	%REC
LCS	Metals	09012069	Boron	101.0	%REC
LCS	Metals	09012069	Cadmium	101.0	%REC
LCS	Metals	09012069	Lead	101.0	%REC
LCS	Metals	09012069	Nickel	101.0	%REC
LCS	Metals	09022120	Chromium	101.0	%REC
LCS	Metals	09032144	Cadmium	101.0	%REC
LCS	Metals	09032144	Chromium	101.0	%REC
LCS	Metals	09032144	Lead	101.0	%REC
LCS	Metals	09032144	Nickel	101.0	%REC
LCS	Metals	09032144	Silver	101.0	%REC
LCS	Metals	09032144	Uranium	101.0	%REC
LCS	Metals	09032186	Silver	101.0	%REC
LCS	Metals	09042219	Mercury	101.0	%REC
LCS	Metals	09042233	Cadmium	101.0	%REC
LCS	Metals	09042248	Mercury	101.0	%REC
LCS	Metals	09042255	Lead	101.0	%REC
LCS	Metals	09052279	Cadmium	101.0	%REC
LCS	Metals	09052301	Chromium	101.0	%REC
LCS	Metals	09052301	Lead	101.0	%REC
LCS	Metals	09052301	Nickel	101.0	%REC
LCS	Metals	09052301	Uranium	101.0	%REC
LCS	Metals	09052306	Zinc	101.0	%REC
LCS	Metals	09052315	Silver	101.0	%REC
LCS	Metals	09052342	Cadmium	101.0	%REC
LCS	Metals	09052342	Lead	101.0	%REC
LCS	Metals	09052342	Mercury	101.0	%REC
LCS	Metals	09052342	Nickel	101.0	%REC
LCS	Metals	09052342	Selenium	101.0	%REC
LCS	Metals	09062386	Cadmium	101.0	%REC
LCS	Metals	09072444	Silver	101.0	%REC
LCS	Metals	09072455	Lead	101.0	%REC
LCS	Metals	09072455	Selenium	101.0	%REC
LCS	Metals	09072455	Silver	101.0	%REC
LCS	Metals	09082527	Arsenic	101.0	%REC
LCS	Metals	09082527	Nickel	101.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09082527	Zinc	101.0	%REC
LCS	Metals	09092612	Selenium	101.0	%REC
LCS	Metals	09092612	Uranium	101.0	%REC
LCS	Metals	09092612	Uranium	101.0	%REC
LCS	Metals	09092622	Silver	101.0	%REC
LCS	Metals	09102658	Beryllium	101.0	%REC
LCS	Metals	09102658	Cadmium	101.0	%REC
LCS	Metals	09102658	Lead	101.0	%REC
LCS	Metals	09112699	Uranium	101.0	%REC
LCS	Metals	09122742	Cadmium	101.0	%REC
LCS	Metals	09122742	Zinc	101.0	%REC
LCS	Metals	09122746	Uranium	101.0	%REC
LCS	Metals	09122746	Uranium	101.0	%REC
LCS	Metals	10012825	Boron	101.0	%REC
LCS	Metals	10012825	Copper	101.0	%REC
LCS	Metals	09012058	Uranium	102.0	%REC
LCS	Metals	09012069	Beryllium	102.0	%REC
LCS	Metals	09012069	Chromium	102.0	%REC
LCS	Metals	09012069	Selenium	102.0	%REC
LCS	Metals	09012069	Silver	102.0	%REC
LCS	Metals	09022120	Silver	102.0	%REC
LCS	Metals	09022120	Zinc	102.0	%REC
LCS	Metals	09022129	Silver	102.0	%REC
LCS	Metals	09032195	Cadmium	102.0	%REC
LCS	Metals	09042221	Uranium	102.0	%REC
LCS	Metals	09042240	Uranium	102.0	%REC
LCS	Metals	09042248	Cadmium	102.0	%REC
LCS	Metals	09042255	Zinc	102.0	%REC
LCS	Metals	09052286	Uranium	102.0	%REC
LCS	Metals	09052297	Silver	102.0	%REC
LCS	Metals	09052301	Cadmium	102.0	%REC
LCS	Metals	09052306	Boron	102.0	%REC
LCS	Metals	09052315	Beryllium	102.0	%REC
LCS	Metals	09052342	Beryllium	102.0	%REC
LCS	Metals	09052342	Chromium	102.0	%REC
LCS	Metals	09052342	Silver	102.0	%REC
LCS	Metals	09062386	Beryllium	102.0	%REC
LCS	Metals	09062386	Chromium	102.0	%REC
LCS	Metals	09062401	Beryllium	102.0	%REC
LCS	Metals	09062401	Uranium	102.0	%REC
LCS	Metals	09082527	Beryllium	102.0	%REC
LCS	Metals	09082527	Chromium	102.0	%REC
LCS	Metals	09092584	Arsenic	102.0	%REC
LCS	Metals	09092622	Cadmium	102.0	%REC
LCS	Metals	09092622	Uranium	102.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09102651	Uranium	102.0	%REC
LCS	Metals	09102658	Nickel	102.0	%REC
LCS	Metals	09102658	Zinc	102.0	%REC
LCS	Metals	09112685	Mercury	102.0	%REC
LCS	Metals	09122742	Cadmium	102.0	%REC
LCS	Metals	09122742	Selenium	102.0	%REC
LCS	Metals	09122742	Silver	102.0	%REC
LCS	Metals	09122742	Silver	102.0	%REC
LCS	Metals	10012825	Cadmium	102.0	%REC
LCS	Metals	10012825	Selenium	102.0	%REC
LCS	Metals	10012825	Silver	102.0	%REC
LCS	Metals	10012825	Uranium	102.0	%REC
LCS	Metals	09012069	Copper	103.0	%REC
LCS	Metals	09012069	Uranium	103.0	%REC
LCS	Metals	09032144	Arsenic	103.0	%REC
LCS	Metals	09042221	Silver	103.0	%REC
LCS	Metals	09042240	Uranium	103.0	%REC
LCS	Metals	09042248	Boron	103.0	%REC
LCS	Metals	09042248	Selenium	103.0	%REC
LCS	Metals	09042248	Silver	103.0	%REC
LCS	Metals	09042248	Zinc	103.0	%REC
LCS	Metals	09042255	Beryllium	103.0	%REC
LCS	Metals	09042255	Mercury	103.0	%REC
LCS	Metals	09042255	Nickel	103.0	%REC
LCS	Metals	09052279	Silver	103.0	%REC
LCS	Metals	09052279	Uranium	103.0	%REC
LCS	Metals	09052281	Uranium	103.0	%REC
LCS	Metals	09052315	Cadmium	103.0	%REC
LCS	Metals	09052342	Arsenic	103.0	%REC
LCS	Metals	09052342	Copper	103.0	%REC
LCS	Metals	09062383	Uranium	103.0	%REC
LCS	Metals	09062386	Silver	103.0	%REC
LCS	Metals	09072455	Chromium	103.0	%REC
LCS	Metals	09082520	Cadmium	103.0	%REC
LCS	Metals	09102658	Silver	103.0	%REC
LCS	Metals	09112711	Uranium	103.0	%REC
LCS	Metals	09122742	Arsenic	103.0	%REC
LCS	Metals	09122742	Beryllium	103.0	%REC
LCS	Metals	09122742	Chromium	103.0	%REC
LCS	Metals	09122742	Chromium	103.0	%REC
LCS	Metals	09122742	Lead	103.0	%REC
LCS	Metals	09122742	Nickel	103.0	%REC
LCS	Metals	09122742	Uranium	103.0	%REC
LCS	Metals	10012825	Arsenic	103.0	%REC
LCS	Metals	10012825	Beryllium	103.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	10012825	Lead	103.0	%REC
LCS	Metals	09012058	Uranium	104.0	%REC
LCS	Metals	09012069	Silver	104.0	%REC
LCS	Metals	09032175	Silver	104.0	%REC
LCS	Metals	09042221	Cadmium	104.0	%REC
LCS	Metals	09042248	Arsenic	104.0	%REC
LCS	Metals	09042248	Beryllium	104.0	%REC
LCS	Metals	09042248	Cadmium	104.0	%REC
LCS	Metals	09042248	Chromium	104.0	%REC
LCS	Metals	09042248	Lead	104.0	%REC
LCS	Metals	09042248	Silver	104.0	%REC
LCS	Metals	09042254	Silver	104.0	%REC
LCS	Metals	09042255	Arsenic	104.0	%REC
LCS	Metals	09042255	Boron	104.0	%REC
LCS	Metals	09052301	Beryllium	104.0	%REC
LCS	Metals	09052301	Zinc	104.0	%REC
LCS	Metals	09052342	Uranium	104.0	%REC
LCS	Metals	09062357	Uranium	104.0	%REC
LCS	Metals	09062383	Uranium	104.0	%REC
LCS	Metals	09062401	Silver	104.0	%REC
LCS	Metals	09072444	Uranium	104.0	%REC
LCS	Metals	09072455	Arsenic	104.0	%REC
LCS	Metals	09072455	Cadmium	104.0	%REC
LCS	Metals	09082511	Mercury	104.0	%REC
LCS	Metals	09082520	Uranium	104.0	%REC
LCS	Metals	09082527	Copper	104.0	%REC
LCS	Metals	09102651	Silver	104.0	%REC
LCS	Metals	09102658	Arsenic	104.0	%REC
LCS	Metals	09102658	Boron	104.0	%REC
LCS	Metals	09102658	Copper	104.0	%REC
LCS	Metals	09102658	Selenium	104.0	%REC
LCS	Metals	09102668	Uranium	104.0	%REC
LCS	Metals	09102672	Beryllium	104.0	%REC
LCS	Metals	09102672	Cadmium	104.0	%REC
LCS	Metals	09112686	Beryllium	104.0	%REC
LCS	Metals	09112686	Cadmium	104.0	%REC
LCS	Metals	09112718	Silver	104.0	%REC
LCS	Metals	09122742	Cadmium	104.0	%REC
LCS	Metals	09122742	Copper	104.0	%REC
LCS	Metals	09122742	Uranium	104.0	%REC
LCS	Metals	10012825	Uranium	104.0	%REC
LCS	Metals	09042233	Uranium	105.0	%REC
LCS	Metals	09042248	Nickel	105.0	%REC
LCS	Metals	09042254	Mercury	105.0	%REC
LCS	Metals	09042254	Uranium	105.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09042255	Chromium	105.0	%REC
LCS	Metals	09042255	Copper	105.0	%REC
LCS	Metals	09042255	Selenium	105.0	%REC
LCS	Metals	09052281	Uranium	105.0	%REC
LCS	Metals	09052306	Mercury	105.0	%REC
LCS	Metals	09052335	Uranium	105.0	%REC
LCS	Metals	09052341	Uranium	105.0	%REC
LCS	Metals	09062376	Uranium	105.0	%REC
LCS	Metals	09062404	Uranium	105.0	%REC
LCS	Metals	09072445	Silver	105.0	%REC
LCS	Metals	09082511	Uranium	105.0	%REC
LCS	Metals	09082527	Silver	105.0	%REC
LCS	Metals	09082543	Uranium	105.0	%REC
LCS	Metals	09102658	Chromium	105.0	%REC
LCS	Metals	09112685	Silver	105.0	%REC
LCS	Metals	09112718	Chromium	105.0	%REC
LCS	Metals	09112718	Selenium	105.0	%REC
LCS	Metals	09122742	Lead	105.0	%REC
LCS	Metals	09122742	Selenium	105.0	%REC
LCS	Metals	09042248	Copper	106.0	%REC
LCS	Metals	09042253	Uranium	106.0	%REC
LCS	Metals	09052306	Uranium	106.0	%REC
LCS	Metals	09052315	Uranium	106.0	%REC
LCS	Metals	09052341	Uranium	106.0	%REC
LCS	Metals	09052342	Uranium	106.0	%REC
LCS	Metals	09072444	Uranium	106.0	%REC
LCS	Metals	09102645	Uranium	106.0	%REC
LCS	Metals	09102650	Uranium	106.0	%REC
LCS	Metals	09102668	Uranium	106.0	%REC
LCS	Metals	09102672	Chromium	106.0	%REC
LCS	Metals	09112686	Chromium	106.0	%REC
LCS	Metals	09112718	Cadmium	106.0	%REC
LCS	Metals	09112718	Lead	106.0	%REC
LCS	Metals	09112725	Uranium	106.0	%REC
LCS	Metals	09122742	Arsenic	106.0	%REC
LCS	Metals	09122742	Selenium	106.0	%REC
LCS	Metals	09122742	Silver	106.0	%REC
LCS	Metals	09022120	Uranium	107.0	%REC
LCS	Metals	09032175	Cadmium	107.0	%REC
LCS	Metals	09042248	Uranium	107.0	%REC
LCS	Metals	09042248	Uranium	107.0	%REC
LCS	Metals	09042253	Uranium	107.0	%REC
LCS	Metals	09042254	Cadmium	107.0	%REC
LCS	Metals	09052279	Mercury	107.0	%REC
LCS	Metals	09052301	Copper	107.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09052332	Uranium	107.0	%REC
LCS	Metals	09062370	Uranium	107.0	%REC
LCS	Metals	09072470	Uranium	107.0	%REC
LCS	Metals	09082520	Silver	107.0	%REC
LCS	Metals	09102672	Silver	107.0	%REC
LCS	Metals	09112685	Uranium	107.0	%REC
LCS	Metals	09112686	Silver	107.0	%REC
LCS	Metals	09112718	Arsenic	107.0	%REC
LCS	Metals	09122742	Nickel	107.0	%REC
LCS	Metals	09032186	Cadmium	108.0	%REC
LCS	Metals	09062404	Uranium	108.0	%REC
LCS	Metals	09062418	Uranium	108.0	%REC
LCS	Metals	09082527	Uranium	108.0	%REC
LCS	Metals	09092581	Uranium	108.0	%REC
LCS	Metals	09092622	Uranium	108.0	%REC
LCS	Metals	09122742	Mercury	108.0	%REC
LCS	Metals	10012825	Mercury	108.0	%REC
LCS	Metals	09042233	Uranium	109.0	%REC
LCS	Metals	09042255	Cadmium	109.0	%REC
LCS	Metals	09072445	Uranium	109.0	%REC
LCS	Metals	09122742	Uranium	109.0	%REC
LCS	Metals	09022116	Cadmium	110.0	%REC
LCS	Metals	09032157	Cadmium	110.0	%REC
LCS	Metals	09032157	Silver	110.0	%REC
LCS	Metals	09042221	Mercury	110.0	%REC
LCS	Metals	09042254	Silver	110.0	%REC
LCS	Metals	09082493	Uranium	110.0	%REC
LCS	Metals	09082552	Uranium	110.0	%REC
LCS	Metals	09082552	Uranium	110.0	%REC
LCS	Metals	09102645	Uranium	110.0	%REC
LCS	Metals	09102650	Uranium	110.0	%REC
LCS	Metals	09102658	Uranium	110.0	%REC
LCS	Metals	10012800	Beryllium	110.0	%REC
LCS	Metals	09032134	Uranium	111.0	%REC
LCS	Metals	09042233	Uranium	111.0	%REC
LCS	Metals	09082517	Uranium	111.0	%REC
LCS	Metals	10012800	Chromium	111.0	%REC
LCS	Metals	09052332	Uranium	112.0	%REC
LCS	Metals	09102672	Uranium	112.0	%REC
LCS	Metals	09112686	Uranium	112.0	%REC
LCS	Metals	09032134	Silver	114.0	%REC
LCS	Metals	09122767	Uranium	115.0	%REC
LCS	Metals	09042255	Uranium	116.0	%REC
LCS	Metals	09122742	Mercury	119.0	%REC
LCS	Metals	09022116	Silver	120.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	Metals	09092622	Mercury	122.0	%REC
LCS	VOCs/SVOCs	09012069	Phenol	31.2	%REC
LCS	VOCs/SVOCs	09042219	Phenol	32.1	%REC
LCS	VOCs/SVOCs	09012069	Phenol	32.3	%REC
LCS	VOCs/SVOCs	09012069	4-Nitrophenol	32.7	%REC
LCS	VOCs/SVOCs	09012069	4-Nitrophenol	33.8	%REC
LCS	VOCs/SVOCs	09042219	Hexachlorocyclopentadiene	35.2	%REC
LCS	VOCs/SVOCs	09042219	4-Nitrophenol	37.4	%REC
LCS	VOCs/SVOCs	09042219	Hexachlorobutadiene	37.8	%REC
LCS	VOCs/SVOCs	09042219	Hexachloroethane	39.1	%REC
LCS	VOCs/SVOCs	09042219	1,4-Dichlorobenzene	45.8	%REC
LCS	VOCs/SVOCs	09042219	1,3-Dichlorobenzene	45.9	%REC
LCS	VOCs/SVOCs	09112699	1,4-Dichlorobenzene	47.0	%REC
LCS	VOCs/SVOCs	09112699	1,2,4-Trichlorobenzene	48.0	%REC
LCS	VOCs/SVOCs	09042219	1,2-Dichlorobenzene	48.5	%REC
LCS	VOCs/SVOCs	09082527	1,2,4-Trichlorobenzene	49.0	%REC
LCS	VOCs/SVOCs	09082527	1,4-Dichlorobenzene	49.0	%REC
LCS	VOCs/SVOCs	09042219	1,2,4-Trichlorobenzene	49.2	%REC
LCS	VOCs/SVOCs	09012069	Hexachlorocyclopentadiene	51.5	%REC
LCS	VOCs/SVOCs	09012069	3,3'-Dichlorobenzidine	52.1	%REC
LCS	VOCs/SVOCs	09012069	Hexachlorocyclopentadiene	52.6	%REC
LCS	VOCs/SVOCs	09082511	1,4-Dichlorobenzene	53.0	%REC
LCS	VOCs/SVOCs	09082511	1,2,4-Trichlorobenzene	54.0	%REC
LCS	VOCs/SVOCs	09012069	Hexachloroethane	55.2	%REC
LCS	VOCs/SVOCs	09042255	1,2,4-Trichlorobenzene	56.0	%REC
LCS	VOCs/SVOCs	09042255	1,2,4-Trichlorobenzene	56.0	%REC
LCS	VOCs/SVOCs	09042255	1,4-Dichlorobenzene	56.0	%REC
LCS	VOCs/SVOCs	09112699	Acenaphthene	56.0	%REC
LCS	VOCs/SVOCs	09042255	1,4-Dichlorobenzene	57.0	%REC
LCS	VOCs/SVOCs	09112699	Phenol	57.0	%REC
LCS	VOCs/SVOCs	09012069	Hexachloroethane	57.5	%REC
LCS	VOCs/SVOCs	09042219	Naphthalene	57.7	%REC
LCS	VOCs/SVOCs	09102658	1,2,4-Trichlorobenzene	58.0	%REC
LCS	VOCs/SVOCs	09112699	2-Chlorophenol	58.0	%REC
LCS	VOCs/SVOCs	09012069	Hexachlorobutadiene	58.2	%REC
LCS	VOCs/SVOCs	09072444	1,4-Dichlorobenzene	59.0	%REC
LCS	VOCs/SVOCs	09102658	1,4-Dichlorobenzene	59.0	%REC
LCS	VOCs/SVOCs	09112699	N-Nitrosodi-N-Propylamine	60.0	%REC
LCS	VOCs/SVOCs	09112724	1,4-Dichlorobenzene	60.0	%REC
LCS	VOCs/SVOCs	09012069	Hexachlorobutadiene	60.3	%REC
LCS	VOCs/SVOCs	09072444	1,2,4-Trichlorobenzene	61.0	%REC
LCS	VOCs/SVOCs	09112724	1,2,4-Trichlorobenzene	61.0	%REC
LCS	VOCs/SVOCs	09012069	1,4-Dichlorobenzene	62.0	%REC
LCS	VOCs/SVOCs	09082511	1,4-Dichlorobenzene	62.0	%REC
LCS	VOCs/SVOCs	09112699	4-Chloro-3-Methylphenol	62.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09112699	Anthracene	62.0	%REC
LCS	VOCs/SVOCs	09112699	Pyrene	62.0	%REC
LCS	VOCs/SVOCs	09012069	1,3-Dichlorobenzene	62.1	%REC
LCS	VOCs/SVOCs	09112699	1,4-Dichlorobenzene	63.0	%REC
LCS	VOCs/SVOCs	09012069	1,3-Dichlorobenzene	63.5	%REC
LCS	VOCs/SVOCs	09012069	1,2-Dichlorobenzene	63.7	%REC
LCS	VOCs/SVOCs	09012069	1,4-Dichlorobenzene	63.8	%REC
LCS	VOCs/SVOCs	09112699	1,2,4-Trichlorobenzene	64.0	%REC
LCS	VOCs/SVOCs	09112699	2,4,6-Trichlorophenol	64.0	%REC
LCS	VOCs/SVOCs	09112724	1,4-Dichlorobenzene	64.0	%REC
LCS	VOCs/SVOCs	09042219	2-Chloronaphthalene	64.1	%REC
LCS	VOCs/SVOCs	09042219	Acenaphthene	64.5	%REC
LCS	VOCs/SVOCs	09042219	Benzidine	64.6	%REC
LCS	VOCs/SVOCs	09082511	1,2,4-Trichlorobenzene	65.0	%REC
LCS	VOCs/SVOCs	09112699	4-Nitrophenol	65.0	%REC
LCS	VOCs/SVOCs	09112724	1,2,4-Trichlorobenzene	65.0	%REC
LCS	VOCs/SVOCs	09042219	Fluorene	65.8	%REC
LCS	VOCs/SVOCs	09012069	1,2-Dichlorobenzene	65.9	%REC
LCS	VOCs/SVOCs	09042219	Fluoranthene	66.3	%REC
LCS	VOCs/SVOCs	09012069	1,2,4-Trichlorobenzene	66.4	%REC
LCS	VOCs/SVOCs	09072444	1,2,4-Trichlorobenzene	67.0	%REC
LCS	VOCs/SVOCs	09072444	1,4-Dichlorobenzene	67.0	%REC
LCS	VOCs/SVOCs	09082527	1,4-Dichlorobenzene	67.0	%REC
LCS	VOCs/SVOCs	09042219	Bis(2-Chloroethyl) Ether	67.2	%REC
LCS	VOCs/SVOCs	09032134	1,2,4-Trichlorobenzene	68.0	%REC
LCS	VOCs/SVOCs	09042255	Acenaphthene	68.0	%REC
LCS	VOCs/SVOCs	09042255	Pyrene	68.0	%REC
LCS	VOCs/SVOCs	09052306	1,4-Dichlorobenzene	68.0	%REC
LCS	VOCs/SVOCs	09082527	2-Chlorophenol	68.0	%REC
LCS	VOCs/SVOCs	09082527	Acenaphthene	68.0	%REC
LCS	VOCs/SVOCs	09082527	Phenol	68.0	%REC
LCS	VOCs/SVOCs	09102658	Acenaphthene	68.0	%REC
LCS	VOCs/SVOCs	09112699	2,4-Dinitrotoluene	68.0	%REC
LCS	VOCs/SVOCs	09042219	Nitrobenzene	68.4	%REC
LCS	VOCs/SVOCs	09012069	1,2,4-Trichlorobenzene	68.6	%REC
LCS	VOCs/SVOCs	09032134	1,2,4-Trichlorobenzene	69.0	%REC
LCS	VOCs/SVOCs	09052306	1,2,4-Trichlorobenzene	69.0	%REC
LCS	VOCs/SVOCs	09082527	1,2,4-Trichlorobenzene	69.0	%REC
LCS	VOCs/SVOCs	09082527	N-Nitrosodi-N-Propylamine	69.0	%REC
LCS	VOCs/SVOCs	09012069	Naphthalene	70.0	%REC
LCS	VOCs/SVOCs	09032134	1,4-Dichlorobenzene	70.0	%REC
LCS	VOCs/SVOCs	09032134	1,4-Dichlorobenzene	70.0	%REC
LCS	VOCs/SVOCs	09042255	Anthracene	70.0	%REC
LCS	VOCs/SVOCs	09042219	2-Chlorophenol	70.1	%REC
LCS	VOCs/SVOCs	09042219	3,3'-Dichlorobenzidine	70.3	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09042219	2,4-Dichlorophenol	70.7	%REC
LCS	VOCs/SVOCs	09042219	Hexachlorobenzene	70.7	%REC
LCS	VOCs/SVOCs	09012069	Naphthalene	70.9	%REC
LCS	VOCs/SVOCs	09042219	Bis(2-Chloroisopropyl)Ether	71.0	%REC
LCS	VOCs/SVOCs	09042255	4-Nitrophenol	71.0	%REC
LCS	VOCs/SVOCs	09112699	Pentachlorophenol	71.0	%REC
LCS	VOCs/SVOCs	09012069	Bis(2-Chloroethyl) Ether	71.1	%REC
LCS	VOCs/SVOCs	09012069	3,3'-Dichlorobenzidine	71.2	%REC
LCS	VOCs/SVOCs	09012069	Bis(2-Chloroisopropyl)Ether	71.7	%REC
LCS	VOCs/SVOCs	09012069	Nitrobenzene	71.7	%REC
LCS	VOCs/SVOCs	09012069	Pentachlorophenol	71.8	%REC
LCS	VOCs/SVOCs	09042219	1,2-Diphenylhydrazine	72.0	%REC
LCS	VOCs/SVOCs	09042255	Acenaphthene	72.0	%REC
LCS	VOCs/SVOCs	09042255	Pentachlorophenol	72.0	%REC
LCS	VOCs/SVOCs	09082527	4-Chloro-3-Methylphenol	72.0	%REC
LCS	VOCs/SVOCs	09102658	1,2,4-Trichlorobenzene	72.0	%REC
LCS	VOCs/SVOCs	09112699	Acenaphthene	72.0	%REC
LCS	VOCs/SVOCs	09042219	2,4,6-Trichlorophenol	72.1	%REC
LCS	VOCs/SVOCs	09012069	Nitrobenzene	72.2	%REC
LCS	VOCs/SVOCs	09012069	Bis(2-Chloroethyl) Ether	72.3	%REC
LCS	VOCs/SVOCs	09042255	2,4-Dinitrotoluene	73.0	%REC
LCS	VOCs/SVOCs	09042219	Benzo(A)Anthracene	73.4	%REC
LCS	VOCs/SVOCs	09042219	Anthracene	73.5	%REC
LCS	VOCs/SVOCs	09042219	Bis(2-Ethylhexyl)Phthalate	74.0	%REC
LCS	VOCs/SVOCs	09102658	1,4-Dichlorobenzene	74.0	%REC
LCS	VOCs/SVOCs	09042219	N-Nitrosodipropylamine	74.5	%REC
LCS	VOCs/SVOCs	09012069	Bis(2-Chloroisopropyl)Ether	74.9	%REC
LCS	VOCs/SVOCs	09072444	Acenaphthene	75.0	%REC
LCS	VOCs/SVOCs	09112699	2-Chlorophenol	75.0	%REC
LCS	VOCs/SVOCs	09042219	Di-N-Butylphthalate	75.2	%REC
LCS	VOCs/SVOCs	09012069	Acenaphthene	75.4	%REC
LCS	VOCs/SVOCs	09042219	2,4-Dimethylphenol	75.4	%REC
LCS	VOCs/SVOCs	09042219	Chrysene	75.5	%REC
LCS	VOCs/SVOCs	09042219	4-Chloro-3-Methylphenol	75.8	%REC
LCS	VOCs/SVOCs	09042219	Benzo(K)Fluoranthene	75.8	%REC
LCS	VOCs/SVOCs	09042219	Diethylphthalate	75.8	%REC
LCS	VOCs/SVOCs	09042219	Isophorone	75.8	%REC
LCS	VOCs/SVOCs	09012069	2,4-Dinitrophenol	76.0	%REC
LCS	VOCs/SVOCs	09042255	4-Nitrophenol	76.0	%REC
LCS	VOCs/SVOCs	09042255	Anthracene	76.0	%REC
LCS	VOCs/SVOCs	09042255	Pyrene	76.0	%REC
LCS	VOCs/SVOCs	09082527	2,4,6-Trichlorophenol	76.0	%REC
LCS	VOCs/SVOCs	09082527	N-Nitrosodi-N-Propylamine	76.0	%REC
LCS	VOCs/SVOCs	09082527	Pyrene	76.0	%REC
LCS	VOCs/SVOCs	09112699	Phenol	76.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09012069	2-Chloronaphthalene	76.4	%REC
LCS	VOCs/SVOCs	09012069	Pentachlorophenol	76.6	%REC
LCS	VOCs/SVOCs	09042219	Atrazine	76.6	%REC
LCS	VOCs/SVOCs	09042219	Indeno(1,2,3-Cd)Pyrene	76.7	%REC
LCS	VOCs/SVOCs	09042219	2,4,5-Trichlorophenol	76.8	%REC
LCS	VOCs/SVOCs	09042219	Pyrene	77.0	%REC
LCS	VOCs/SVOCs	09042255	2,4,6-Trichlorophenol	77.0	%REC
LCS	VOCs/SVOCs	09042255	N-Nitrosodi-N-Propylamine	77.0	%REC
LCS	VOCs/SVOCs	09082527	2,4-Dinitrotoluene	77.0	%REC
LCS	VOCs/SVOCs	09102658	2-Chlorophenol	77.0	%REC
LCS	VOCs/SVOCs	09112699	N-Nitrosodi-N-Propylamine	77.0	%REC
LCS	VOCs/SVOCs	09012069	Acenaphthene	77.1	%REC
LCS	VOCs/SVOCs	09012069	2,4-Dinitrophenol	77.2	%REC
LCS	VOCs/SVOCs	09042219	Dimethylphthalate	77.7	%REC
LCS	VOCs/SVOCs	09042219	Pentachlorophenol	77.8	%REC
LCS	VOCs/SVOCs	09032166	1,3-Dichlorobenzene	78.0	%REC
LCS	VOCs/SVOCs	09042233	Carbon Tetrachloride	78.0	%REC
LCS	VOCs/SVOCs	09042255	N-Nitrosodi-N-Propylamine	78.0	%REC
LCS	VOCs/SVOCs	09062411	Tetrachloroethene	78.0	%REC
LCS	VOCs/SVOCs	09072444	1,3-Dichlorobenzene	78.0	%REC
LCS	VOCs/SVOCs	09072444	2-Chlorophenol	78.0	%REC
LCS	VOCs/SVOCs	09072444	Phenol	78.0	%REC
LCS	VOCs/SVOCs	09082511	2-Chlorophenol	78.0	%REC
LCS	VOCs/SVOCs	09082511	Acenaphthene	78.0	%REC
LCS	VOCs/SVOCs	09082527	2-Chlorophenol	78.0	%REC
LCS	VOCs/SVOCs	09082527	Anthracene	78.0	%REC
LCS	VOCs/SVOCs	09082527	Phenol	78.0	%REC
LCS	VOCs/SVOCs	09112699	Anthracene	78.0	%REC
LCS	VOCs/SVOCs	09112699	Pyrene	78.0	%REC
LCS	VOCs/SVOCs	09042219	Dibenzo(A,H)Anthracene	78.3	%REC
LCS	VOCs/SVOCs	09012069	2,4-Dimethylphenol	78.7	%REC
LCS	VOCs/SVOCs	09042219	Benzo(A)Pyrene	78.7	%REC
LCS	VOCs/SVOCs	09012069	2-Chloronaphthalene	78.9	%REC
LCS	VOCs/SVOCs	09012069	2-Chlorophenol	78.9	%REC
LCS	VOCs/SVOCs	09042219	Benzo(Ghi)Perylene	78.9	%REC
LCS	VOCs/SVOCs	09012069	2,4-Dimethylphenol	79.0	%REC
LCS	VOCs/SVOCs	09022131	Tetrachloroethene	79.0	%REC
LCS	VOCs/SVOCs	09042240	1,1-Dichloroethene	79.0	%REC
LCS	VOCs/SVOCs	09042255	Pentachlorophenol	79.0	%REC
LCS	VOCs/SVOCs	09052332	Tetrachloroethene	79.0	%REC
LCS	VOCs/SVOCs	09052341	1,1-Dichloroethene	79.0	%REC
LCS	VOCs/SVOCs	09072444	4-Chloro-3-Methylphenol	79.0	%REC
LCS	VOCs/SVOCs	09072444	Acenaphthene	79.0	%REC
LCS	VOCs/SVOCs	09082511	1,3-Dichlorobenzene	79.0	%REC
LCS	VOCs/SVOCs	09082511	1,3-Dichlorobenzene	79.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09082527	Pentachlorophenol	79.0	%REC
LCS	VOCs/SVOCs	09112699	Methylene Chloride	79.0	%REC
LCS	VOCs/SVOCs	09042219	Benzo(B)Fluoranthene	79.2	%REC
LCS	VOCs/SVOCs	09042219	2,4-Dinitrophenol	79.7	%REC
LCS	VOCs/SVOCs	09042219	2,6-Dinitrotoluene	79.7	%REC
LCS	VOCs/SVOCs	09042233	1,1-Dichloroethene	80.0	%REC
LCS	VOCs/SVOCs	09042233	Trans-1,2-Dichloroethene	80.0	%REC
LCS	VOCs/SVOCs	09042233	Trichloroethene	80.0	%REC
LCS	VOCs/SVOCs	09042240	Bromodichloromethane	80.0	%REC
LCS	VOCs/SVOCs	09042255	2,4-Dinitrotoluene	80.0	%REC
LCS	VOCs/SVOCs	09052306	1,2,4-Trichlorobenzene	80.0	%REC
LCS	VOCs/SVOCs	09052306	1,4-Dichlorobenzene	80.0	%REC
LCS	VOCs/SVOCs	09072444	2-Chlorophenol	80.0	%REC
LCS	VOCs/SVOCs	09082511	Carbon Tetrachloride	80.0	%REC
LCS	VOCs/SVOCs	09082511	Phenol	80.0	%REC
LCS	VOCs/SVOCs	09112724	Acenaphthene	80.0	%REC
LCS	VOCs/SVOCs	09012069	Isophorone	80.1	%REC
LCS	VOCs/SVOCs	09042219	Butylbenzylphthalate	80.5	%REC
LCS	VOCs/SVOCs	09042240	1,1,1-Trichloroethane	81.0	%REC
LCS	VOCs/SVOCs	09042240	Trichloroethene	81.0	%REC
LCS	VOCs/SVOCs	09042253	1,1-Dichloroethene	81.0	%REC
LCS	VOCs/SVOCs	09042253	1,3-Dichlorobenzene	81.0	%REC
LCS	VOCs/SVOCs	09042255	2,4,6-Trichlorophenol	81.0	%REC
LCS	VOCs/SVOCs	09042255	2-Chlorophenol	81.0	%REC
LCS	VOCs/SVOCs	09042255	4-Chloro-3-Methylphenol	81.0	%REC
LCS	VOCs/SVOCs	09052332	1,3-Dichlorobenzene	81.0	%REC
LCS	VOCs/SVOCs	09062411	1,1,1-Trichloroethane	81.0	%REC
LCS	VOCs/SVOCs	09062411	Carbon Tetrachloride	81.0	%REC
LCS	VOCs/SVOCs	09072444	Anthracene	81.0	%REC
LCS	VOCs/SVOCs	09102658	Acenaphthene	81.0	%REC
LCS	VOCs/SVOCs	09102658	Anthracene	81.0	%REC
LCS	VOCs/SVOCs	09102658	Pyrene	81.0	%REC
LCS	VOCs/SVOCs	09102658	Trans-1,2-Dichloroethene	81.0	%REC
LCS	VOCs/SVOCs	09112699	4-Chloro-3-Methylphenol	81.0	%REC
LCS	VOCs/SVOCs	09012069	2-Chlorophenol	81.1	%REC
LCS	VOCs/SVOCs	09042219	2,4-Dinitrotoluene	81.4	%REC
LCS	VOCs/SVOCs	09012069	4-Chloro-3-Methylphenol	82.0	%REC
LCS	VOCs/SVOCs	09012069	Isophorone	82.0	%REC
LCS	VOCs/SVOCs	09022131	1,3-Dichlorobenzene	82.0	%REC
LCS	VOCs/SVOCs	09022131	Carbon Tetrachloride	82.0	%REC
LCS	VOCs/SVOCs	09042233	1,1,1-Trichloroethane	82.0	%REC
LCS	VOCs/SVOCs	09042233	1,2-Dichloropropane	82.0	%REC
LCS	VOCs/SVOCs	09042255	2-Chlorophenol	82.0	%REC
LCS	VOCs/SVOCs	09042255	4-Chloro-3-Methylphenol	82.0	%REC
LCS	VOCs/SVOCs	09052281	Bromodichloromethane	82.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09062411	1,1-Dichloroethene	82.0	%REC
LCS	VOCs/SVOCs	09062411	Toluene	82.0	%REC
LCS	VOCs/SVOCs	09072444	Bromodichloromethane	82.0	%REC
LCS	VOCs/SVOCs	09072444	Pyrene	82.0	%REC
LCS	VOCs/SVOCs	09082511	1,3-Dichlorobenzene	82.0	%REC
LCS	VOCs/SVOCs	09082511	Acenaphthene	82.0	%REC
LCS	VOCs/SVOCs	09102658	Phenol	82.0	%REC
LCS	VOCs/SVOCs	09012069	4-Chloro-3-Methylphenol	82.2	%REC
LCS	VOCs/SVOCs	09012069	N-Nitrosodipropylamine	83.0	%REC
LCS	VOCs/SVOCs	09042233	1,3-Dichlorobenzene	83.0	%REC
LCS	VOCs/SVOCs	09042233	Chlorobenzene	83.0	%REC
LCS	VOCs/SVOCs	09042233	Methylene Chloride	83.0	%REC
LCS	VOCs/SVOCs	09042240	Benzene	83.0	%REC
LCS	VOCs/SVOCs	09042240	Trans-1,2-Dichloroethene	83.0	%REC
LCS	VOCs/SVOCs	09052281	1,2-Dichloropropane	83.0	%REC
LCS	VOCs/SVOCs	09052281	1,3-Dichlorobenzene	83.0	%REC
LCS	VOCs/SVOCs	09052281	Bromodichloromethane	83.0	%REC
LCS	VOCs/SVOCs	09072444	1,2-Dichloropropane	83.0	%REC
LCS	VOCs/SVOCs	09072444	Anthracene	83.0	%REC
LCS	VOCs/SVOCs	09072444	Phenol	83.0	%REC
LCS	VOCs/SVOCs	09072444	Pyrene	83.0	%REC
LCS	VOCs/SVOCs	09082511	Carbon Tetrachloride	83.0	%REC
LCS	VOCs/SVOCs	09082511	Tetrachloroethene	83.0	%REC
LCS	VOCs/SVOCs	09082527	4-Chloro-3-Methylphenol	83.0	%REC
LCS	VOCs/SVOCs	09082527	Acenaphthene	83.0	%REC
LCS	VOCs/SVOCs	09102658	2,4,6-Trichlorophenol	83.0	%REC
LCS	VOCs/SVOCs	09102658	4-Chloro-3-Methylphenol	83.0	%REC
LCS	VOCs/SVOCs	09102658	N-Nitrosodi-N-Propylamine	83.0	%REC
LCS	VOCs/SVOCs	09102658	N-Nitrosodi-N-Propylamine	83.0	%REC
LCS	VOCs/SVOCs	09112724	Phenol	83.0	%REC
LCS	VOCs/SVOCs	09012069	N-Nitrosodipropylamine	83.1	%REC
LCS	VOCs/SVOCs	09022131	Ethylbenzene	84.0	%REC
LCS	VOCs/SVOCs	09022131	Tetrachloroethene	84.0	%REC
LCS	VOCs/SVOCs	09042233	Benzene	84.0	%REC
LCS	VOCs/SVOCs	09042233	Ethylbenzene	84.0	%REC
LCS	VOCs/SVOCs	09042233	Tetrachloroethene	84.0	%REC
LCS	VOCs/SVOCs	09042233	Toluene	84.0	%REC
LCS	VOCs/SVOCs	09042233	Trichloroethene	84.0	%REC
LCS	VOCs/SVOCs	09042240	1,2-Dichloropropane	84.0	%REC
LCS	VOCs/SVOCs	09042240	1,3-Dichlorobenzene	84.0	%REC
LCS	VOCs/SVOCs	09042240	Chlorobenzene	84.0	%REC
LCS	VOCs/SVOCs	09042253	Bromodichloromethane	84.0	%REC
LCS	VOCs/SVOCs	09052281	1,2-Dichloropropane	84.0	%REC
LCS	VOCs/SVOCs	09052293	1,2-Dichloropropane	84.0	%REC
LCS	VOCs/SVOCs	09052293	1,3-Dichlorobenzene	84.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09052332	1,1-Dichloroethene	84.0	%REC
LCS	VOCs/SVOCs	09052332	Toluene	84.0	%REC
LCS	VOCs/SVOCs	09062411	Benzene	84.0	%REC
LCS	VOCs/SVOCs	09062411	Ethylbenzene	84.0	%REC
LCS	VOCs/SVOCs	09062411	Trichloroethene	84.0	%REC
LCS	VOCs/SVOCs	09072444	4-Chloro-3-Methylphenol	84.0	%REC
LCS	VOCs/SVOCs	09072444	Chlorobenzene	84.0	%REC
LCS	VOCs/SVOCs	09082511	1,1,1-Trichloroethane	84.0	%REC
LCS	VOCs/SVOCs	09082511	1,3-Dichlorobenzene	84.0	%REC
LCS	VOCs/SVOCs	09082511	Toluene	84.0	%REC
LCS	VOCs/SVOCs	09082511	Trans-1,2-Dichloroethene	84.0	%REC
LCS	VOCs/SVOCs	09112724	Acenaphthene	84.0	%REC
LCS	VOCs/SVOCs	09112724	Pyrene	84.0	%REC
LCS	VOCs/SVOCs	09122754	1,1-Dichloroethene	84.0	%REC
LCS	VOCs/SVOCs	09012069	Fluorene	84.2	%REC
LCS	VOCs/SVOCs	09022131	Trichloroethene	85.0	%REC
LCS	VOCs/SVOCs	09032166	Tetrachloroethene	85.0	%REC
LCS	VOCs/SVOCs	09042233	Carbon Tetrachloride	85.0	%REC
LCS	VOCs/SVOCs	09042233	Tetrachloroethene	85.0	%REC
LCS	VOCs/SVOCs	09042233	Trans-1,2-Dichloroethene	85.0	%REC
LCS	VOCs/SVOCs	09042240	Carbon Tetrachloride	85.0	%REC
LCS	VOCs/SVOCs	09042240	Tetrachloroethene	85.0	%REC
LCS	VOCs/SVOCs	09042253	1,2-Dichloropropane	85.0	%REC
LCS	VOCs/SVOCs	09052281	1,3-Dichlorobenzene	85.0	%REC
LCS	VOCs/SVOCs	09052281	Chlorobenzene	85.0	%REC
LCS	VOCs/SVOCs	09052281	Methylene Chloride	85.0	%REC
LCS	VOCs/SVOCs	09052281	Methylene Chloride	85.0	%REC
LCS	VOCs/SVOCs	09052293	Bromodichloromethane	85.0	%REC
LCS	VOCs/SVOCs	09062411	Chloroform	85.0	%REC
LCS	VOCs/SVOCs	09072444	N-Nitrosodi-N-Propylamine	85.0	%REC
LCS	VOCs/SVOCs	09082511	1,1,1-Trichloroethane	85.0	%REC
LCS	VOCs/SVOCs	09082511	Benzene	85.0	%REC
LCS	VOCs/SVOCs	09082511	Bromodichloromethane	85.0	%REC
LCS	VOCs/SVOCs	09082511	Carbon Tetrachloride	85.0	%REC
LCS	VOCs/SVOCs	09082511	Ethylbenzene	85.0	%REC
LCS	VOCs/SVOCs	09082511	Trans-1,2-Dichloroethene	85.0	%REC
LCS	VOCs/SVOCs	09082527	4-Nitrophenol	85.0	%REC
LCS	VOCs/SVOCs	09092584	1,2-Dichloropropane	85.0	%REC
LCS	VOCs/SVOCs	09102658	2-Chlorophenol	85.0	%REC
LCS	VOCs/SVOCs	09102658	Pyrene	85.0	%REC
LCS	VOCs/SVOCs	09102668	1,3-Dichlorobenzene	85.0	%REC
LCS	VOCs/SVOCs	09112685	Trans-1,2-Dichloroethene	85.0	%REC
LCS	VOCs/SVOCs	09112724	4-Nitrophenol	85.0	%REC
LCS	VOCs/SVOCs	09122754	Methylene Chloride	85.0	%REC
LCS	VOCs/SVOCs	09012069	2,6-Dinitrotoluene	85.5	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09012069	Indeno(1,2,3-Cd)Pyrene	86.0	%REC
LCS	VOCs/SVOCs	09022131	1,1,1-Trichloroethane	86.0	%REC
LCS	VOCs/SVOCs	09042233	1,1-Dichloroethene	86.0	%REC
LCS	VOCs/SVOCs	09042240	Chloroform	86.0	%REC
LCS	VOCs/SVOCs	09042253	Trichloroethene	86.0	%REC
LCS	VOCs/SVOCs	09042255	1,1-Dichloroethene	86.0	%REC
LCS	VOCs/SVOCs	09052293	Chlorobenzene	86.0	%REC
LCS	VOCs/SVOCs	09052300	1,1-Dichloroethene	86.0	%REC
LCS	VOCs/SVOCs	09052332	Chlorobenzene	86.0	%REC
LCS	VOCs/SVOCs	09062411	1,2-Dichloropropane	86.0	%REC
LCS	VOCs/SVOCs	09062411	Bromodichloromethane	86.0	%REC
LCS	VOCs/SVOCs	09072444	2,4,6-Trichlorophenol	86.0	%REC
LCS	VOCs/SVOCs	09072455	Methylene Chloride	86.0	%REC
LCS	VOCs/SVOCs	09082511	2-Chlorophenol	86.0	%REC
LCS	VOCs/SVOCs	09082511	Chlorobenzene	86.0	%REC
LCS	VOCs/SVOCs	09082511	Phenol	86.0	%REC
LCS	VOCs/SVOCs	09082511	Toluene	86.0	%REC
LCS	VOCs/SVOCs	09082511	Trans-1,2-Dichloroethene	86.0	%REC
LCS	VOCs/SVOCs	09082511	Trichloroethene	86.0	%REC
LCS	VOCs/SVOCs	09102645	Bromodichloromethane	86.0	%REC
LCS	VOCs/SVOCs	09112685	1,1,1-Trichloroethane	86.0	%REC
LCS	VOCs/SVOCs	09112699	2,4,6-Trichlorophenol	86.0	%REC
LCS	VOCs/SVOCs	09112724	Pyrene	86.0	%REC
LCS	VOCs/SVOCs	09122754	Carbon Tetrachloride	86.0	%REC
LCS	VOCs/SVOCs	09012069	2,4-Dinitrotoluene	86.6	%REC
LCS	VOCs/SVOCs	09042219	2-Methyl-4,6-Dinitrophenol	86.7	%REC
LCS	VOCs/SVOCs	09012069	2,4,6-Trichlorophenol	87.0	%REC
LCS	VOCs/SVOCs	09022131	Chlorobenzene	87.0	%REC
LCS	VOCs/SVOCs	09032166	1,1-Dichloroethene	87.0	%REC
LCS	VOCs/SVOCs	09042233	1,2-Dichloropropane	87.0	%REC
LCS	VOCs/SVOCs	09042233	1,3-Dichlorobenzene	87.0	%REC
LCS	VOCs/SVOCs	09042233	Benzene	87.0	%REC
LCS	VOCs/SVOCs	09042233	Bromodichloromethane	87.0	%REC
LCS	VOCs/SVOCs	09042233	Chlorobenzene	87.0	%REC
LCS	VOCs/SVOCs	09042233	Chloroform	87.0	%REC
LCS	VOCs/SVOCs	09042233	Ethylbenzene	87.0	%REC
LCS	VOCs/SVOCs	09042240	Ethylbenzene	87.0	%REC
LCS	VOCs/SVOCs	09042240	Toluene	87.0	%REC
LCS	VOCs/SVOCs	09042253	Toluene	87.0	%REC
LCS	VOCs/SVOCs	09042255	1,1-Dichloroethene	87.0	%REC
LCS	VOCs/SVOCs	09052306	1,3-Dichlorobenzene	87.0	%REC
LCS	VOCs/SVOCs	09052332	Trichloroethene	87.0	%REC
LCS	VOCs/SVOCs	09062411	Methylene Chloride	87.0	%REC
LCS	VOCs/SVOCs	09072444	N-Nitrosodi-N-Propylamine	87.0	%REC
LCS	VOCs/SVOCs	09072455	Tetrachloroethene	87.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09082511	1,1,1-Trichloroethane	87.0	%REC
LCS	VOCs/SVOCs	09082511	Bromodichloromethane	87.0	%REC
LCS	VOCs/SVOCs	09082511	Chlorobenzene	87.0	%REC
LCS	VOCs/SVOCs	09082511	Ethylbenzene	87.0	%REC
LCS	VOCs/SVOCs	09082511	Pyrene	87.0	%REC
LCS	VOCs/SVOCs	09082511	Pyrene	87.0	%REC
LCS	VOCs/SVOCs	09082511	Tetrachloroethene	87.0	%REC
LCS	VOCs/SVOCs	09082511	Toluene	87.0	%REC
LCS	VOCs/SVOCs	09082511	Trichloroethene	87.0	%REC
LCS	VOCs/SVOCs	09082527	2,4,6-Trichlorophenol	87.0	%REC
LCS	VOCs/SVOCs	09082527	2,4-Dinitrotoluene	87.0	%REC
LCS	VOCs/SVOCs	09082527	Pyrene	87.0	%REC
LCS	VOCs/SVOCs	09092584	1,2-Dichloropropane	87.0	%REC
LCS	VOCs/SVOCs	09102658	Pentachlorophenol	87.0	%REC
LCS	VOCs/SVOCs	09102668	Chlorobenzene	87.0	%REC
LCS	VOCs/SVOCs	09112685	Trans-1,2-Dichloroethene	87.0	%REC
LCS	VOCs/SVOCs	09112724	2-Chlorophenol	87.0	%REC
LCS	VOCs/SVOCs	09122754	1,2-Dichloropropane	87.0	%REC
LCS	VOCs/SVOCs	09012069	Benzo(Ghi)Perylene	87.6	%REC
LCS	VOCs/SVOCs	09012069	Fluorene	87.6	%REC
LCS	VOCs/SVOCs	09012069	2,6-Dinitrotoluene	87.8	%REC
LCS	VOCs/SVOCs	09032134	2,4,6-Trichlorophenol	88.0	%REC
LCS	VOCs/SVOCs	09032166	Carbon Tetrachloride	88.0	%REC
LCS	VOCs/SVOCs	09032166	Chlorobenzene	88.0	%REC
LCS	VOCs/SVOCs	09032166	Chloroform	88.0	%REC
LCS	VOCs/SVOCs	09032166	Trans-1,2-Dichloroethene	88.0	%REC
LCS	VOCs/SVOCs	09042233	1,1,1-Trichloroethane	88.0	%REC
LCS	VOCs/SVOCs	09042233	Toluene	88.0	%REC
LCS	VOCs/SVOCs	09042233	Trans-1,2-Dichloroethene	88.0	%REC
LCS	VOCs/SVOCs	09042253	Benzene	88.0	%REC
LCS	VOCs/SVOCs	09042253	Chlorobenzene	88.0	%REC
LCS	VOCs/SVOCs	09042253	Tetrachloroethene	88.0	%REC
LCS	VOCs/SVOCs	09042255	1,1-Dichloroethene	88.0	%REC
LCS	VOCs/SVOCs	09052281	Chlorobenzene	88.0	%REC
LCS	VOCs/SVOCs	09052293	1,3-Dichlorobenzene	88.0	%REC
LCS	VOCs/SVOCs	09052300	Carbon Tetrachloride	88.0	%REC
LCS	VOCs/SVOCs	09052332	Benzene	88.0	%REC
LCS	VOCs/SVOCs	09052332	Ethylbenzene	88.0	%REC
LCS	VOCs/SVOCs	09052341	Bromodichloromethane	88.0	%REC
LCS	VOCs/SVOCs	09072444	Ethylbenzene	88.0	%REC
LCS	VOCs/SVOCs	09072444	Methylene Chloride	88.0	%REC
LCS	VOCs/SVOCs	09072444	Trichloroethene	88.0	%REC
LCS	VOCs/SVOCs	09072455	1,3-Dichlorobenzene	88.0	%REC
LCS	VOCs/SVOCs	09072455	Carbon Tetrachloride	88.0	%REC
LCS	VOCs/SVOCs	09082511	1,1,1-Trichloroethane	88.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09082511	1,2-Dichloropropane	88.0	%REC
LCS	VOCs/SVOCs	09082511	Chloroform	88.0	%REC
LCS	VOCs/SVOCs	09082511	Ethylbenzene	88.0	%REC
LCS	VOCs/SVOCs	09082511	N-Nitrosodi-N-Propylamine	88.0	%REC
LCS	VOCs/SVOCs	09082527	1,1-Dichloroethene	88.0	%REC
LCS	VOCs/SVOCs	09082527	Benzene	88.0	%REC
LCS	VOCs/SVOCs	09082527	Trichloroethene	88.0	%REC
LCS	VOCs/SVOCs	09092584	1,2-Dichloropropane	88.0	%REC
LCS	VOCs/SVOCs	09092584	Bromodichloromethane	88.0	%REC
LCS	VOCs/SVOCs	09102656	Trans-1,2-Dichloroethene	88.0	%REC
LCS	VOCs/SVOCs	09102658	4-Chloro-3-Methylphenol	88.0	%REC
LCS	VOCs/SVOCs	09102658	Anthracene	88.0	%REC
LCS	VOCs/SVOCs	09102658	Phenol	88.0	%REC
LCS	VOCs/SVOCs	09102658	Trichloroethene	88.0	%REC
LCS	VOCs/SVOCs	09102668	1,2-Dichloropropane	88.0	%REC
LCS	VOCs/SVOCs	09102668	Bromodichloromethane	88.0	%REC
LCS	VOCs/SVOCs	09102668	Toluene	88.0	%REC
LCS	VOCs/SVOCs	09112685	1,1,1-Trichloroethane	88.0	%REC
LCS	VOCs/SVOCs	09112685	Benzene	88.0	%REC
LCS	VOCs/SVOCs	09112685	Chloroform	88.0	%REC
LCS	VOCs/SVOCs	09112685	Chloroform	88.0	%REC
LCS	VOCs/SVOCs	09112699	1,3-Dichlorobenzene	88.0	%REC
LCS	VOCs/SVOCs	09112699	2,4-Dinitrotoluene	88.0	%REC
LCS	VOCs/SVOCs	09112699	Methylene Chloride	88.0	%REC
LCS	VOCs/SVOCs	09112724	Anthracene	88.0	%REC
LCS	VOCs/SVOCs	09012069	Anthracene	88.1	%REC
LCS	VOCs/SVOCs	09012069	Pyrene	88.2	%REC
LCS	VOCs/SVOCs	09012069	Diethylphthalate	88.3	%REC
LCS	VOCs/SVOCs	09012069	Pyrene	88.5	%REC
LCS	VOCs/SVOCs	09012069	Dibenzo(A,H)Anthracene	88.8	%REC
LCS	VOCs/SVOCs	09042219	Aniline	88.8	%REC
LCS	VOCs/SVOCs	09012069	2,4-Dichlorophenol	88.9	%REC
LCS	VOCs/SVOCs	09012069	2,4-Dichlorophenol	89.0	%REC
LCS	VOCs/SVOCs	09022131	1,1-Dichloroethene	89.0	%REC
LCS	VOCs/SVOCs	09022131	Bromodichloromethane	89.0	%REC
LCS	VOCs/SVOCs	09022131	Carbon Tetrachloride	89.0	%REC
LCS	VOCs/SVOCs	09032134	Pyrene	89.0	%REC
LCS	VOCs/SVOCs	09032166	1,1,1-Trichloroethane	89.0	%REC
LCS	VOCs/SVOCs	09042233	Methylene Chloride	89.0	%REC
LCS	VOCs/SVOCs	09042253	Chloroform	89.0	%REC
LCS	VOCs/SVOCs	09042253	Trans-1,2-Dichloroethene	89.0	%REC
LCS	VOCs/SVOCs	09042255	Phenol	89.0	%REC
LCS	VOCs/SVOCs	09052281	Chloroform	89.0	%REC
LCS	VOCs/SVOCs	09052281	Trans-1,2-Dichloroethene	89.0	%REC
LCS	VOCs/SVOCs	09052281	Trans-1,2-Dichloroethene	89.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09052293	1,2-Dichloropropane	89.0	%REC
LCS	VOCs/SVOCs	09052293	Benzene	89.0	%REC
LCS	VOCs/SVOCs	09052306	Acenaphthene	89.0	%REC
LCS	VOCs/SVOCs	09052306	Chlorobenzene	89.0	%REC
LCS	VOCs/SVOCs	09052341	Tetrachloroethene	89.0	%REC
LCS	VOCs/SVOCs	09052341	Trans-1,2-Dichloroethene	89.0	%REC
LCS	VOCs/SVOCs	09062411	Trans-1,2-Dichloroethene	89.0	%REC
LCS	VOCs/SVOCs	09082511	Anthracene	89.0	%REC
LCS	VOCs/SVOCs	09082511	Benzene	89.0	%REC
LCS	VOCs/SVOCs	09082511	Bromodichloromethane	89.0	%REC
LCS	VOCs/SVOCs	09082511	Chloroform	89.0	%REC
LCS	VOCs/SVOCs	09082511	Ethylbenzene	89.0	%REC
LCS	VOCs/SVOCs	09082511	N-Nitrosodi-N-Propylamine	89.0	%REC
LCS	VOCs/SVOCs	09082511	Tetrachloroethene	89.0	%REC
LCS	VOCs/SVOCs	09082511	Tetrachloroethene	89.0	%REC
LCS	VOCs/SVOCs	09082511	Toluene	89.0	%REC
LCS	VOCs/SVOCs	09082511	Trans-1,2-Dichloroethene	89.0	%REC
LCS	VOCs/SVOCs	09082527	1,2-Dichloropropane	89.0	%REC
LCS	VOCs/SVOCs	09082527	Chlorobenzene	89.0	%REC
LCS	VOCs/SVOCs	09082527	Methylene Chloride	89.0	%REC
LCS	VOCs/SVOCs	09092584	1,3-Dichlorobenzene	89.0	%REC
LCS	VOCs/SVOCs	09092584	Methylene Chloride	89.0	%REC
LCS	VOCs/SVOCs	09102650	Methylene Chloride	89.0	%REC
LCS	VOCs/SVOCs	09102658	1,2-Dichloropropane	89.0	%REC
LCS	VOCs/SVOCs	09112685	Benzene	89.0	%REC
LCS	VOCs/SVOCs	09112685	Bromodichloromethane	89.0	%REC
LCS	VOCs/SVOCs	09112685	Bromodichloromethane	89.0	%REC
LCS	VOCs/SVOCs	09112685	Carbon Tetrachloride	89.0	%REC
LCS	VOCs/SVOCs	09112685	Trichloroethene	89.0	%REC
LCS	VOCs/SVOCs	09112685	Trichloroethene	89.0	%REC
LCS	VOCs/SVOCs	09112699	4-Nitrophenol	89.0	%REC
LCS	VOCs/SVOCs	09112699	Benzene	89.0	%REC
LCS	VOCs/SVOCs	09112699	Carbon Tetrachloride	89.0	%REC
LCS	VOCs/SVOCs	09122754	Trans-1,2-Dichloroethene	89.0	%REC
LCS	VOCs/SVOCs	09012069	Chrysene	89.4	%REC
LCS	VOCs/SVOCs	09042219	Trans-1,2-Dichloroethylene	89.6	%REC
LCS	VOCs/SVOCs	09012069	1,2,4-Trichlorobenzene	89.8	%REC
LCS	VOCs/SVOCs	09012069	2,4,6-Trichlorophenol	89.8	%REC
LCS	VOCs/SVOCs	09012069	Hexachlorobutadiene	89.8	%REC
LCS	VOCs/SVOCs	09012069	2-Methyl-4,6-Dinitrophenol	89.9	%REC
LCS	VOCs/SVOCs	09012069	Di-N-Butylphthalate	90.0	%REC
LCS	VOCs/SVOCs	09012069	Hexachlorobenzene	90.0	%REC
LCS	VOCs/SVOCs	09032134	2,4,6-Trichlorophenol	90.0	%REC
LCS	VOCs/SVOCs	09032166	Bromodichloromethane	90.0	%REC
LCS	VOCs/SVOCs	09042253	Ethylbenzene	90.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09042255	Methylene Chloride	90.0	%REC
LCS	VOCs/SVOCs	09042255	Phenol	90.0	%REC
LCS	VOCs/SVOCs	09052281	Benzene	90.0	%REC
LCS	VOCs/SVOCs	09052293	1,2-Dichloropropane	90.0	%REC
LCS	VOCs/SVOCs	09052293	Trans-1,2-Dichloroethene	90.0	%REC
LCS	VOCs/SVOCs	09052300	1,1,1-Trichloroethane	90.0	%REC
LCS	VOCs/SVOCs	09052306	Trichloroethene	90.0	%REC
LCS	VOCs/SVOCs	09052341	Ethylbenzene	90.0	%REC
LCS	VOCs/SVOCs	09052341	Trichloroethene	90.0	%REC
LCS	VOCs/SVOCs	09072444	Benzene	90.0	%REC
LCS	VOCs/SVOCs	09072444	Chloroform	90.0	%REC
LCS	VOCs/SVOCs	09072444	Tetrachloroethene	90.0	%REC
LCS	VOCs/SVOCs	09072455	Trichloroethene	90.0	%REC
LCS	VOCs/SVOCs	09082511	4-Chloro-3-Methylphenol	90.0	%REC
LCS	VOCs/SVOCs	09082511	Anthracene	90.0	%REC
LCS	VOCs/SVOCs	09082511	Benzene	90.0	%REC
LCS	VOCs/SVOCs	09082511	Bromodichloromethane	90.0	%REC
LCS	VOCs/SVOCs	09082511	Chloroform	90.0	%REC
LCS	VOCs/SVOCs	09082511	Trichloroethene	90.0	%REC
LCS	VOCs/SVOCs	09082527	Bromodichloromethane	90.0	%REC
LCS	VOCs/SVOCs	09082527	Ethylbenzene	90.0	%REC
LCS	VOCs/SVOCs	09082527	Trans-1,2-Dichloroethene	90.0	%REC
LCS	VOCs/SVOCs	09092584	1,2-Dichloropropane	90.0	%REC
LCS	VOCs/SVOCs	09092584	Bromodichloromethane	90.0	%REC
LCS	VOCs/SVOCs	09092584	Methylene Chloride	90.0	%REC
LCS	VOCs/SVOCs	09102658	Benzene	90.0	%REC
LCS	VOCs/SVOCs	09102668	1,3-Dichlorobenzene	90.0	%REC
LCS	VOCs/SVOCs	09102668	Benzene	90.0	%REC
LCS	VOCs/SVOCs	09112685	1,1-Dichloroethene	90.0	%REC
LCS	VOCs/SVOCs	09112699	1,1-Dichloroethene	90.0	%REC
LCS	VOCs/SVOCs	09112699	Chloroform	90.0	%REC
LCS	VOCs/SVOCs	09012069	2,4,5-Trichlorophenol	90.1	%REC
LCS	VOCs/SVOCs	09012069	Dimethylphthalate	90.1	%REC
LCS	VOCs/SVOCs	09022120	Methylene Chloride	91.0	%REC
LCS	VOCs/SVOCs	09022131	Toluene	91.0	%REC
LCS	VOCs/SVOCs	09022131	Trichloroethene	91.0	%REC
LCS	VOCs/SVOCs	09032134	Pyrene	91.0	%REC
LCS	VOCs/SVOCs	09042219	1,2-Dichloroethane	91.0	%REC
LCS	VOCs/SVOCs	09042233	1,1-Dichloroethene	91.0	%REC
LCS	VOCs/SVOCs	09042233	Methylene Chloride	91.0	%REC
LCS	VOCs/SVOCs	09042240	Methylene Chloride	91.0	%REC
LCS	VOCs/SVOCs	09042255	1,1-Dichloroethene	91.0	%REC
LCS	VOCs/SVOCs	09052281	Benzene	91.0	%REC
LCS	VOCs/SVOCs	09052293	Toluene	91.0	%REC
LCS	VOCs/SVOCs	09052300	Trans-1,2-Dichloroethene	91.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09052306	Ethylbenzene	91.0	%REC
LCS	VOCs/SVOCs	09052306	Tetrachloroethene	91.0	%REC
LCS	VOCs/SVOCs	09052306	Toluene	91.0	%REC
LCS	VOCs/SVOCs	09052341	Methylene Chloride	91.0	%REC
LCS	VOCs/SVOCs	09062399	1,3-Dichlorobenzene	91.0	%REC
LCS	VOCs/SVOCs	09062399	Chlorobenzene	91.0	%REC
LCS	VOCs/SVOCs	09072444	2,4,6-Trichlorophenol	91.0	%REC
LCS	VOCs/SVOCs	09072444	Toluene	91.0	%REC
LCS	VOCs/SVOCs	09072455	1,1,1-Trichloroethane	91.0	%REC
LCS	VOCs/SVOCs	09072455	Methylene Chloride	91.0	%REC
LCS	VOCs/SVOCs	09072455	Trans-1,2-Dichloroethene	91.0	%REC
LCS	VOCs/SVOCs	09082511	1,2-Dichloropropane	91.0	%REC
LCS	VOCs/SVOCs	09082511	Benzene	91.0	%REC
LCS	VOCs/SVOCs	09082511	Carbon Tetrachloride	91.0	%REC
LCS	VOCs/SVOCs	09082511	Chlorobenzene	91.0	%REC
LCS	VOCs/SVOCs	09082511	Chlorobenzene	91.0	%REC
LCS	VOCs/SVOCs	09082511	Trichloroethene	91.0	%REC
LCS	VOCs/SVOCs	09082527	Bromodichloromethane	91.0	%REC
LCS	VOCs/SVOCs	09092584	1,3-Dichlorobenzene	91.0	%REC
LCS	VOCs/SVOCs	09102645	Toluene	91.0	%REC
LCS	VOCs/SVOCs	09102656	Trichloroethene	91.0	%REC
LCS	VOCs/SVOCs	09102658	1,3-Dichlorobenzene	91.0	%REC
LCS	VOCs/SVOCs	09102658	Ethylbenzene	91.0	%REC
LCS	VOCs/SVOCs	09102668	Bromodichloromethane	91.0	%REC
LCS	VOCs/SVOCs	09102668	Chlorobenzene	91.0	%REC
LCS	VOCs/SVOCs	09102668	Ethylbenzene	91.0	%REC
LCS	VOCs/SVOCs	09102668	Methylene Chloride	91.0	%REC
LCS	VOCs/SVOCs	09112685	1,3-Dichlorobenzene	91.0	%REC
LCS	VOCs/SVOCs	09112685	Carbon Tetrachloride	91.0	%REC
LCS	VOCs/SVOCs	09112685	Chlorobenzene	91.0	%REC
LCS	VOCs/SVOCs	09112685	Chlorobenzene	91.0	%REC
LCS	VOCs/SVOCs	09112699	Methylene Chloride	91.0	%REC
LCS	VOCs/SVOCs	09112724	2-Chlorophenol	91.0	%REC
LCS	VOCs/SVOCs	09112724	Anthracene	91.0	%REC
LCS	VOCs/SVOCs	09122754	1,1,1-Trichloroethane	91.0	%REC
LCS	VOCs/SVOCs	09012069	Naphthalene	91.1	%REC
LCS	VOCs/SVOCs	09012069	Bis(2-Ethylhexyl)Phthalate	91.3	%REC
LCS	VOCs/SVOCs	09012069	Butylbenzylphthalate	91.4	%REC
LCS	VOCs/SVOCs	09042219	1,2-Dichloropropane	91.4	%REC
LCS	VOCs/SVOCs	09012069	Chrysene	91.5	%REC
LCS	VOCs/SVOCs	09042219	Chloroform	91.6	%REC
LCS	VOCs/SVOCs	09012069	2,4-Dinitrotoluene	91.9	%REC
LCS	VOCs/SVOCs	09022131	Chloroform	92.0	%REC
LCS	VOCs/SVOCs	09022131	Ethylbenzene	92.0	%REC
LCS	VOCs/SVOCs	09022131	Trans-1,2-Dichloroethene	92.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09032134	Anthracene	92.0	%REC
LCS	VOCs/SVOCs	09042219	Benzene	92.0	%REC
LCS	VOCs/SVOCs	09042233	Benzene	92.0	%REC
LCS	VOCs/SVOCs	09042233	Bromodichloromethane	92.0	%REC
LCS	VOCs/SVOCs	09042255	Methylene Chloride	92.0	%REC
LCS	VOCs/SVOCs	09052281	1,1-Dichloroethene	92.0	%REC
LCS	VOCs/SVOCs	09052281	Chloroform	92.0	%REC
LCS	VOCs/SVOCs	09052293	1,3-Dichlorobenzene	92.0	%REC
LCS	VOCs/SVOCs	09052293	Chloroform	92.0	%REC
LCS	VOCs/SVOCs	09052293	Trans-1,2-Dichloroethene	92.0	%REC
LCS	VOCs/SVOCs	09052293	Trans-1,2-Dichloroethene	92.0	%REC
LCS	VOCs/SVOCs	09052300	1,1-Dichloroethene	92.0	%REC
LCS	VOCs/SVOCs	09052300	1,2-Dichloropropane	92.0	%REC
LCS	VOCs/SVOCs	09052300	Trichloroethene	92.0	%REC
LCS	VOCs/SVOCs	09052332	1,1,1-Trichloroethane	92.0	%REC
LCS	VOCs/SVOCs	09052332	Trans-1,2-Dichloroethene	92.0	%REC
LCS	VOCs/SVOCs	09052341	1,1,1-Trichloroethane	92.0	%REC
LCS	VOCs/SVOCs	09052341	Tetrachloroethene	92.0	%REC
LCS	VOCs/SVOCs	09062411	1,3-Dichlorobenzene	92.0	%REC
LCS	VOCs/SVOCs	09062411	Chlorobenzene	92.0	%REC
LCS	VOCs/SVOCs	09082511	1,2-Dichloropropane	92.0	%REC
LCS	VOCs/SVOCs	09082527	1,3-Dichlorobenzene	92.0	%REC
LCS	VOCs/SVOCs	09082527	Anthracene	92.0	%REC
LCS	VOCs/SVOCs	09082527	Bromodichloromethane	92.0	%REC
LCS	VOCs/SVOCs	09082527	Carbon Tetrachloride	92.0	%REC
LCS	VOCs/SVOCs	09082527	Chloroform	92.0	%REC
LCS	VOCs/SVOCs	09092584	Toluene	92.0	%REC
LCS	VOCs/SVOCs	09102658	Chlorobenzene	92.0	%REC
LCS	VOCs/SVOCs	09102668	Chloroform	92.0	%REC
LCS	VOCs/SVOCs	09102668	Tetrachloroethene	92.0	%REC
LCS	VOCs/SVOCs	09102668	Trans-1,2-Dichloroethene	92.0	%REC
LCS	VOCs/SVOCs	09112718	1,3-Dichlorobenzene	92.0	%REC
LCS	VOCs/SVOCs	09112724	N-Nitrosodi-N-Propylamine	92.0	%REC
LCS	VOCs/SVOCs	09122754	Bromodichloromethane	92.0	%REC
LCS	VOCs/SVOCs	09122754	Chlorobenzene	92.0	%REC
LCS	VOCs/SVOCs	09122754	Chloroform	92.0	%REC
LCS	VOCs/SVOCs	09122754	Ethylbenzene	92.0	%REC
LCS	VOCs/SVOCs	09012069	1,2-Dichlorobenzene	92.2	%REC
LCS	VOCs/SVOCs	09012069	Anthracene	92.2	%REC
LCS	VOCs/SVOCs	09042219	1,1,2,2-Tetrachloroethane	92.2	%REC
LCS	VOCs/SVOCs	09012069	1,4-Dichlorobenzene	92.4	%REC
LCS	VOCs/SVOCs	09042219	Toluene	92.7	%REC
LCS	VOCs/SVOCs	09042219	Ethylbenzene	92.9	%REC
LCS	VOCs/SVOCs	09012069	Benzo(A)Anthracene	93.0	%REC
LCS	VOCs/SVOCs	09022131	1,3-Dichlorobenzene	93.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09032134	2-Chlorophenol	93.0	%REC
LCS	VOCs/SVOCs	09032134	2-Chlorophenol	93.0	%REC
LCS	VOCs/SVOCs	09032134	Acenaphthene	93.0	%REC
LCS	VOCs/SVOCs	09032134	Acenaphthene	93.0	%REC
LCS	VOCs/SVOCs	09032134	Anthracene	93.0	%REC
LCS	VOCs/SVOCs	09042233	1,2-Dichloropropane	93.0	%REC
LCS	VOCs/SVOCs	09052281	1,1-Dichloroethene	93.0	%REC
LCS	VOCs/SVOCs	09052281	Toluene	93.0	%REC
LCS	VOCs/SVOCs	09052293	1,1-Dichloroethene	93.0	%REC
LCS	VOCs/SVOCs	09052300	1,3-Dichlorobenzene	93.0	%REC
LCS	VOCs/SVOCs	09052300	Toluene	93.0	%REC
LCS	VOCs/SVOCs	09052306	Acenaphthene	93.0	%REC
LCS	VOCs/SVOCs	09052306	Anthracene	93.0	%REC
LCS	VOCs/SVOCs	09052306	Bromodichloromethane	93.0	%REC
LCS	VOCs/SVOCs	09052306	Pyrene	93.0	%REC
LCS	VOCs/SVOCs	09052341	1,3-Dichlorobenzene	93.0	%REC
LCS	VOCs/SVOCs	09062399	Bromodichloromethane	93.0	%REC
LCS	VOCs/SVOCs	09062399	Methylene Chloride	93.0	%REC
LCS	VOCs/SVOCs	09072444	Trans-1,2-Dichloroethene	93.0	%REC
LCS	VOCs/SVOCs	09082511	1,1-Dichloroethene	93.0	%REC
LCS	VOCs/SVOCs	09082511	1,2-Dichloropropane	93.0	%REC
LCS	VOCs/SVOCs	09082511	Chloroform	93.0	%REC
LCS	VOCs/SVOCs	09082527	Carbon Tetrachloride	93.0	%REC
LCS	VOCs/SVOCs	09082527	Toluene	93.0	%REC
LCS	VOCs/SVOCs	09092581	Methylene Chloride	93.0	%REC
LCS	VOCs/SVOCs	09092582	Methylene Chloride	93.0	%REC
LCS	VOCs/SVOCs	09092584	1,1-Dichloroethene	93.0	%REC
LCS	VOCs/SVOCs	09092584	Benzene	93.0	%REC
LCS	VOCs/SVOCs	09092584	Chloroform	93.0	%REC
LCS	VOCs/SVOCs	09092584	Trichloroethene	93.0	%REC
LCS	VOCs/SVOCs	09102645	Carbon Tetrachloride	93.0	%REC
LCS	VOCs/SVOCs	09102645	Chloroform	93.0	%REC
LCS	VOCs/SVOCs	09102650	Tetrachloroethene	93.0	%REC
LCS	VOCs/SVOCs	09102650	Toluene	93.0	%REC
LCS	VOCs/SVOCs	09102668	Ethylbenzene	93.0	%REC
LCS	VOCs/SVOCs	09102668	Toluene	93.0	%REC
LCS	VOCs/SVOCs	09102668	Trichloroethene	93.0	%REC
LCS	VOCs/SVOCs	09112685	1,2-Dichloropropane	93.0	%REC
LCS	VOCs/SVOCs	09112685	1,2-Dichloropropane	93.0	%REC
LCS	VOCs/SVOCs	09112685	Methylene Chloride	93.0	%REC
LCS	VOCs/SVOCs	09112685	Methylene Chloride	93.0	%REC
LCS	VOCs/SVOCs	09122754	Benzene	93.0	%REC
LCS	VOCs/SVOCs	09012069	Butylbenzylphthalate	93.2	%REC
LCS	VOCs/SVOCs	09012069	Dimethylphthalate	93.4	%REC
LCS	VOCs/SVOCs	09042219	1,1,2-Trichloroethane	93.4	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09012069	1,2-Dichloroethane	93.6	%REC
LCS	VOCs/SVOCs	09012069	Trans-1,2-Dichloroethylene	93.7	%REC
LCS	VOCs/SVOCs	09012069	Diethylphthalate	93.8	%REC
LCS	VOCs/SVOCs	09022131	Chlorobenzene	94.0	%REC
LCS	VOCs/SVOCs	09032134	4-Chloro-3-Methylphenol	94.0	%REC
LCS	VOCs/SVOCs	09032166	Toluene	94.0	%REC
LCS	VOCs/SVOCs	09032166	Trichloroethene	94.0	%REC
LCS	VOCs/SVOCs	09042255	Tetrachloroethene	94.0	%REC
LCS	VOCs/SVOCs	09052293	1,2-Dichloropropane	94.0	%REC
LCS	VOCs/SVOCs	09052332	Carbon Tetrachloride	94.0	%REC
LCS	VOCs/SVOCs	09052341	1,2-Dichloropropane	94.0	%REC
LCS	VOCs/SVOCs	09052341	Carbon Tetrachloride	94.0	%REC
LCS	VOCs/SVOCs	09062399	Toluene	94.0	%REC
LCS	VOCs/SVOCs	09062399	Trichloroethene	94.0	%REC
LCS	VOCs/SVOCs	09072444	Pentachlorophenol	94.0	%REC
LCS	VOCs/SVOCs	09072455	Ethylbenzene	94.0	%REC
LCS	VOCs/SVOCs	09082499	1,3-Dichlorobenzene	94.0	%REC
LCS	VOCs/SVOCs	09082511	1,1-Dichloroethene	94.0	%REC
LCS	VOCs/SVOCs	09082511	2,4,6-Trichlorophenol	94.0	%REC
LCS	VOCs/SVOCs	09082527	Pentachlorophenol	94.0	%REC
LCS	VOCs/SVOCs	09092584	1,1-Dichloroethene	94.0	%REC
LCS	VOCs/SVOCs	09092584	Chlorobenzene	94.0	%REC
LCS	VOCs/SVOCs	09092584	Chloroform	94.0	%REC
LCS	VOCs/SVOCs	09092584	Trans-1,2-Dichloroethene	94.0	%REC
LCS	VOCs/SVOCs	09092584	Trichloroethene	94.0	%REC
LCS	VOCs/SVOCs	09102645	1,2-Dichloropropane	94.0	%REC
LCS	VOCs/SVOCs	09102668	Chloroform	94.0	%REC
LCS	VOCs/SVOCs	09102668	Tetrachloroethene	94.0	%REC
LCS	VOCs/SVOCs	09112699	1,1,1-Trichloroethane	94.0	%REC
LCS	VOCs/SVOCs	09112699	Bromodichloromethane	94.0	%REC
LCS	VOCs/SVOCs	09112699	Carbon Tetrachloride	94.0	%REC
LCS	VOCs/SVOCs	09112699	Pentachlorophenol	94.0	%REC
LCS	VOCs/SVOCs	09112724	2,4,6-Trichlorophenol	94.0	%REC
LCS	VOCs/SVOCs	09122754	1,3-Dichlorobenzene	94.0	%REC
LCS	VOCs/SVOCs	09122754	Toluene	94.0	%REC
LCS	VOCs/SVOCs	09012069	Hexachlorobenzene	94.1	%REC
LCS	VOCs/SVOCs	09042219	Methylene Chloride	94.1	%REC
LCS	VOCs/SVOCs	09012069	2,4,5-Trichlorophenol	94.3	%REC
LCS	VOCs/SVOCs	09012069	Fluoranthene	94.3	%REC
LCS	VOCs/SVOCs	09012069	1,3-Dichlorobenzene	94.4	%REC
LCS	VOCs/SVOCs	09012069	Benzo(A)Pyrene	94.7	%REC
LCS	VOCs/SVOCs	09012069	Indeno(1,2,3-Cd)Pyrene	94.7	%REC
LCS	VOCs/SVOCs	09012069	Toluene	94.7	%REC
LCS	VOCs/SVOCs	09042219	Trichloroethylene	94.7	%REC
LCS	VOCs/SVOCs	09012069	2-Methyl-4,6-Dinitrophenol	94.8	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09042219	1,1-Dichloroethylene	94.8	%REC
LCS	VOCs/SVOCs	09022120	1,1-Dichloroethene	95.0	%REC
LCS	VOCs/SVOCs	09022120	Chlorobenzene	95.0	%REC
LCS	VOCs/SVOCs	09022120	Chloroform	95.0	%REC
LCS	VOCs/SVOCs	09022131	1,1,1-Trichloroethane	95.0	%REC
LCS	VOCs/SVOCs	09022131	Benzene	95.0	%REC
LCS	VOCs/SVOCs	09032134	Phenol	95.0	%REC
LCS	VOCs/SVOCs	09032166	Ethylbenzene	95.0	%REC
LCS	VOCs/SVOCs	09042219	1,4-Dichlorobenzene	95.0	%REC
LCS	VOCs/SVOCs	09042233	1,3-Dichlorobenzene	95.0	%REC
LCS	VOCs/SVOCs	09042233	Chloroform	95.0	%REC
LCS	VOCs/SVOCs	09042255	1,3-Dichlorobenzene	95.0	%REC
LCS	VOCs/SVOCs	09052281	Toluene	95.0	%REC
LCS	VOCs/SVOCs	09052281	Trichloroethene	95.0	%REC
LCS	VOCs/SVOCs	09052293	Benzene	95.0	%REC
LCS	VOCs/SVOCs	09052293	Ethylbenzene	95.0	%REC
LCS	VOCs/SVOCs	09052300	Chlorobenzene	95.0	%REC
LCS	VOCs/SVOCs	09052300	Ethylbenzene	95.0	%REC
LCS	VOCs/SVOCs	09052306	1,1-Dichloroethene	95.0	%REC
LCS	VOCs/SVOCs	09052306	Methylene Chloride	95.0	%REC
LCS	VOCs/SVOCs	09052332	1,2-Dichloropropane	95.0	%REC
LCS	VOCs/SVOCs	09052332	Chloroform	95.0	%REC
LCS	VOCs/SVOCs	09062383	1,1,1-Trichloroethane	95.0	%REC
LCS	VOCs/SVOCs	09062399	1,2-Dichloropropane	95.0	%REC
LCS	VOCs/SVOCs	09072444	Carbon Tetrachloride	95.0	%REC
LCS	VOCs/SVOCs	09072444	Pentachlorophenol	95.0	%REC
LCS	VOCs/SVOCs	09072455	1,1-Dichloroethene	95.0	%REC
LCS	VOCs/SVOCs	09072455	Benzene	95.0	%REC
LCS	VOCs/SVOCs	09072455	Bromodichloromethane	95.0	%REC
LCS	VOCs/SVOCs	09082499	1,3-Dichlorobenzene	95.0	%REC
LCS	VOCs/SVOCs	09082499	Bromodichloromethane	95.0	%REC
LCS	VOCs/SVOCs	09082511	1,1-Dichloroethene	95.0	%REC
LCS	VOCs/SVOCs	09082511	4-Chloro-3-Methylphenol	95.0	%REC
LCS	VOCs/SVOCs	09082527	4-Nitrophenol	95.0	%REC
LCS	VOCs/SVOCs	09082527	Tetrachloroethene	95.0	%REC
LCS	VOCs/SVOCs	09092581	Methylene Chloride	95.0	%REC
LCS	VOCs/SVOCs	09092582	Methylene Chloride	95.0	%REC
LCS	VOCs/SVOCs	09092584	Trans-1,2-Dichloroethene	95.0	%REC
LCS	VOCs/SVOCs	09092584	Trichloroethene	95.0	%REC
LCS	VOCs/SVOCs	09102645	1,1,1-Trichloroethane	95.0	%REC
LCS	VOCs/SVOCs	09102656	Ethylbenzene	95.0	%REC
LCS	VOCs/SVOCs	09102658	2,4,6-Trichlorophenol	95.0	%REC
LCS	VOCs/SVOCs	09102668	1,1,1-Trichloroethane	95.0	%REC
LCS	VOCs/SVOCs	09112685	1,1-Dichloroethene	95.0	%REC
LCS	VOCs/SVOCs	09112685	1,3-Dichlorobenzene	95.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09112685	1,3-Dichlorobenzene	95.0	%REC
LCS	VOCs/SVOCs	09112699	Chloroform	95.0	%REC
LCS	VOCs/SVOCs	09112699	Toluene	95.0	%REC
LCS	VOCs/SVOCs	09112718	Ethylbenzene	95.0	%REC
LCS	VOCs/SVOCs	09042219	Xylenes (Total)	95.3	%REC
LCS	VOCs/SVOCs	09012069	Bis(2-Ethylhexyl)Phthalate	95.4	%REC
LCS	VOCs/SVOCs	09012069	1,1,2,2-Tetrachloroethane	95.5	%REC
LCS	VOCs/SVOCs	09042219	1,2-Dibromoethane	95.5	%REC
LCS	VOCs/SVOCs	09042219	Chlorobenzene	95.5	%REC
LCS	VOCs/SVOCs	09012069	Benzo(Ghi)Perylene	95.6	%REC
LCS	VOCs/SVOCs	09012069	Ethylbenzene	95.7	%REC
LCS	VOCs/SVOCs	09012069	Benzo(K)Fluoranthene	95.9	%REC
LCS	VOCs/SVOCs	09012069	Chlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09022120	1,2-Dichloropropane	96.0	%REC
LCS	VOCs/SVOCs	09022120	Tetrachloroethene	96.0	%REC
LCS	VOCs/SVOCs	09022131	1,2-Dichloropropane	96.0	%REC
LCS	VOCs/SVOCs	09022131	Methylene Chloride	96.0	%REC
LCS	VOCs/SVOCs	09032134	N-Nitrosodi-N-Propylamine	96.0	%REC
LCS	VOCs/SVOCs	09032134	Phenol	96.0	%REC
LCS	VOCs/SVOCs	09042255	1,3-Dichlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09042255	1,3-Dichlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09042255	1,3-Dichlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09042255	Toluene	96.0	%REC
LCS	VOCs/SVOCs	09052281	1,1,1-Trichloroethane	96.0	%REC
LCS	VOCs/SVOCs	09052281	Carbon Tetrachloride	96.0	%REC
LCS	VOCs/SVOCs	09052281	Ethylbenzene	96.0	%REC
LCS	VOCs/SVOCs	09052281	Tetrachloroethene	96.0	%REC
LCS	VOCs/SVOCs	09052293	1,1-Dichloroethene	96.0	%REC
LCS	VOCs/SVOCs	09052293	1,1-Dichloroethene	96.0	%REC
LCS	VOCs/SVOCs	09052293	1,3-Dichlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09052293	Ethylbenzene	96.0	%REC
LCS	VOCs/SVOCs	09052300	Carbon Tetrachloride	96.0	%REC
LCS	VOCs/SVOCs	09052300	Chloroform	96.0	%REC
LCS	VOCs/SVOCs	09052300	Tetrachloroethene	96.0	%REC
LCS	VOCs/SVOCs	09052306	Benzene	96.0	%REC
LCS	VOCs/SVOCs	09052306	Chloroform	96.0	%REC
LCS	VOCs/SVOCs	09052341	Bromodichloromethane	96.0	%REC
LCS	VOCs/SVOCs	09052341	Chlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09072444	1,1,1-Trichloroethane	96.0	%REC
LCS	VOCs/SVOCs	09072444	4-Nitrophenol	96.0	%REC
LCS	VOCs/SVOCs	09072444	4-Nitrophenol	96.0	%REC
LCS	VOCs/SVOCs	09072455	Carbon Tetrachloride	96.0	%REC
LCS	VOCs/SVOCs	09072455	Chlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09072455	Methylene Chloride	96.0	%REC
LCS	VOCs/SVOCs	09072455	Toluene	96.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09082511	2,4,6-Trichlorophenol	96.0	%REC
LCS	VOCs/SVOCs	09082527	Chloroform	96.0	%REC
LCS	VOCs/SVOCs	09092584	Benzene	96.0	%REC
LCS	VOCs/SVOCs	09092584	Benzene	96.0	%REC
LCS	VOCs/SVOCs	09102645	1,3-Dichlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09102656	1,2-Dichloropropane	96.0	%REC
LCS	VOCs/SVOCs	09102656	1,3-Dichlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09102658	Pentachlorophenol	96.0	%REC
LCS	VOCs/SVOCs	09112685	1,3-Dichlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09112685	Tetrachloroethene	96.0	%REC
LCS	VOCs/SVOCs	09112718	Chlorobenzene	96.0	%REC
LCS	VOCs/SVOCs	09112724	2,4,6-Trichlorophenol	96.0	%REC
LCS	VOCs/SVOCs	09112724	4-Chloro-3-Methylphenol	96.0	%REC
LCS	VOCs/SVOCs	09112724	N-Nitrosodi-N-Propylamine	96.0	%REC
LCS	VOCs/SVOCs	09122754	Trichloroethene	96.0	%REC
LCS	VOCs/SVOCs	09012069	1,2-Dibromo-3-Chloropropane	96.2	%REC
LCS	VOCs/SVOCs	09042219	1,3-Dichlorobenzene	96.2	%REC
LCS	VOCs/SVOCs	09012069	Xylenes (Total)	96.5	%REC
LCS	VOCs/SVOCs	09012069	Benzo(B)Fluoranthene	96.6	%REC
LCS	VOCs/SVOCs	09042219	1,2-Dichlorobenzene	96.6	%REC
LCS	VOCs/SVOCs	09042219	Dibromochloromethane	96.6	%REC
LCS	VOCs/SVOCs	09042219	Styrene	96.7	%REC
LCS	VOCs/SVOCs	09012069	Benzo(A)Pyrene	96.8	%REC
LCS	VOCs/SVOCs	09012069	Chloroform	96.9	%REC
LCS	VOCs/SVOCs	09022120	1,3-Dichlorobenzene	97.0	%REC
LCS	VOCs/SVOCs	09032134	2,4-Dinitrotoluene	97.0	%REC
LCS	VOCs/SVOCs	09032134	4-Chloro-3-Methylphenol	97.0	%REC
LCS	VOCs/SVOCs	09032166	Benzene	97.0	%REC
LCS	VOCs/SVOCs	09032166	Methylene Chloride	97.0	%REC
LCS	VOCs/SVOCs	09042255	Trichloroethene	97.0	%REC
LCS	VOCs/SVOCs	09052293	Ethylbenzene	97.0	%REC
LCS	VOCs/SVOCs	09052293	Tetrachloroethene	97.0	%REC
LCS	VOCs/SVOCs	09052293	Trans-1,2-Dichloroethene	97.0	%REC
LCS	VOCs/SVOCs	09052300	Benzene	97.0	%REC
LCS	VOCs/SVOCs	09052306	N-Nitrosodi-N-Propylamine	97.0	%REC
LCS	VOCs/SVOCs	09052306	Pentachlorophenol	97.0	%REC
LCS	VOCs/SVOCs	09052332	Methylene Chloride	97.0	%REC
LCS	VOCs/SVOCs	09052341	1,3-Dichlorobenzene	97.0	%REC
LCS	VOCs/SVOCs	09052341	Benzene	97.0	%REC
LCS	VOCs/SVOCs	09052341	Carbon Tetrachloride	97.0	%REC
LCS	VOCs/SVOCs	09052341	Chloroform	97.0	%REC
LCS	VOCs/SVOCs	09052341	Methylene Chloride	97.0	%REC
LCS	VOCs/SVOCs	09052341	Toluene	97.0	%REC
LCS	VOCs/SVOCs	09062399	Benzene	97.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09062399	Chloroform	97.0	%REC
LCS	VOCs/SVOCs	09072455	1,3-Dichlorobenzene	97.0	%REC
LCS	VOCs/SVOCs	09072455	Chloroform	97.0	%REC
LCS	VOCs/SVOCs	09072455	Methylene Chloride	97.0	%REC
LCS	VOCs/SVOCs	09072455	Trans-1,2-Dichloroethene	97.0	%REC
LCS	VOCs/SVOCs	09082499	Bromodichloromethane	97.0	%REC
LCS	VOCs/SVOCs	09082527	1,1,1-Trichloroethane	97.0	%REC
LCS	VOCs/SVOCs	09082527	1,1,1-Trichloroethane	97.0	%REC
LCS	VOCs/SVOCs	09082527	Chloroform	97.0	%REC
LCS	VOCs/SVOCs	09092584	Benzene	97.0	%REC
LCS	VOCs/SVOCs	09092584	Chlorobenzene	97.0	%REC
LCS	VOCs/SVOCs	09092584	Ethylbenzene	97.0	%REC
LCS	VOCs/SVOCs	09092584	Toluene	97.0	%REC
LCS	VOCs/SVOCs	09102645	Benzene	97.0	%REC
LCS	VOCs/SVOCs	09102645	Chlorobenzene	97.0	%REC
LCS	VOCs/SVOCs	09102650	Ethylbenzene	97.0	%REC
LCS	VOCs/SVOCs	09102656	Benzene	97.0	%REC
LCS	VOCs/SVOCs	09102656	Chlorobenzene	97.0	%REC
LCS	VOCs/SVOCs	09102658	4-Nitrophenol	97.0	%REC
LCS	VOCs/SVOCs	09102668	1,1-Dichloroethene	97.0	%REC
LCS	VOCs/SVOCs	09102668	1,2-Dichloropropane	97.0	%REC
LCS	VOCs/SVOCs	09112685	Chlorobenzene	97.0	%REC
LCS	VOCs/SVOCs	09112685	Ethylbenzene	97.0	%REC
LCS	VOCs/SVOCs	09112685	Methylene Chloride	97.0	%REC
LCS	VOCs/SVOCs	09112685	Methylene Chloride	97.0	%REC
LCS	VOCs/SVOCs	09112685	Tetrachloroethene	97.0	%REC
LCS	VOCs/SVOCs	09112699	Benzene	97.0	%REC
LCS	VOCs/SVOCs	09112699	Trichloroethene	97.0	%REC
LCS	VOCs/SVOCs	09112724	4-Nitrophenol	97.0	%REC
LCS	VOCs/SVOCs	09112724	Pentachlorophenol	97.0	%REC
LCS	VOCs/SVOCs	09112724	Phenol	97.0	%REC
LCS	VOCs/SVOCs	09012069	Benzo(A)Anthracene	97.2	%REC
LCS	VOCs/SVOCs	09012069	Tetrachloroethylene	97.2	%REC
LCS	VOCs/SVOCs	09012069	Benzene	97.3	%REC
LCS	VOCs/SVOCs	09042219	Bromodichloromethane	97.4	%REC
LCS	VOCs/SVOCs	09042219	1,1,1-Trichloroethane	97.5	%REC
LCS	VOCs/SVOCs	09042219	Tetrachloroethylene	97.8	%REC
LCS	VOCs/SVOCs	09012069	Benzo(B)Fluoranthene	98.0	%REC
LCS	VOCs/SVOCs	09012069	Styrene	98.0	%REC
LCS	VOCs/SVOCs	09022120	Trichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09022131	1,1-Dichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09022131	Toluene	98.0	%REC
LCS	VOCs/SVOCs	09032134	N-Nitrosodi-N-Propylamine	98.0	%REC
LCS	VOCs/SVOCs	09042233	1,2-Dichloropropane	98.0	%REC
LCS	VOCs/SVOCs	09042233	1,3-Dichlorobenzene	98.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09042255	1,2-Dichloropropane	98.0	%REC
LCS	VOCs/SVOCs	09042255	Bromodichloromethane	98.0	%REC
LCS	VOCs/SVOCs	09042255	Toluene	98.0	%REC
LCS	VOCs/SVOCs	09042255	Trichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09042255	Trichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09052281	1,1,1-Trichloroethane	98.0	%REC
LCS	VOCs/SVOCs	09052293	Benzene	98.0	%REC
LCS	VOCs/SVOCs	09052293	Methylene Chloride	98.0	%REC
LCS	VOCs/SVOCs	09052293	Methylene Chloride	98.0	%REC
LCS	VOCs/SVOCs	09052300	Trichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09052306	1,2-Dichloropropane	98.0	%REC
LCS	VOCs/SVOCs	09052306	Carbon Tetrachloride	98.0	%REC
LCS	VOCs/SVOCs	09052306	Trans-1,2-Dichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09052332	Bromodichloromethane	98.0	%REC
LCS	VOCs/SVOCs	09052341	Chlorobenzene	98.0	%REC
LCS	VOCs/SVOCs	09052341	Toluene	98.0	%REC
LCS	VOCs/SVOCs	09072444	2,4-Dinitrotoluene	98.0	%REC
LCS	VOCs/SVOCs	09072444	2,4-Dinitrotoluene	98.0	%REC
LCS	VOCs/SVOCs	09072455	1,1,1-Trichloroethane	98.0	%REC
LCS	VOCs/SVOCs	09072455	Trichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09072455	Trichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09082499	Chlorobenzene	98.0	%REC
LCS	VOCs/SVOCs	09082511	1,1-Dichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09082511	4-Nitrophenol	98.0	%REC
LCS	VOCs/SVOCs	09092581	1,3-Dichlorobenzene	98.0	%REC
LCS	VOCs/SVOCs	09092581	Bromodichloromethane	98.0	%REC
LCS	VOCs/SVOCs	09092582	1,3-Dichlorobenzene	98.0	%REC
LCS	VOCs/SVOCs	09092582	Bromodichloromethane	98.0	%REC
LCS	VOCs/SVOCs	09092584	Tetrachloroethene	98.0	%REC
LCS	VOCs/SVOCs	09092584	Trans-1,2-Dichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09092584	Trichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09102650	Trans-1,2-Dichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09102656	1,1-Dichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09102656	Methylene Chloride	98.0	%REC
LCS	VOCs/SVOCs	09102658	2,4-Dinitrotoluene	98.0	%REC
LCS	VOCs/SVOCs	09102668	Carbon Tetrachloride	98.0	%REC
LCS	VOCs/SVOCs	09112685	Bromodichloromethane	98.0	%REC
LCS	VOCs/SVOCs	09112685	Toluene	98.0	%REC
LCS	VOCs/SVOCs	09112685	Toluene	98.0	%REC
LCS	VOCs/SVOCs	09112699	1,1-Dichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09112699	Carbon Tetrachloride	98.0	%REC
LCS	VOCs/SVOCs	09112699	Trans-1,2-Dichloroethene	98.0	%REC
LCS	VOCs/SVOCs	09112718	Chlorobenzene	98.0	%REC
LCS	VOCs/SVOCs	09112718	Ethylbenzene	98.0	%REC
LCS	VOCs/SVOCs	09112718	Tetrachloroethene	98.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09112724	2,4-Dinitrotoluene	98.0	%REC
LCS	VOCs/SVOCs	09042219	Trans-1,3-Dichloropropylene	98.1	%REC
LCS	VOCs/SVOCs	09012069	Dibenzo(A,H)Anthracene	98.3	%REC
LCS	VOCs/SVOCs	09012069	1,1,1-Trichloroethane	98.5	%REC
LCS	VOCs/SVOCs	09012069	1,1,2-Trichloroethane	98.7	%REC
LCS	VOCs/SVOCs	09012069	1,2-Dibromoethane	98.7	%REC
LCS	VOCs/SVOCs	09042219	Carbon Tetrachloride	98.9	%REC
LCS	VOCs/SVOCs	09042219	Hexachlorobutadiene	98.9	%REC
LCS	VOCs/SVOCs	09012069	1,2-Dichloropropane	99.0	%REC
LCS	VOCs/SVOCs	09022120	Bromodichloromethane	99.0	%REC
LCS	VOCs/SVOCs	09032134	2,4-Dinitrotoluene	99.0	%REC
LCS	VOCs/SVOCs	09032166	1,2-Dichloropropane	99.0	%REC
LCS	VOCs/SVOCs	09042233	Benzene	99.0	%REC
LCS	VOCs/SVOCs	09042233	Chlorobenzene	99.0	%REC
LCS	VOCs/SVOCs	09042253	Carbon Tetrachloride	99.0	%REC
LCS	VOCs/SVOCs	09042255	1,2-Dichloropropane	99.0	%REC
LCS	VOCs/SVOCs	09042255	Tetrachloroethene	99.0	%REC
LCS	VOCs/SVOCs	09042255	Toluene	99.0	%REC
LCS	VOCs/SVOCs	09042255	Trans-1,2-Dichloroethene	99.0	%REC
LCS	VOCs/SVOCs	09052293	Chlorobenzene	99.0	%REC
LCS	VOCs/SVOCs	09052293	Chlorobenzene	99.0	%REC
LCS	VOCs/SVOCs	09052293	Toluene	99.0	%REC
LCS	VOCs/SVOCs	09052293	Toluene	99.0	%REC
LCS	VOCs/SVOCs	09052300	1,1,1-Trichloroethane	99.0	%REC
LCS	VOCs/SVOCs	09052300	1,2-Dichloropropane	99.0	%REC
LCS	VOCs/SVOCs	09052300	1,3-Dichlorobenzene	99.0	%REC
LCS	VOCs/SVOCs	09052300	Bromodichloromethane	99.0	%REC
LCS	VOCs/SVOCs	09052300	Toluene	99.0	%REC
LCS	VOCs/SVOCs	09052300	Trans-1,2-Dichloroethene	99.0	%REC
LCS	VOCs/SVOCs	09052306	1,1,1-Trichloroethane	99.0	%REC
LCS	VOCs/SVOCs	09052306	Anthracene	99.0	%REC
LCS	VOCs/SVOCs	09052306	Pyrene	99.0	%REC
LCS	VOCs/SVOCs	09052341	1,1-Dichloroethene	99.0	%REC
LCS	VOCs/SVOCs	09052341	1,2-Dichloropropane	99.0	%REC
LCS	VOCs/SVOCs	09052341	Chloroform	99.0	%REC
LCS	VOCs/SVOCs	09062383	1,3-Dichlorobenzene	99.0	%REC
LCS	VOCs/SVOCs	09062399	Ethylbenzene	99.0	%REC
LCS	VOCs/SVOCs	09072455	1,2-Dichloropropane	99.0	%REC
LCS	VOCs/SVOCs	09072455	1,3-Dichlorobenzene	99.0	%REC
LCS	VOCs/SVOCs	09072455	Tetrachloroethene	99.0	%REC
LCS	VOCs/SVOCs	09072455	Toluene	99.0	%REC
LCS	VOCs/SVOCs	09082499	Methylene Chloride	99.0	%REC
LCS	VOCs/SVOCs	09082527	Tetrachloroethene	99.0	%REC
LCS	VOCs/SVOCs	09082527	Tetrachloroethene	99.0	%REC
LCS	VOCs/SVOCs	09092581	1,2-Dichloropropane	99.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09092581	1,2-Dichloropropane	99.0	%REC
LCS	VOCs/SVOCs	09092582	1,2-Dichloropropane	99.0	%REC
LCS	VOCs/SVOCs	09092582	1,2-Dichloropropane	99.0	%REC
LCS	VOCs/SVOCs	09092584	1,1-Dichloroethene	99.0	%REC
LCS	VOCs/SVOCs	09092584	1,1-Dichloroethene	99.0	%REC
LCS	VOCs/SVOCs	09102645	Trichloroethene	99.0	%REC
LCS	VOCs/SVOCs	09102650	Bromodichloromethane	99.0	%REC
LCS	VOCs/SVOCs	09102650	Chlorobenzene	99.0	%REC
LCS	VOCs/SVOCs	09102658	4-Nitrophenol	99.0	%REC
LCS	VOCs/SVOCs	09102658	Bromodichloromethane	99.0	%REC
LCS	VOCs/SVOCs	09102668	1,1,1-Trichloroethane	99.0	%REC
LCS	VOCs/SVOCs	09112685	Ethylbenzene	99.0	%REC
LCS	VOCs/SVOCs	09112699	1,1-Dichloroethene	99.0	%REC
LCS	VOCs/SVOCs	09112699	Chloroform	99.0	%REC
LCS	VOCs/SVOCs	09112718	Tetrachloroethene	99.0	%REC
LCS	VOCs/SVOCs	09112724	2,4-Dinitrotoluene	99.0	%REC
LCS	VOCs/SVOCs	09112724	4-Chloro-3-Methylphenol	99.0	%REC
LCS	VOCs/SVOCs	09112724	Pentachlorophenol	99.0	%REC
LCS	VOCs/SVOCs	09042219	Chloromethane	99.1	%REC
LCS	VOCs/SVOCs	09042219	Cis-1,2-Dichloroethylene	99.2	%REC
LCS	VOCs/SVOCs	09012069	Bromodichloromethane	99.3	%REC
LCS	VOCs/SVOCs	09012069	Di-N-Butylphthalate	99.3	%REC
LCS	VOCs/SVOCs	09012069	Dibromochloromethane	99.5	%REC
LCS	VOCs/SVOCs	09012069	Trichloroethylene	99.7	%REC
LCS	VOCs/SVOCs	09012069	Methylene Chloride	100.0	%REC
LCS	VOCs/SVOCs	09022120	1,1,1-Trichloroethane	100.0	%REC
LCS	VOCs/SVOCs	09022131	Bromodichloromethane	100.0	%REC
LCS	VOCs/SVOCs	09032134	Trichloroethene	100.0	%REC
LCS	VOCs/SVOCs	09042233	Carbon Tetrachloride	100.0	%REC
LCS	VOCs/SVOCs	09042233	Chlorobenzene	100.0	%REC
LCS	VOCs/SVOCs	09042233	Ethylbenzene	100.0	%REC
LCS	VOCs/SVOCs	09042233	Trans-1,2-Dichloroethene	100.0	%REC
LCS	VOCs/SVOCs	09042233	Trichloroethene	100.0	%REC
LCS	VOCs/SVOCs	09042255	1,2-Dichloropropane	100.0	%REC
LCS	VOCs/SVOCs	09042255	Bromodichloromethane	100.0	%REC
LCS	VOCs/SVOCs	09042255	Chloroform	100.0	%REC
LCS	VOCs/SVOCs	09042255	Ethylbenzene	100.0	%REC
LCS	VOCs/SVOCs	09042255	Tetrachloroethene	100.0	%REC
LCS	VOCs/SVOCs	09042255	Toluene	100.0	%REC
LCS	VOCs/SVOCs	09042255	Trichloroethene	100.0	%REC
LCS	VOCs/SVOCs	09052281	Ethylbenzene	100.0	%REC
LCS	VOCs/SVOCs	09052281	Tetrachloroethene	100.0	%REC
LCS	VOCs/SVOCs	09052293	Methylene Chloride	100.0	%REC
LCS	VOCs/SVOCs	09052293	Trichloroethene	100.0	%REC
LCS	VOCs/SVOCs	09052300	Tetrachloroethene	100.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09052306	2,4-Dinitrotoluene	100.0	%REC
LCS	VOCs/SVOCs	09052306	Phenol	100.0	%REC
LCS	VOCs/SVOCs	09052341	Trichloroethene	100.0	%REC
LCS	VOCs/SVOCs	09062383	Carbon Tetrachloride	100.0	%REC
LCS	VOCs/SVOCs	09062399	1,1,1-Trichloroethane	100.0	%REC
LCS	VOCs/SVOCs	09072444	1,1-Dichloroethene	100.0	%REC
LCS	VOCs/SVOCs	09072455	1,3-Dichlorobenzene	100.0	%REC
LCS	VOCs/SVOCs	09072455	Benzene	100.0	%REC
LCS	VOCs/SVOCs	09072455	Tetrachloroethene	100.0	%REC
LCS	VOCs/SVOCs	09072455	Trans-1,2-Dichloroethene	100.0	%REC
LCS	VOCs/SVOCs	09082499	Ethylbenzene	100.0	%REC
LCS	VOCs/SVOCs	09082499	Methylene Chloride	100.0	%REC
LCS	VOCs/SVOCs	09082511	2,4-Dinitrotoluene	100.0	%REC
LCS	VOCs/SVOCs	09082527	1,2-Dichloropropane	100.0	%REC
LCS	VOCs/SVOCs	09092581	Bromodichloromethane	100.0	%REC
LCS	VOCs/SVOCs	09092581	Chloroform	100.0	%REC
LCS	VOCs/SVOCs	09092582	Bromodichloromethane	100.0	%REC
LCS	VOCs/SVOCs	09092582	Chloroform	100.0	%REC
LCS	VOCs/SVOCs	09092584	1,1,1-Trichloroethane	100.0	%REC
LCS	VOCs/SVOCs	09092584	1,3-Dichlorobenzene	100.0	%REC
LCS	VOCs/SVOCs	09092584	Bromodichloromethane	100.0	%REC
LCS	VOCs/SVOCs	09092584	Methylene Chloride	100.0	%REC
LCS	VOCs/SVOCs	09092584	Trans-1,2-Dichloroethene	100.0	%REC
LCS	VOCs/SVOCs	09102658	2,4-Dinitrotoluene	100.0	%REC
LCS	VOCs/SVOCs	09102658	Chloroform	100.0	%REC
LCS	VOCs/SVOCs	09102658	Methylene Chloride	100.0	%REC
LCS	VOCs/SVOCs	09102668	Benzene	100.0	%REC
LCS	VOCs/SVOCs	09102668	Bromodichloromethane	100.0	%REC
LCS	VOCs/SVOCs	09102668	Trans-1,2-Dichloroethene	100.0	%REC
LCS	VOCs/SVOCs	09112685	Bromodichloromethane	100.0	%REC
LCS	VOCs/SVOCs	09112699	1,3-Dichlorobenzene	100.0	%REC
LCS	VOCs/SVOCs	09112699	Bromodichloromethane	100.0	%REC
LCS	VOCs/SVOCs	09012069	Benzo(K)Fluoranthene	101.0	%REC
LCS	VOCs/SVOCs	09012069	Trans-1,3-Dichloropropylene	101.0	%REC
LCS	VOCs/SVOCs	09022120	Benzene	101.0	%REC
LCS	VOCs/SVOCs	09022131	Trans-1,2-Dichloroethene	101.0	%REC
LCS	VOCs/SVOCs	09032134	1,1,1-Trichloroethane	101.0	%REC
LCS	VOCs/SVOCs	09032134	Pentachlorophenol	101.0	%REC
LCS	VOCs/SVOCs	09042219	Naphthalene	101.0	%REC
LCS	VOCs/SVOCs	09042233	Tetrachloroethene	101.0	%REC
LCS	VOCs/SVOCs	09042233	Trichloroethene	101.0	%REC
LCS	VOCs/SVOCs	09042255	Benzene	101.0	%REC
LCS	VOCs/SVOCs	09042255	Benzene	101.0	%REC
LCS	VOCs/SVOCs	09042255	Benzene	101.0	%REC
LCS	VOCs/SVOCs	09042255	Chlorobenzene	101.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09042255	Chlorobenzene	101.0	%REC
LCS	VOCs/SVOCs	09042255	Chloroform	101.0	%REC
LCS	VOCs/SVOCs	09042255	Chloroform	101.0	%REC
LCS	VOCs/SVOCs	09042255	Methylene Chloride	101.0	%REC
LCS	VOCs/SVOCs	09042255	Tetrachloroethene	101.0	%REC
LCS	VOCs/SVOCs	09042255	Trans-1,2-Dichloroethene	101.0	%REC
LCS	VOCs/SVOCs	09042255	Trans-1,2-Dichloroethene	101.0	%REC
LCS	VOCs/SVOCs	09052281	Carbon Tetrachloride	101.0	%REC
LCS	VOCs/SVOCs	09052281	Trichloroethene	101.0	%REC
LCS	VOCs/SVOCs	09052293	Methylene Chloride	101.0	%REC
LCS	VOCs/SVOCs	09052300	Ethylbenzene	101.0	%REC
LCS	VOCs/SVOCs	09052300	Methylene Chloride	101.0	%REC
LCS	VOCs/SVOCs	09052341	Benzene	101.0	%REC
LCS	VOCs/SVOCs	09062399	Tetrachloroethene	101.0	%REC
LCS	VOCs/SVOCs	09072455	Benzene	101.0	%REC
LCS	VOCs/SVOCs	09072455	Bromodichloromethane	101.0	%REC
LCS	VOCs/SVOCs	09072455	Chlorobenzene	101.0	%REC
LCS	VOCs/SVOCs	09082499	Chlorobenzene	101.0	%REC
LCS	VOCs/SVOCs	09082499	Tetrachloroethene	101.0	%REC
LCS	VOCs/SVOCs	09082499	Trichloroethene	101.0	%REC
LCS	VOCs/SVOCs	09082511	4-Nitrophenol	101.0	%REC
LCS	VOCs/SVOCs	09092581	Chlorobenzene	101.0	%REC
LCS	VOCs/SVOCs	09092581	Trans-1,2-Dichloroethene	101.0	%REC
LCS	VOCs/SVOCs	09092581	Trans-1,2-Dichloroethene	101.0	%REC
LCS	VOCs/SVOCs	09092582	Chlorobenzene	101.0	%REC
LCS	VOCs/SVOCs	09092582	Trans-1,2-Dichloroethene	101.0	%REC
LCS	VOCs/SVOCs	09092582	Trans-1,2-Dichloroethene	101.0	%REC
LCS	VOCs/SVOCs	09092584	1,1,1-Trichloroethane	101.0	%REC
LCS	VOCs/SVOCs	09092584	Carbon Tetrachloride	101.0	%REC
LCS	VOCs/SVOCs	09092584	Chlorobenzene	101.0	%REC
LCS	VOCs/SVOCs	09092584	Chlorobenzene	101.0	%REC
LCS	VOCs/SVOCs	09092584	Chloroform	101.0	%REC
LCS	VOCs/SVOCs	09102668	Carbon Tetrachloride	101.0	%REC
LCS	VOCs/SVOCs	09112685	1,2-Dichloropropane	101.0	%REC
LCS	VOCs/SVOCs	09112685	Chlorobenzene	101.0	%REC
LCS	VOCs/SVOCs	09112685	Toluene	101.0	%REC
LCS	VOCs/SVOCs	09112685	Toluene	101.0	%REC
LCS	VOCs/SVOCs	09112699	1,1,1-Trichloroethane	101.0	%REC
LCS	VOCs/SVOCs	09112699	1,1,1-Trichloroethane	101.0	%REC
LCS	VOCs/SVOCs	09112699	1,2-Dichloropropane	101.0	%REC
LCS	VOCs/SVOCs	09112699	Chlorobenzene	101.0	%REC
LCS	VOCs/SVOCs	09112718	1,3-Dichlorobenzene	101.0	%REC
LCS	VOCs/SVOCs	09112718	Bromodichloromethane	101.0	%REC
LCS	VOCs/SVOCs	09022131	Chloroform	102.0	%REC
LCS	VOCs/SVOCs	09022131	Methylene Chloride	102.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09032134	Pentachlorophenol	102.0	%REC
LCS	VOCs/SVOCs	09042219	1,2,4-Trichlorobenzene	102.0	%REC
LCS	VOCs/SVOCs	09042233	Toluene	102.0	%REC
LCS	VOCs/SVOCs	09042233	Toluene	102.0	%REC
LCS	VOCs/SVOCs	09042253	1,1,1-Trichloroethane	102.0	%REC
LCS	VOCs/SVOCs	09042255	1,2-Dichloropropane	102.0	%REC
LCS	VOCs/SVOCs	09042255	Benzene	102.0	%REC
LCS	VOCs/SVOCs	09042255	Bromodichloromethane	102.0	%REC
LCS	VOCs/SVOCs	09042255	Ethylbenzene	102.0	%REC
LCS	VOCs/SVOCs	09052293	Benzene	102.0	%REC
LCS	VOCs/SVOCs	09052293	Chloroform	102.0	%REC
LCS	VOCs/SVOCs	09052300	Benzene	102.0	%REC
LCS	VOCs/SVOCs	09052300	Chlorobenzene	102.0	%REC
LCS	VOCs/SVOCs	09052300	Chloroform	102.0	%REC
LCS	VOCs/SVOCs	09052306	2,4,6-Trichlorophenol	102.0	%REC
LCS	VOCs/SVOCs	09052306	2-Chlorophenol	102.0	%REC
LCS	VOCs/SVOCs	09052306	4-Chloro-3-Methylphenol	102.0	%REC
LCS	VOCs/SVOCs	09052306	N-Nitrosodi-N-Propylamine	102.0	%REC
LCS	VOCs/SVOCs	09052341	Ethylbenzene	102.0	%REC
LCS	VOCs/SVOCs	09062399	Carbon Tetrachloride	102.0	%REC
LCS	VOCs/SVOCs	09082511	2,4-Dinitrotoluene	102.0	%REC
LCS	VOCs/SVOCs	09082511	Methylene Chloride	102.0	%REC
LCS	VOCs/SVOCs	09082527	Chlorobenzene	102.0	%REC
LCS	VOCs/SVOCs	09082527	Methylene Chloride	102.0	%REC
LCS	VOCs/SVOCs	09092581	1,3-Dichlorobenzene	102.0	%REC
LCS	VOCs/SVOCs	09092581	Chloroform	102.0	%REC
LCS	VOCs/SVOCs	09092582	1,3-Dichlorobenzene	102.0	%REC
LCS	VOCs/SVOCs	09092582	Chloroform	102.0	%REC
LCS	VOCs/SVOCs	09092584	Bromodichloromethane	102.0	%REC
LCS	VOCs/SVOCs	09092584	Carbon Tetrachloride	102.0	%REC
LCS	VOCs/SVOCs	09092584	Ethylbenzene	102.0	%REC
LCS	VOCs/SVOCs	09092584	Methylene Chloride	102.0	%REC
LCS	VOCs/SVOCs	09102645	Trans-1,2-Dichloroethene	102.0	%REC
LCS	VOCs/SVOCs	09102650	1,1-Dichloroethene	102.0	%REC
LCS	VOCs/SVOCs	09112699	Tetrachloroethene	102.0	%REC
LCS	VOCs/SVOCs	09112718	1,2-Dichloropropane	102.0	%REC
LCS	VOCs/SVOCs	09122754	Tetrachloroethene	102.0	%REC
LCS	VOCs/SVOCs	09012069	1,1-Dichloroethylene	103.0	%REC
LCS	VOCs/SVOCs	09012069	Carbon Tetrachloride	103.0	%REC
LCS	VOCs/SVOCs	09012069	Cis-1,2-Dichloroethylene	103.0	%REC
LCS	VOCs/SVOCs	09032134	Carbon Tetrachloride	103.0	%REC
LCS	VOCs/SVOCs	09032134	Tetrachloroethene	103.0	%REC
LCS	VOCs/SVOCs	09042219	1,2-Dibromo-3-Chloropropane	103.0	%REC
LCS	VOCs/SVOCs	09042219	Bromoform	103.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09042233	1,1,1-Trichloroethane	103.0	%REC
LCS	VOCs/SVOCs	09042233	Bromodichloromethane	103.0	%REC
LCS	VOCs/SVOCs	09042233	Bromodichloromethane	103.0	%REC
LCS	VOCs/SVOCs	09042233	Methylene Chloride	103.0	%REC
LCS	VOCs/SVOCs	09042255	Bromodichloromethane	103.0	%REC
LCS	VOCs/SVOCs	09042255	Ethylbenzene	103.0	%REC
LCS	VOCs/SVOCs	09042255	Trans-1,2-Dichloroethene	103.0	%REC
LCS	VOCs/SVOCs	09052293	1,1-Dichloroethene	103.0	%REC
LCS	VOCs/SVOCs	09052293	Bromodichloromethane	103.0	%REC
LCS	VOCs/SVOCs	09052293	Tetrachloroethene	103.0	%REC
LCS	VOCs/SVOCs	09052306	Pentachlorophenol	103.0	%REC
LCS	VOCs/SVOCs	09052341	Trans-1,2-Dichloroethene	103.0	%REC
LCS	VOCs/SVOCs	09062399	Trans-1,2-Dichloroethene	103.0	%REC
LCS	VOCs/SVOCs	09072455	Chlorobenzene	103.0	%REC
LCS	VOCs/SVOCs	09072455	Chloroform	103.0	%REC
LCS	VOCs/SVOCs	09072455	Ethylbenzene	103.0	%REC
LCS	VOCs/SVOCs	09072455	Toluene	103.0	%REC
LCS	VOCs/SVOCs	09072455	Toluene	103.0	%REC
LCS	VOCs/SVOCs	09072455	Trans-1,2-Dichloroethene	103.0	%REC
LCS	VOCs/SVOCs	09072455	Trichloroethene	103.0	%REC
LCS	VOCs/SVOCs	09082499	1,1,1-Trichloroethane	103.0	%REC
LCS	VOCs/SVOCs	09082499	1,2-Dichloropropane	103.0	%REC
LCS	VOCs/SVOCs	09082499	Carbon Tetrachloride	103.0	%REC
LCS	VOCs/SVOCs	09082499	Ethylbenzene	103.0	%REC
LCS	VOCs/SVOCs	09082499	Trans-1,2-Dichloroethene	103.0	%REC
LCS	VOCs/SVOCs	09082499	Trichloroethene	103.0	%REC
LCS	VOCs/SVOCs	09082511	Methylene Chloride	103.0	%REC
LCS	VOCs/SVOCs	09082511	Pentachlorophenol	103.0	%REC
LCS	VOCs/SVOCs	09082527	1,2-Dichloropropane	103.0	%REC
LCS	VOCs/SVOCs	09082527	Chlorobenzene	103.0	%REC
LCS	VOCs/SVOCs	09082527	Methylene Chloride	103.0	%REC
LCS	VOCs/SVOCs	09082527	Trichloroethene	103.0	%REC
LCS	VOCs/SVOCs	09092581	Chlorobenzene	103.0	%REC
LCS	VOCs/SVOCs	09092582	Chlorobenzene	103.0	%REC
LCS	VOCs/SVOCs	09092584	1,3-Dichlorobenzene	103.0	%REC
LCS	VOCs/SVOCs	09102645	Ethylbenzene	103.0	%REC
LCS	VOCs/SVOCs	09102650	Benzene	103.0	%REC
LCS	VOCs/SVOCs	09102658	Tetrachloroethene	103.0	%REC
LCS	VOCs/SVOCs	09102658	Toluene	103.0	%REC
LCS	VOCs/SVOCs	09102668	1,2-Dichloropropane	103.0	%REC
LCS	VOCs/SVOCs	09112685	1,2-Dichloropropane	103.0	%REC
LCS	VOCs/SVOCs	09112685	Benzene	103.0	%REC
LCS	VOCs/SVOCs	09112685	Ethylbenzene	103.0	%REC
LCS	VOCs/SVOCs	09112699	Ethylbenzene	103.0	%REC
LCS	VOCs/SVOCs	09112699	Toluene	103.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09112699	Trichloroethene	103.0	%REC
LCS	VOCs/SVOCs	09022120	Ethylbenzene	104.0	%REC
LCS	VOCs/SVOCs	09032134	Bromodichloromethane	104.0	%REC
LCS	VOCs/SVOCs	09042219	Bromomethane	104.0	%REC
LCS	VOCs/SVOCs	09042219	Vinyl Chloride	104.0	%REC
LCS	VOCs/SVOCs	09042233	Chloroform	104.0	%REC
LCS	VOCs/SVOCs	09042255	Chlorobenzene	104.0	%REC
LCS	VOCs/SVOCs	09042255	Chlorobenzene	104.0	%REC
LCS	VOCs/SVOCs	09042255	Chloroform	104.0	%REC
LCS	VOCs/SVOCs	09052293	Bromodichloromethane	104.0	%REC
LCS	VOCs/SVOCs	09052293	Bromodichloromethane	104.0	%REC
LCS	VOCs/SVOCs	09052293	Tetrachloroethene	104.0	%REC
LCS	VOCs/SVOCs	09052306	2,4,6-Trichlorophenol	104.0	%REC
LCS	VOCs/SVOCs	09052306	4-Chloro-3-Methylphenol	104.0	%REC
LCS	VOCs/SVOCs	09052341	1,1,1-Trichloroethane	104.0	%REC
LCS	VOCs/SVOCs	09062383	Trans-1,2-Dichloroethene	104.0	%REC
LCS	VOCs/SVOCs	09072455	1,1-Dichloroethene	104.0	%REC
LCS	VOCs/SVOCs	09072455	1,2-Dichloropropane	104.0	%REC
LCS	VOCs/SVOCs	09072455	1,2-Dichloropropane	104.0	%REC
LCS	VOCs/SVOCs	09072455	Benzene	104.0	%REC
LCS	VOCs/SVOCs	09072455	Ethylbenzene	104.0	%REC
LCS	VOCs/SVOCs	09082499	Tetrachloroethene	104.0	%REC
LCS	VOCs/SVOCs	09082499	Trans-1,2-Dichloroethene	104.0	%REC
LCS	VOCs/SVOCs	09082511	Methylene Chloride	104.0	%REC
LCS	VOCs/SVOCs	09082527	1,3-Dichlorobenzene	104.0	%REC
LCS	VOCs/SVOCs	09082527	Benzene	104.0	%REC
LCS	VOCs/SVOCs	09092581	Benzene	104.0	%REC
LCS	VOCs/SVOCs	09092581	Trichloroethene	104.0	%REC
LCS	VOCs/SVOCs	09092582	Benzene	104.0	%REC
LCS	VOCs/SVOCs	09092582	Trichloroethene	104.0	%REC
LCS	VOCs/SVOCs	09102650	1,2-Dichloropropane	104.0	%REC
LCS	VOCs/SVOCs	09102650	1,3-Dichlorobenzene	104.0	%REC
LCS	VOCs/SVOCs	09102668	Chloroform	104.0	%REC
LCS	VOCs/SVOCs	09102668	Toluene	104.0	%REC
LCS	VOCs/SVOCs	09112685	Benzene	104.0	%REC
LCS	VOCs/SVOCs	09112699	Bromodichloromethane	104.0	%REC
LCS	VOCs/SVOCs	09112718	Benzene	104.0	%REC
LCS	VOCs/SVOCs	09112718	Chloroform	104.0	%REC
LCS	VOCs/SVOCs	09012069	Fluoranthene	105.0	%REC
LCS	VOCs/SVOCs	09022131	Benzene	105.0	%REC
LCS	VOCs/SVOCs	09042233	Tetrachloroethene	105.0	%REC
LCS	VOCs/SVOCs	09052293	1,1,1-Trichloroethane	105.0	%REC
LCS	VOCs/SVOCs	09052293	Carbon Tetrachloride	105.0	%REC
LCS	VOCs/SVOCs	09052306	4-Nitrophenol	105.0	%REC
LCS	VOCs/SVOCs	09072455	Chlorobenzene	105.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09072455	Ethylbenzene	105.0	%REC
LCS	VOCs/SVOCs	09082499	1,2-Dichloropropane	105.0	%REC
LCS	VOCs/SVOCs	09082499	Benzene	105.0	%REC
LCS	VOCs/SVOCs	09082499	Chloroform	105.0	%REC
LCS	VOCs/SVOCs	09082511	Pentachlorophenol	105.0	%REC
LCS	VOCs/SVOCs	09082527	1,3-Dichlorobenzene	105.0	%REC
LCS	VOCs/SVOCs	09082527	Benzene	105.0	%REC
LCS	VOCs/SVOCs	09092581	1,1-Dichloroethene	105.0	%REC
LCS	VOCs/SVOCs	09092581	Benzene	105.0	%REC
LCS	VOCs/SVOCs	09092581	Ethylbenzene	105.0	%REC
LCS	VOCs/SVOCs	09092581	Trichloroethene	105.0	%REC
LCS	VOCs/SVOCs	09092582	1,1-Dichloroethene	105.0	%REC
LCS	VOCs/SVOCs	09092582	Benzene	105.0	%REC
LCS	VOCs/SVOCs	09092582	Ethylbenzene	105.0	%REC
LCS	VOCs/SVOCs	09092582	Trichloroethene	105.0	%REC
LCS	VOCs/SVOCs	09092584	Ethylbenzene	105.0	%REC
LCS	VOCs/SVOCs	09092584	Ethylbenzene	105.0	%REC
LCS	VOCs/SVOCs	09092584	Tetrachloroethene	105.0	%REC
LCS	VOCs/SVOCs	09102650	Chloroform	105.0	%REC
LCS	VOCs/SVOCs	09102656	Tetrachloroethene	105.0	%REC
LCS	VOCs/SVOCs	09102668	1,3-Dichlorobenzene	105.0	%REC
LCS	VOCs/SVOCs	09102668	Benzene	105.0	%REC
LCS	VOCs/SVOCs	09102668	Chlorobenzene	105.0	%REC
LCS	VOCs/SVOCs	09112685	Carbon Tetrachloride	105.0	%REC
LCS	VOCs/SVOCs	09112685	Chloroform	105.0	%REC
LCS	VOCs/SVOCs	09112699	Trans-1,2-Dichloroethene	105.0	%REC
LCS	VOCs/SVOCs	09012069	Bromoform	106.0	%REC
LCS	VOCs/SVOCs	09022120	Toluene	106.0	%REC
LCS	VOCs/SVOCs	09032134	1,3-Dichlorobenzene	106.0	%REC
LCS	VOCs/SVOCs	09042233	Chloroform	106.0	%REC
LCS	VOCs/SVOCs	09042253	Methylene Chloride	106.0	%REC
LCS	VOCs/SVOCs	09042255	Carbon Tetrachloride	106.0	%REC
LCS	VOCs/SVOCs	09042255	Ethylbenzene	106.0	%REC
LCS	VOCs/SVOCs	09052293	Trichloroethene	106.0	%REC
LCS	VOCs/SVOCs	09052300	Bromodichloromethane	106.0	%REC
LCS	VOCs/SVOCs	09052300	Methylene Chloride	106.0	%REC
LCS	VOCs/SVOCs	09052306	2-Chlorophenol	106.0	%REC
LCS	VOCs/SVOCs	09072455	1,1,1-Trichloroethane	106.0	%REC
LCS	VOCs/SVOCs	09072455	1,2-Dichloropropane	106.0	%REC
LCS	VOCs/SVOCs	09072455	Carbon Tetrachloride	106.0	%REC
LCS	VOCs/SVOCs	09072455	Chloroform	106.0	%REC
LCS	VOCs/SVOCs	09072455	Tetrachloroethene	106.0	%REC
LCS	VOCs/SVOCs	09082499	1,1,1-Trichloroethane	106.0	%REC
LCS	VOCs/SVOCs	09082499	Carbon Tetrachloride	106.0	%REC
LCS	VOCs/SVOCs	09082499	Chloroform	106.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09082527	Trans-1,2-Dichloroethene	106.0	%REC
LCS	VOCs/SVOCs	09092581	1,1-Dichloroethene	106.0	%REC
LCS	VOCs/SVOCs	09092582	1,1-Dichloroethene	106.0	%REC
LCS	VOCs/SVOCs	09092584	Chloroform	106.0	%REC
LCS	VOCs/SVOCs	09102650	Trichloroethene	106.0	%REC
LCS	VOCs/SVOCs	09102656	Bromodichloromethane	106.0	%REC
LCS	VOCs/SVOCs	09102656	Chloroform	106.0	%REC
LCS	VOCs/SVOCs	09102668	1,1-Dichloroethene	106.0	%REC
LCS	VOCs/SVOCs	09102668	Ethylbenzene	106.0	%REC
LCS	VOCs/SVOCs	09112685	1,1,1-Trichloroethane	106.0	%REC
LCS	VOCs/SVOCs	09112685	Carbon Tetrachloride	106.0	%REC
LCS	VOCs/SVOCs	09112685	Chloroform	106.0	%REC
LCS	VOCs/SVOCs	09112685	Ethylbenzene	106.0	%REC
LCS	VOCs/SVOCs	09112685	Tetrachloroethene	106.0	%REC
LCS	VOCs/SVOCs	09112685	Trichloroethene	106.0	%REC
LCS	VOCs/SVOCs	09112699	1,3-Dichlorobenzene	106.0	%REC
LCS	VOCs/SVOCs	09112718	Toluene	106.0	%REC
LCS	VOCs/SVOCs	09022120	Carbon Tetrachloride	107.0	%REC
LCS	VOCs/SVOCs	09022120	Trans-1,2-Dichloroethene	107.0	%REC
LCS	VOCs/SVOCs	09042255	Methylene Chloride	107.0	%REC
LCS	VOCs/SVOCs	09052293	Chloroform	107.0	%REC
LCS	VOCs/SVOCs	09052293	Chloroform	107.0	%REC
LCS	VOCs/SVOCs	09072455	Bromodichloromethane	107.0	%REC
LCS	VOCs/SVOCs	09082499	1,1-Dichloroethene	107.0	%REC
LCS	VOCs/SVOCs	09082499	Benzene	107.0	%REC
LCS	VOCs/SVOCs	09082527	Trans-1,2-Dichloroethene	107.0	%REC
LCS	VOCs/SVOCs	09082527	Trichloroethene	107.0	%REC
LCS	VOCs/SVOCs	09092581	Ethylbenzene	107.0	%REC
LCS	VOCs/SVOCs	09092582	Ethylbenzene	107.0	%REC
LCS	VOCs/SVOCs	09102645	Tetrachloroethene	107.0	%REC
LCS	VOCs/SVOCs	09102668	1,1,1-Trichloroethane	107.0	%REC
LCS	VOCs/SVOCs	09102668	Tetrachloroethene	107.0	%REC
LCS	VOCs/SVOCs	09102668	Trans-1,2-Dichloroethene	107.0	%REC
LCS	VOCs/SVOCs	09112685	1,1,1-Trichloroethane	107.0	%REC
LCS	VOCs/SVOCs	09112685	Tetrachloroethene	107.0	%REC
LCS	VOCs/SVOCs	09112685	Trans-1,2-Dichloroethene	107.0	%REC
LCS	VOCs/SVOCs	09112685	Trichloroethene	107.0	%REC
LCS	VOCs/SVOCs	09012069	Bromomethane	108.0	%REC
LCS	VOCs/SVOCs	09022131	1,2-Dichloropropane	108.0	%REC
LCS	VOCs/SVOCs	09032134	Chloroform	108.0	%REC
LCS	VOCs/SVOCs	09042233	1,1-Dichloroethene	108.0	%REC
LCS	VOCs/SVOCs	09042233	Ethylbenzene	108.0	%REC
LCS	VOCs/SVOCs	09052293	1,1,1-Trichloroethane	108.0	%REC
LCS	VOCs/SVOCs	09052293	Chlorobenzene	108.0	%REC
LCS	VOCs/SVOCs	09052293	Trichloroethene	108.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09052293	Trichloroethene	108.0	%REC
LCS	VOCs/SVOCs	09052306	Phenol	108.0	%REC
LCS	VOCs/SVOCs	09062383	1,2-Dichloropropane	108.0	%REC
LCS	VOCs/SVOCs	09082527	1,1-Dichloroethene	108.0	%REC
LCS	VOCs/SVOCs	09092581	1,1,1-Trichloroethane	108.0	%REC
LCS	VOCs/SVOCs	09092582	1,1,1-Trichloroethane	108.0	%REC
LCS	VOCs/SVOCs	09092584	Carbon Tetrachloride	108.0	%REC
LCS	VOCs/SVOCs	09102656	Carbon Tetrachloride	108.0	%REC
LCS	VOCs/SVOCs	09102656	Toluene	108.0	%REC
LCS	VOCs/SVOCs	09102668	Trichloroethene	108.0	%REC
LCS	VOCs/SVOCs	09112699	1,2-Dichloropropane	108.0	%REC
LCS	VOCs/SVOCs	09112699	Benzene	108.0	%REC
LCS	VOCs/SVOCs	09112718	1,1,1-Trichloroethane	108.0	%REC
LCS	VOCs/SVOCs	09112718	1,2-Dichloropropane	108.0	%REC
LCS	VOCs/SVOCs	09112718	Trans-1,2-Dichloroethene	108.0	%REC
LCS	VOCs/SVOCs	09042255	Carbon Tetrachloride	109.0	%REC
LCS	VOCs/SVOCs	09052293	1,1,1-Trichloroethane	109.0	%REC
LCS	VOCs/SVOCs	09052293	Ethylbenzene	109.0	%REC
LCS	VOCs/SVOCs	09052293	Tetrachloroethene	109.0	%REC
LCS	VOCs/SVOCs	09052306	2,4-Dinitrotoluene	109.0	%REC
LCS	VOCs/SVOCs	09072455	1,1-Dichloroethene	109.0	%REC
LCS	VOCs/SVOCs	09072455	Bromodichloromethane	109.0	%REC
LCS	VOCs/SVOCs	09072455	Chloroform	109.0	%REC
LCS	VOCs/SVOCs	09082499	Toluene	109.0	%REC
LCS	VOCs/SVOCs	09082527	Ethylbenzene	109.0	%REC
LCS	VOCs/SVOCs	09082527	Toluene	109.0	%REC
LCS	VOCs/SVOCs	09082527	Toluene	109.0	%REC
LCS	VOCs/SVOCs	09092581	1,1,1-Trichloroethane	109.0	%REC
LCS	VOCs/SVOCs	09092582	1,1,1-Trichloroethane	109.0	%REC
LCS	VOCs/SVOCs	09102645	Methylene Chloride	109.0	%REC
LCS	VOCs/SVOCs	09102656	1,1,1-Trichloroethane	109.0	%REC
LCS	VOCs/SVOCs	09102658	1,1-Dichloroethene	109.0	%REC
LCS	VOCs/SVOCs	09102658	Carbon Tetrachloride	109.0	%REC
LCS	VOCs/SVOCs	09102668	Carbon Tetrachloride	109.0	%REC
LCS	VOCs/SVOCs	09102668	Trichloroethene	109.0	%REC
LCS	VOCs/SVOCs	09112699	Trans-1,2-Dichloroethene	109.0	%REC
LCS	VOCs/SVOCs	09112699	Trichloroethene	109.0	%REC
LCS	VOCs/SVOCs	09112718	Bromodichloromethane	109.0	%REC
LCS	VOCs/SVOCs	09112718	Toluene	109.0	%REC
LCS	VOCs/SVOCs	09032134	1,2-Dichloropropane	110.0	%REC
LCS	VOCs/SVOCs	09032134	4-Nitrophenol	110.0	%REC
LCS	VOCs/SVOCs	09032134	Chlorobenzene	110.0	%REC
LCS	VOCs/SVOCs	09032134	Ethylbenzene	110.0	%REC
LCS	VOCs/SVOCs	09062383	Benzene	110.0	%REC
LCS	VOCs/SVOCs	09062383	Chloroform	110.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09062383	Ethylbenzene	110.0	%REC
LCS	VOCs/SVOCs	09062383	Methylene Chloride	110.0	%REC
LCS	VOCs/SVOCs	09082527	Ethylbenzene	110.0	%REC
LCS	VOCs/SVOCs	09092581	Carbon Tetrachloride	110.0	%REC
LCS	VOCs/SVOCs	09092581	Tetrachloroethene	110.0	%REC
LCS	VOCs/SVOCs	09092581	Tetrachloroethene	110.0	%REC
LCS	VOCs/SVOCs	09092582	Carbon Tetrachloride	110.0	%REC
LCS	VOCs/SVOCs	09092582	Tetrachloroethene	110.0	%REC
LCS	VOCs/SVOCs	09092582	Tetrachloroethene	110.0	%REC
LCS	VOCs/SVOCs	09092584	1,1,1-Trichloroethane	110.0	%REC
LCS	VOCs/SVOCs	09102650	1,1,1-Trichloroethane	110.0	%REC
LCS	VOCs/SVOCs	09102658	1,1,1-Trichloroethane	110.0	%REC
LCS	VOCs/SVOCs	09112699	Chlorobenzene	110.0	%REC
LCS	VOCs/SVOCs	09112699	Ethylbenzene	110.0	%REC
LCS	VOCs/SVOCs	09112718	Methylene Chloride	110.0	%REC
LCS	VOCs/SVOCs	09112718	Trans-1,2-Dichloroethene	110.0	%REC
LCS	VOCs/SVOCs	09042255	Carbon Tetrachloride	111.0	%REC
LCS	VOCs/SVOCs	09052293	Toluene	111.0	%REC
LCS	VOCs/SVOCs	09052306	4-Nitrophenol	111.0	%REC
LCS	VOCs/SVOCs	09062383	Bromodichloromethane	111.0	%REC
LCS	VOCs/SVOCs	09072455	1,1,1-Trichloroethane	111.0	%REC
LCS	VOCs/SVOCs	09082499	1,1-Dichloroethene	111.0	%REC
LCS	VOCs/SVOCs	09092581	Carbon Tetrachloride	111.0	%REC
LCS	VOCs/SVOCs	09092582	Carbon Tetrachloride	111.0	%REC
LCS	VOCs/SVOCs	09102668	1,1-Dichloroethene	111.0	%REC
LCS	VOCs/SVOCs	09102668	Methylene Chloride	111.0	%REC
LCS	VOCs/SVOCs	09112685	Trans-1,2-Dichloroethene	111.0	%REC
LCS	VOCs/SVOCs	09112718	Benzene	111.0	%REC
LCS	VOCs/SVOCs	09112718	Chloroform	111.0	%REC
LCS	VOCs/SVOCs	09032134	Benzene	112.0	%REC
LCS	VOCs/SVOCs	09042255	1,1,1-Trichloroethane	112.0	%REC
LCS	VOCs/SVOCs	09042255	Carbon Tetrachloride	112.0	%REC
LCS	VOCs/SVOCs	09052293	Carbon Tetrachloride	112.0	%REC
LCS	VOCs/SVOCs	09062383	1,1-Dichloroethene	112.0	%REC
LCS	VOCs/SVOCs	09072455	Carbon Tetrachloride	112.0	%REC
LCS	VOCs/SVOCs	09082527	1,1,1-Trichloroethane	112.0	%REC
LCS	VOCs/SVOCs	09092584	Carbon Tetrachloride	112.0	%REC
LCS	VOCs/SVOCs	09102645	1,1-Dichloroethene	112.0	%REC
LCS	VOCs/SVOCs	09102668	Methylene Chloride	112.0	%REC
LCS	VOCs/SVOCs	09112699	Tetrachloroethene	112.0	%REC
LCS	VOCs/SVOCs	09112699	Toluene	112.0	%REC
LCS	VOCs/SVOCs	09112718	1,1-Dichloroethene	112.0	%REC
LCS	VOCs/SVOCs	09112718	Carbon Tetrachloride	112.0	%REC
LCS	VOCs/SVOCs	09112718	Trichloroethene	112.0	%REC
LCS	VOCs/SVOCs	09032134	4-Nitrophenol	113.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	VOCs/SVOCs	09042233	Carbon Tetrachloride	113.0	%REC
LCS	VOCs/SVOCs	09042255	1,1,1-Trichloroethane	113.0	%REC
LCS	VOCs/SVOCs	09052293	Carbon Tetrachloride	113.0	%REC
LCS	VOCs/SVOCs	09052293	Carbon Tetrachloride	113.0	%REC
LCS	VOCs/SVOCs	09062399	1,1-Dichloroethene	113.0	%REC
LCS	VOCs/SVOCs	09082499	Toluene	113.0	%REC
LCS	VOCs/SVOCs	09092584	Tetrachloroethene	113.0	%REC
LCS	VOCs/SVOCs	09092584	Tetrachloroethene	113.0	%REC
LCS	VOCs/SVOCs	09112699	Ethylbenzene	113.0	%REC
LCS	VOCs/SVOCs	09012069	Chloromethane	114.0	%REC
LCS	VOCs/SVOCs	09012069	Vinyl Chloride	114.0	%REC
LCS	VOCs/SVOCs	09032134	Methylene Chloride	114.0	%REC
LCS	VOCs/SVOCs	09042233	1,1,1-Trichloroethane	114.0	%REC
LCS	VOCs/SVOCs	09072455	1,1-Dichloroethene	114.0	%REC
LCS	VOCs/SVOCs	09082527	Carbon Tetrachloride	114.0	%REC
LCS	VOCs/SVOCs	09092584	1,1,1-Trichloroethane	114.0	%REC
LCS	VOCs/SVOCs	09112699	1,2-Dichloropropane	114.0	%REC
LCS	VOCs/SVOCs	09112718	Methylene Chloride	114.0	%REC
LCS	VOCs/SVOCs	09032134	Trans-1,2-Dichloroethene	115.0	%REC
LCS	VOCs/SVOCs	09062383	Chlorobenzene	115.0	%REC
LCS	VOCs/SVOCs	09062383	Tetrachloroethene	115.0	%REC
LCS	VOCs/SVOCs	09082511	Methylene Chloride	115.0	%REC
LCS	VOCs/SVOCs	09082527	1,1-Dichloroethene	115.0	%REC
LCS	VOCs/SVOCs	09092581	Toluene	115.0	%REC
LCS	VOCs/SVOCs	09092582	Toluene	115.0	%REC
LCS	VOCs/SVOCs	09112699	Tetrachloroethene	115.0	%REC
LCS	VOCs/SVOCs	09112718	Trichloroethene	115.0	%REC
LCS	VOCs/SVOCs	09102650	Carbon Tetrachloride	116.0	%REC
LCS	VOCs/SVOCs	09032134	Toluene	117.0	%REC
LCS	VOCs/SVOCs	09042255	1,1,1-Trichloroethane	117.0	%REC
LCS	VOCs/SVOCs	09042255	1,1,1-Trichloroethane	117.0	%REC
LCS	VOCs/SVOCs	09052293	1,1,1-Trichloroethane	117.0	%REC
LCS	VOCs/SVOCs	09062383	Toluene	117.0	%REC
LCS	VOCs/SVOCs	09112718	1,1,1-Trichloroethane	117.0	%REC
LCS	VOCs/SVOCs	09092584	Toluene	118.0	%REC
LCS	VOCs/SVOCs	09092584	Toluene	118.0	%REC
LCS	VOCs/SVOCs	09112699	Chlorobenzene	118.0	%REC
LCS	VOCs/SVOCs	09062383	Trichloroethene	119.0	%REC
LCS	VOCs/SVOCs	09092581	Toluene	119.0	%REC
LCS	VOCs/SVOCs	09092582	Toluene	119.0	%REC
LCS	VOCs/SVOCs	09112718	Carbon Tetrachloride	121.0	%REC
LCS	VOCs/SVOCs	09112685	1,1-Dichloroethene	123.0	%REC
LCS	VOCs/SVOCs	09112718	1,1-Dichloroethene	124.0	%REC
LCS	VOCs/SVOCs	09032134	1,1-Dichloroethene	126.0	%REC
LCS	VOCs/SVOCs	09112685	1,1-Dichloroethene	126.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	WQP	09112685	No3+No2 As N	93.0	%REC
LCS	WQP	09112685	No3+No2 As N	93.0	%REC
LCS	WQP	09042240	No3+No2 As N	96.0	%REC
LCS	WQP	09052281	No3+No2 As N	96.0	%REC
LCS	WQP	09052281	No3+No2 As N	97.0	%REC
LCS	WQP	10012800	Hardness As Caco3	97.6	%REC
LCS	WQP	09042248	Total Suspended Solids	97.8	%REC
LCS	WQP	09112725	NO2+NO3 As N	97.8	%REC
LCS	WQP	09062376	NO2+NO3 As N	97.9	%REC
LCS	WQP	09012058	No3+No2 As N	98.0	%REC
LCS	WQP	09042240	No3+No2 As N	98.0	%REC
LCS	WQP	09062399	No3+No2 As N	98.0	%REC
LCS	WQP	09062399	No3+No2 As N	98.0	%REC
LCS	WQP	09112686	Hardness As Caco3	98.3	%REC
LCS	WQP	09052286	NO2+NO3 As N	98.5	%REC
LCS	WQP	09072445	Hardness As Caco3	98.6	%REC
LCS	WQP	09122742	Hardness As Caco3	98.7	%REC
LCS	WQP	09052278	NO2+NO3 As N	99.0	%REC
LCS	WQP	09062370	Total Suspended Solids	99.0	%REC
LCS	WQP	09062383	No3+No2 As N	99.0	%REC
LCS	WQP	09092622	Hardness As Caco3	99.1	%REC
LCS	WQP	09042246	NO2+NO3 As N	99.2	%REC
LCS	WQP	09042221	Hardness As Caco3	99.4	%REC
LCS	WQP	09052279	Hardness As Caco3	99.4	%REC
LCS	WQP	09052335	NO2+NO3 As N	99.5	%REC
LCS	WQP	09052339	NO2+NO3 As N	99.5	%REC
LCS	WQP	09062401	Hardness As Caco3	99.5	%REC
LCS	WQP	09102672	Hardness As Caco3	99.5	%REC
LCS	WQP	09052315	NO2+NO3 As N	99.7	%REC
LCS	WQP	09062386	Hardness As Caco3	99.8	%REC
LCS	WQP	09102651	Hardness As Caco3	99.9	%REC
LCS	WQP	09012058	No3+No2 As N	100.0	%REC
LCS	WQP	09022129	Hardness As Caco3	100.0	%REC
LCS	WQP	09032157	Hardness As Caco3	100.0	%REC
LCS	WQP	09032175	Hardness As Caco3	100.0	%REC
LCS	WQP	09032186	Hardness As Caco3	100.0	%REC
LCS	WQP	09042233	No3+No2 As N	100.0	%REC
LCS	WQP	09042245	Total Suspended Solids	100.0	%REC
LCS	WQP	09052293	No3+No2 As N	100.0	%REC
LCS	WQP	09052297	Hardness As Caco3	100.0	%REC
LCS	WQP	09052315	Hardness As Caco3	100.0	%REC
LCS	WQP	09052332	No3+No2 As N	100.0	%REC
LCS	WQP	09052332	No3+No2 As N	100.0	%REC
LCS	WQP	09052339	Hardness As Caco3	100.0	%REC
LCS	WQP	09062357	NO2+NO3 As N	100.0	%REC

Table B−5 (continued). Lab Control Sample (LCS) Data for Metals, VOCs/SVOCs, and Water-Quality Parameters

RESULT_TYPE_CODE	Analyte Group	RIN	Analyte	Result	Units
LCS	WQP	09062383	No3+No2 As N	100.0	%REC
LCS	WQP	09012069	Hardness As Caco3	101.0	%REC
LCS	WQP	09012070	Nitrite	101.0	%REC
LCS	WQP	09012070	Nitrite	101.0	%REC
LCS	WQP	09022116	Hardness As Caco3	101.0	%REC
LCS	WQP	09042233	No3+No2 As N	101.0	%REC
LCS	WQP	09042245	Hardness As Caco3	101.0	%REC
LCS	WQP	09042248	Hardness As Caco3	101.0	%REC
LCS	WQP	09042254	Hardness As Caco3	101.0	%REC
LCS	WQP	09052293	No3+No2 As N	101.0	%REC
LCS	WQP	09082520	Hardness As Caco3	101.0	%REC
LCS	WQP	09052306	No3+No2 As N	102.0	%REC
LCS	WQP	09052306	No3+No2 As N	102.0	%REC
LCS	WQP	09052341	No3+No2 As N	102.0	%REC
LCS	WQP	09062404	No3+No2 As N	102.0	%REC
LCS	WQP	09082552	No3+No2 As N	102.0	%REC
LCS	WQP	09082552	No3+No2 As N	102.0	%REC
LCS	WQP	09092612	No3+No2 As N	102.0	%REC
LCS	WQP	09092612	No3+No2 As N	102.0	%REC
LCS	WQP	09102645	No3+No2 As N	102.0	%REC
LCS	WQP	09102650	No3+No2 As N	102.0	%REC
LCS	WQP	09102650	No3+No2 As N	102.0	%REC
LCS	WQP	09112699	No3+No2 As N	102.0	%REC
LCS	WQP	09122778	No3+No2 As N	102.0	%REC
LCS	WQP	09042240	No3+No2 As N	103.0	%REC
LCS	WQP	09062370	NO2+NO3 As N	103.0	%REC
LCS	WQP	09062404	No3+No2 As N	103.0	%REC
LCS	WQP	09122768	No3+No2 As N	103.0	%REC
LCS	WQP	09102645	No3+No2 As N	104.0	%REC
LCS	WQP	09102650	No3+No2 As N	104.0	%REC
LCS	WQP	09112699	No3+No2 As N	104.0	%REC
LCS	WQP	09122778	No3+No2 As N	104.0	%REC
LCS	WQP	09122746	No3+No2 As N	105.0	%REC
LCS	WQP	09122768	No3+No2 As N	105.0	%REC
LCS	WQP	09042240	No3+No2 As N	106.0	%REC
LCS	WQP	09052341	No3+No2 As N	107.0	%REC
LCS	WQP	09122746	No3+No2 As N	107.0	%REC

Table B–6. Equipment Rinsate Results of Interest

QC Type	Sample Date	Analyte	Result	Lab Qual	Error 2 Sigma	Units	Validation	Detect Limit	Result/ DetLim	Filtered	RIN
E	11/10/2009	Boron	1.6	B		µg/L		1.6	1.0	0001	09112699
E	11/11/2009	Chrysene	0.61	J		µg/L		0.54	1.1	N001	09112699
E	9/2/2009	Bis(2-ethylhexyl) phthalate	0.68	J		µg/L	J	0.56	1.2	N001	09082527
E	11/10/2009	Zinc	6.1	B		µg/L		4.5	1.4	0001	09112699
E	9/2/2009	Zinc	6.4	B		µg/L	J	4.5	1.4	0001	09082527
E	11/11/2009	Zinc	7.2	B		µg/L		4.5	1.6	0001	09112699
E	3/3/2009	Zinc	14	B		µg/L		4.5	3.1	0001	09032134

B.5 Automated Surface-Water Sample Collection Field Information

The following tables present the sample collection information by monitoring location for all automated surface-water samples collected during CY 2009. The fields in each table are defined as follows:

- RIN#: The sample number assigned to the specific sampling event. This number corresponds to the sample number stored in SEEPro.
- START DATE-TIME: The date and time of the beginning of the composite (all automated surface-water samples are composite samples).
- END DATE-TIME: The end of the composite sampling period. It is generally the date-time of the first grab sample of the next composite sampling period.
- NUMBER OF GRABS: The total number of individual grab samples comprising the composite sample. For continuous flow-paced samples the grab size is uniformly 200 mL. The grab size for the other sample types varies, but is sized such that an adequate amount of water is collected to complete all required analyses.
- AVERAGE FLOW: The average flow rate (in cfs; for locations with flow measurement) during the sample period. It is calculated by arithmetically averaging the instantaneous flow rates at each grab sample time for the entire composite sample period. If there are gaps in the flow data, resulting in missing FLOW VOLUME values, the AVERAGE FLOW can still be determined if none of the grab samples were collected during the missing flow data period.
- FLOW VOLUME: The total measured surface-water flow volume (in cf; for continuous flow-paced samples only) during the entire composite sampling period.

B.5.1 Location GS01

Table B–7. Sample Collection Information for Samples Collected at GS01: Calendar Year 2009

GS01 RIN#	Start Date-Time	End Date-Time	Number of Grabs [200 mL]	Average Flow [cfs]	Flow Volume [cf]
NSQ	5/22/2008 12:31	1/6/2009 3:07	1; NSQ[a]	NA	6048
09022093-284	1/6/2009 3:07	2/2/2009 9:48	31	0.047	63813
09032175-915	2/2/2009 9:48	3/18/2009 11:04	19	0.028	85137
09042205-143	3/18/2009 11:04	3/31/2009 8:32	31	0.835	123164
09042221-664	3/31/2009 8:32	4/6/2009 9:41	21	0.484	243020
09042245-905	4/6/2009 9:41	4/18/2009 14:47	27	0.795	308440
09042248-941	4/18/2009 14:47	4/20/2009 16:28	55	16.616	1862505
09042254-062	4/20/2009 16:28	4/24/2009 11:14	54	24.445	2030729
09052279-319	4/24/2009 11:14	4/29/2009 9:10	46	2.007	530482
09052286-512	4/29/2009 9:10	5/5/2009 10:12	28	0.659	318473
09052297-816	5/5/2009 10:12	5/13/2009 8:45	29	0.271	164495
09052339-661	5/13/2009 8:45	5/26/2009 12:57	42	2.950	240432
09052342-365	5/26/2009 12:57	5/28/2009 9:49	26	2.429	338481
09062357-455	5/28/2009 9:49	5/30/2009 10:40	57	2.073	247603
09062370-148	5/30/2009 10:40	6/1/2009 12:48	28	1.321	191090
09062376-301	6/1/2009 12:48	6/3/2009 8:44	104	6.071	595941
09062386-488	6/3/2009 8:44	6/4/2009 11:11	40	2.546	232248
09062418-837	6/4/2009 11:11	6/18/2009 8:51	37	0.485	377687
09082493-549	6/18/2009 8:51	7/31/2009 10:40	61	1.276	183252
NSQ	7/31/2009 10:40	10/7/2009 12:53	0[b]	NA	131
09112711-774	10/7/2009 12:53	11/12/2009 14:36	68	0.604	301562
09122742-865	11/12/2009 14:36	11/24/2009 9:37	76	0.449	405079
10012800-760	11/24/2009 9:37	12/22/2009 10:39	86	Missing Flow Data	Missing Flow Data
10012825-827	12/22/2009 10:39	1/13/2010 10:57	45	Missing Flow Data	Missing Flow Data

[a]Minimal streamflow; new sample started at calendar year start
[b]Minimal streamflow; new sample started at seasonally appropriate pace

B.5.2 Location GS03

Table B–8. Sample Collection Information for Samples Collected at GS03: Calendar Year 2009

GS03 RIN#	Start Date-Time	End Date-Time	Number of Grabs [200 mL]	Average Flow [cfs]	Flow Volume [cf]
08011351-783	7/30/2007 11:06	1/6/2009 12:32	17	0.014	10619
NSQ	1/6/2009 12:32	4/19/2009 12:08	0[a]	NA	0
09042245-909	4/19/2009 12:08	4/20/2009 9:21	101	16.861	960367
09042254-061	4/20/2009 9:21	4/24/2009 10:53	38	15.205	941942
09052315-127	4/24/2009 10:53	5/19/2009 8:59	19	0.592	90885
09052335-003	5/19/2009 8:59	5/21/2009 10:10	41	1.063	131560
09052335-001	5/21/2009 10:10	5/23/2009 12:25	65	1.180	212625
09052335-013	5/23/2009 12:25	5/25/2009 11:41	71	2.589	436006
09052339-665	5/25/2009 11:41	5/27/2009 10:58	86	3.072	516250
09062357-460	5/27/2009 10:58	5/29/2009 10:37	83	2.439	413439
09062370-143	5/29/2009 10:37	5/31/2009 10:53	66	1.990	345195
09062376-299	5/31/2009 10:53	6/2/2009 11:16	56	1.804	305363
09062386-493	6/2/2009 11:16	6/6/2009 9:29	55	2.429	637459
09072445-467	6/6/2009 9:29	7/6/2009 13:46	26	0.166	42531
NSQ	7/6/2009 13:46	10/6/2009 14:23	0[a]	NA	0
NSQ	10/6/2009 14:23	12/12/2009 14:10	0[a]	NA	0
09122767-844	12/12/2009 14:10	12/14/2009 12:50	34	1.259	110420
09122781-478	12/14/2009 12:50	12/16/2009 10:07	23	1.444	208041
09122781-480	12/16/2009 10:07	12/18/2009 13:13	60	1.574	260722
09122781-481	12/18/2009 13:13	12/22/2009 12:11	53	1.162	340313
10012825-829	12/22/2009 12:11	1/13/2010 10:32	31	0.001	3926

[a]No streamflow; new sample started at seasonally appropriate pace

B.5.3 Location GS05

Table B–9. Sample Collection Information for Samples Collected at GS05: Calendar Year 2009

GS05 RIN#	Start Date-Time	End Date-Time	Number of Grabs [200 mL]	Average Flow [cfs]	Flow Volume [cf]
09012050-181	10/1/2008 13:05	1/2/2009 12:23	12	0.026	Missing Flow Data
09032144-372	1/2/2009 12:23	3/2/2009 10:11	38	Missing Flow Data	Missing Flow Data
09042221-668	3/2/2009 10:11	4/6/2009 12:13	14	0.142	144668
09042248-930	4/6/2009 12:13	4/20/2009 12:50	83	6.235	903441
09042254-066	4/20/2009 12:50	4/24/2009 12:52	64	10.888	714835
09052279-312	4/24/2009 12:52	4/30/2009 12:28	23	0.946	241268
09052342-371	4/30/2009 12:28	5/28/2009 11:50	28	0.358	280063
09092622-272	5/28/2009 11:50	9/22/2009 14:36	71	1.311	727444
09122742-863	9/22/2009 14:36	11/17/2009 13:07	75	0.310	715968
10012825-833	11/17/2009 13:07	1/13/2010 13:23	75	Missing Flow Data	Missing Flow Data

B.5.4 Location GS08

Table B–10. Sample Collection Information for Samples Collected at GS08: Calendar Year 2009

GS08 RIN#	Start Date-Time	End Date-Time	Number of Grabs [200 mL]	Average Flow [cfs]	Flow Volume [cf]
09052335-999	5/19/2009 10:35	5/21/2009 9:39	48	1.373	234829
09052335-002	5/21/2009 9:39	5/23/2009 11:06	50	1.396	246558
09052335-009	5/23/2009 11:06	5/25/2009 10:27	46	1.329	226781
09052339-663	5/25/2009 10:27	5/27/2009 10:16	48	1.311	224636
09062357-457	5/27/2009 10:16	5/29/2009 9:35	37	1.082	180815
09062370-144	5/29/2009 9:35	5/31/2009 9:53	40	0.966	163473
09062376-297	5/31/2009 9:53	6/2/2009 10:00	32	0.736	123518
09062386-492	6/2/2009 10:00	6/6/2009 10:30	40	0.899	287048

B.5.5 Location GS10

Table B–11. Sample Collection Information for Samples Collected at GS10: Calendar Year 2009

GS10 RIN#	Start Date-Time	End Date-Time	Number of Grabs [200 mL]	Average Flow [cfs]	Flow Volume [cf]
09012069-270	12/1/2008 9:32	1/20/2009 11:04	27	0.015	45120
09022129-099	1/20/2009 11:04	2/23/2009 10:57	26	0.011	23238
09032175-913	2/23/2009 10:57	3/12/2009 10:48	27	0.009	11820
09032186-704	3/12/2009 10:48	3/29/2009 18:27	41	0.025	16717
09042245-904	3/29/2009 18:27	4/14/2009 9:07	46	0.049	40839
09042245-907	4/14/2009 9:07	4/19/2009 10:32	85	0.981	93841
09042248-933	4/19/2009 10:32	4/20/2009 10:03	110	13.782	477166
NSQ	4/20/2009 10:03	4/21/2009 8:23	0[a]	NA	198229
09052279-313	4/21/2009 8:23	4/30/2009 10:53	48	0.232	121021
09052339-655	4/30/2009 10:53	5/26/2009 10:04	104	0.223	206625
09062386-486	5/26/2009 10:04	6/3/2009 9:29	80	0.478	159171
09062401-025	6/3/2009 9:29	6/17/2009 10:11	80	0.139	151240
09072445-463	6/17/2009 10:11	7/6/2009 12:25	51	0.074	100364
09082520-013	7/6/2009 12:25	8/13/2009 9:38	50	0.039	85467
09092622-271	8/13/2009 9:38	9/22/2009 13:54	58	0.016	50038
09102672-027	9/22/2009 13:54	10/22/2009 9:23	29	0.015	34075
09112686-463	10/22/2009 9:23	10/31/2009 14:12	23	0.034	21725
09142781-473	10/31/2009 14:12	12/22/2009 11:07	82	0.058	169817
10012800-757	12/22/2009 11:07	1/11/2010 11:33	76	Missing Flow Data	Missing Flow Data

[a]Equipment malfunction

B.5.6 Location GS11

Table B–12. Sample Collection Information for Samples Collected at GS11: Calendar Year 2009

GS11 RIN#	Start Date-Time	End Date-Time	Number of Grabs [200 mL]	Average Flow [cfs]	Flow Volume [cf]
09052335-011	5/23/2009 11:33	5/25/2009 10:51	50	1.241	211344
09052339-662	5/25/2009 10:51	5/27/2009 10:04	55	1.380	234610
09062357-458	5/27/2009 10:04	5/29/2009 9:54	50	1.234	212566
09062370-146	5/29/2009 9:54	5/31/2009 9:44	38	1.061	180953
09062376-296	5/31/2009 9:44	6/2/2009 9:49	42	0.997	168188
09062386-487	6/2/2009 9:49	6/5/2009 10:45	42	0.848	208197
09122767-842	12/12/2009 14:49	12/14/2009 11:18	46	1.445	234249
09122781-482	12/14/2009 11:18	12/16/2009 12:10	36	1.301	207822
09122781-483	12/16/2009 12:10	12/18/2009 11:26	44	1.365	226960
09122781-484	12/18/2009 11:26	12/21/2009 14:45	42	1.178	289241

B.5.7 Location GS13

Table B–13. Collection Information for Samples Collected at GS13: Calendar Year 2009

GS13 RIN#	Start Date-Time	End Date-Time	Number of Grabs [200 mL]	Average Flow [cfs]	Flow Volume [cf]
09012069-269	12/29/2008 9:20	1/15/2009 9:33	20	0.044	61286
09022093-283	1/15/2009 9:33	2/2/2009 11:43	21	0.056	76248
09022116-815	2/2/2009 11:43	2/16/2009 10:28	11	0.037	44917
09032144-374	2/16/2009 10:28	3/2/2009 10:44	14	0.037	47678
09032175-914	3/2/2009 10:44	3/18/2009 12:18	10	0.033	45116
09042205-142	3/18/2009 12:18	3/31/2009 10:47	29	0.912	123455
09042254-074	3/31/2009 10:47	4/18/2009 15:51	21	0.374	217663
09042254-068	4/18/2009 15:51	4/24/2009 12:19	65	5.459	1476871
09052279-320	4/24/2009 12:19	4/30/2009 11:07	47	0.794	290735
09052297-863	4/30/2009 11:07	5/15/2009 9:00	44	0.238	264262
09062376-300	5/15/2009 9:00	6/2/2009 10:42	53	1.020	349564
09062386-495	6/2/2009 10:42	6/9/2009 10:06	84	1.159	300687
09072445-465	6/9/2009 10:06	7/6/2009 13:00	57	0.266	367911
09072470-178	7/6/2009 13:00	7/21/2009 10:35	42	0.083	50346
09082517-542	7/21/2009 10:35	8/6/2009 12:04	109	0.063	66743
09082543-274	8/6/2009 12:04	8/21/2009 8:41	34	0.023	25296
09102672-028	8/21/2009 8:41	10/27/2009 9:42	29	0.036	16049
09112686-464	10/27/2009 9:42	10/31/2009 13:53	35	0.857	90020
09112711-775	10/31/2009 13:53	11/12/2009 14:18	58	1.363	173998
09122742-866	11/12/2009 14:18	12/1/2009 11:04	68	0.174	204811
09122781-479	12/1/2009 11:04	12/22/2009 11:39	53	0.101	145968
10012825-828	12/22/2009 11:39	1/13/2010 12:48	14	0.090	161169

B.5.8 Location GS31

Table B–14. Sample Collection Information for Samples Collected at GS31: Calendar Year 2009

GS31 RIN#	Start Date-Time	End Date-Time	Number of Grabs [200 mL]	Average Flow [cfs]	Flow Volume [cf]
09052342-366	5/26/2009 11:58	5/28/2009 10:35	54	0.982	163749
09062357-454	5/28/2009 10:35	5/30/2009 9:51	24	0.526	72218
09062370-147	5/30/2009 9:51	6/1/2009 11:36	48	1.194	158719
09062376-302	6/1/2009 11:36	6/4/2009 12:30	44	1.003	252413

B.5.9 Location GS51

Table B–15. Sample Collection Information for Samples Collected at GS51: Calendar Year 2009

GS51 RIN#	Start Date-Time	End Date-Time	Number of Grabs [200 mL]	Average Flow [cfs]	Flow Volume [cf]
NSQ	1/8/2009 10:51	4/20/2009 15:43	0[a]	NA	16667
09042254-063	4/20/2009 15:43	4/24/2009 11:46	31	0.045	1091
09052342-368	4/24/2009 11:46	6/2/2009 5:48	29	0.104	2917
09062370-149	6/2/2009 5:48	6/3/2009 9:10	42	0.110	2914
NSQ	6/3/2009 9:10	1/13/2010 11:22	8[b]	NA	680

[a]Equipment malfunction
[b]Minimal streamflow; new sample started at calendar year start

B.5.10 Location GS59

Table B–16. Sample Collection Information for Samples Collected at GS59: Calendar Year 2009

GS59 RIN#	Start Date-Time	End Date-Time	Number of Grabs	Average Flow [cfs]	Flow Volume [cf]
09012050-183	10/1/2008 12:44	1/2/2009 11:44	37	0.107	Missing Flow Data
09032144-370	1/2/2009 11:44	3/2/2009 9:52	17	Missing Flow Data	Missing Flow Data
09042221-663	3/2/2009 9:52	4/6/2009 11:23	25	0.367	438322
09042248-937	4/6/2009 11:23	4/20/2009 15:14	100	11.516	1734328
09042254-064	4/20/2009 15:14	4/24/2009 12:02	53	13.420	958610
09052279-315	4/24/2009 12:02	4/30/2009 10:20	27	1.429	457960
09052342-369	4/30/2009 10:20	5/28/2009 11:15	62	0.717	1056333
09092622-500	5/28/2009 11:15	9/22/2009 14:42	72	1.302	1234174
09122742-861	9/22/2009 14:42	11/17/2009 12:39	45	0.399	788975
10012825-831	11/17/2009 12:39	1/13/2010 11:34	38	0.355	Missing Flow Data

B.5.11 Location SW018

Table B–17. Sample Collection Information for Samples Collected at SW018: Calendar Year 2009

SW018 RIN#	Start Date-Time	End Date-Time	Number of Grabs	Average Flow [cfs]	Flow Volume [cf]
NA	11/14/2008 10:08	2/2/2009 10:56	49	Missing Flow Data	Missing Flow Data
NA	2/2/2009 10:56	3/2/2009 10:31	82	0.004	11470
NA	3/2/2009 10:31	4/6/2009 10:07	22	0.012	22670
NA	4/6/2009 10:07	4/20/2009 14:20	101	1.042	126162
NA	4/20/2009 14:20	5/19/2009 11:34	103	0.168	124134
NA	5/19/2009 11:34	6/17/2009 10:35	79	0.057	86758
NA	6/17/2009 10:35	9/22/2009 14:12	86	0.016	84623
NA	9/22/2009 14:12	11/12/2009 13:58	62	0.017	51069
NA	11/12/2009 13:58	2/2/2010 12:02	103	Missing Flow Data	Missing Flow Data

Notes: SW018 samples are collected, but not routinely analyzed, per the monitoring objective. These samples are only analyzed when warranted by a source evaluation.

B.5.12 Location SW027

Table B–18. Sample Collection Information for Samples Collected at SW027: Calendar Year 2009

SW027 RIN#	Start Date-Time	End Date-Time	Number of Grabs	Average Flow [cfs]	Flow Volume [cf]
NSQ	4/26/2007 11:41	4/18/2009 17:26	12[a]	NA	4008
09042254-069	4/18/2009 17:26	4/20/2009 10:34	109	3.600	119269
09042248-940	4/20/2009 10:34	4/20/2009 16:09	79	1.895	23988
09042254-055	4/20/2009 16:09	4/24/2009 11:30	62	1.385	44635
NSQ	4/24/2009 11:30	1/13/2010 11:11	2[a]	NA	1332

[a]Minimal streamflow; new sample started at calendar year start

B.5.13 Location SW093

Table B–19. Collection Information for Samples Collected at SW093: Calendar Year 2009

SW093 RIN#	Start Date-Time	End Date-Time	Number of Grabs [200 mL]	Average Flow [cfs]	Flow Volume [cf]
09012069-268	12/18/2008 10:46	1/20/2009 11:35	40	0.018	31050
09022116-814	1/20/2009 11:35	2/16/2009 10:10	29	0.010	20099
09032157-672	2/16/2009 10:10	3/6/2009 9:43	24	0.010	14674
09032186-707	3/6/2009 9:43	3/29/2009 18:47	101	0.912	53411
09042221-662	3/29/2009 18:47	4/6/2009 10:28	43	0.342	97675
09042245-906	4/6/2009 10:28	4/18/2009 15:32	48	0.406	85491
09042245-908	4/18/2009 15:32	4/19/2009 11:13	40	4.028	278498
09042248-939	4/19/2009 11:13	4/20/2009 14:00	97	9.795	668946
09052279-317	4/20/2009 14:00	4/29/2009 9:48	48	2.462	664435
09052297-815	4/29/2009 9:48	5/11/2009 10:04	45	0.234	195225
09052339-660	5/11/2009 10:04	5/26/2009 10:23	38	1.244	168391
09062386-491	5/26/2009 10:23	6/3/2009 10:02	88	1.389	259317
09062401-028	6/3/2009 10:02	6/17/2009 11:53	76	0.303	279933
09072445-466	6/17/2009 11:53	7/6/2009 12:43	55	0.320	162851
09082520-015	7/6/2009 12:43	8/13/2009 10:12	65	0.071	89906
09102651-405	8/13/2009 10:12	10/6/2009 9:42	30	0.008	30876
09112686-465	10/6/2009 9:42	10/31/2009 13:37	64	0.242	100878
09122742-860	10/31/2009 13:37	11/24/2009 8:34	75	0.306	241098
10012800-759	11/24/2009 8:34	1/11/2010 12:07	51	0.058	169724

B.6 Analytical Results for Water Samples—4th Quarter of CY 2009

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
00193	WL	10/27/2009	09102668	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
00193	WL	10/27/2009	09102668	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
00193	WL	10/27/2009	09102668	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
00193	WL	10/27/2009	09102668	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
00193	WL	10/27/2009	09102668	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
00193	WL	10/27/2009	09102668	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
00193	WL	10/27/2009	09102668	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
00193	WL	10/27/2009	09102668	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
00193	WL	10/27/2009	09102668	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
00193	WL	10/27/2009	09102668	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
00193	WL	10/27/2009	09102668	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
00193	WL	10/27/2009	09102668	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
00193	WL	10/27/2009	09102668	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
00193	WL	10/27/2009	09102668	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
00193	WL	10/27/2009	09102668	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
00193	WL	10/27/2009	09102668	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
00193	WL	10/27/2009	09102668	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
00193	WL	10/27/2009	09102668	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
00193	WL	10/27/2009	09102668	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
00193	WL	10/27/2009	09102668	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
00193	WL	10/27/2009	09102668	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
00193	WL	10/27/2009	09102668	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
00193	WL	10/27/2009	09102668	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
00193	WL	10/27/2009	09102668	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
00193	WL	10/27/2009	09102668	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
00193	WL	10/27/2009	09102668	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
00193	WL	10/27/2009	09102668	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
00193	WL	10/27/2009	09102668	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
00193	WL	10/27/2009	09102668	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
00193	WL	10/27/2009	09102668	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
00193	WL	10/27/2009	09102668	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
00193	WL	10/27/2009	09102668	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
00193	WL	10/27/2009	09102668	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
00193	WL	10/27/2009	09102668	7440-61-1	Uranium	0001	74	ug/L		F	0.02		valid
00193	WL	10/27/2009	09102668	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
00797	WL	10/27/2009	09102668	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
00797	WL	10/27/2009	09102668	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
00797	WL	10/27/2009	09102668	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
00797	WL	10/27/2009	09102668	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
00797	WL	10/27/2009	09102668	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
00797	WL	10/27/2009	09102668	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
00797	WL	10/27/2009	09102668	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
00797	WL	10/27/2009	09102668	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
00797	WL	10/27/2009	09102668	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
00797	WL	10/27/2009	09102668	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
00797	WL	10/27/2009	09102668	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
00797	WL	10/27/2009	09102668	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
00797	WL	10/27/2009	09102668	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
00797	WL	10/27/2009	09102668	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
00797	WL	10/27/2009	09102668	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
00797	WL	10/27/2009	09102668	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
00797	WL	10/27/2009	09102668	56-23-5	Carbon tetrachloride	N001	0.43	ug/L	J	F	0.19		valid
00797	WL	10/27/2009	09102668	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
00797	WL	10/27/2009	09102668	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
00797	WL	10/27/2009	09102668	67-66-3	Chloroform	N001	0.34	ug/L	J	F	0.16		valid
00797	WL	10/27/2009	09102668	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
00797	WL	10/27/2009	09102668	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
00797	WL	10/27/2009	09102668	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
00797	WL	10/27/2009	09102668	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
00797	WL	10/27/2009	09102668	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
00797	WL	10/27/2009	09102668	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
00797	WL	10/27/2009	09102668	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
00797	WL	10/27/2009	09102668	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
00797	WL	10/27/2009	09102668	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
00797	WL	10/27/2009	09102668	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
00797	WL	10/27/2009	09102668	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
00797	WL	10/27/2009	09102668	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
00797	WL	10/27/2009	09102668	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
00797	WL	10/27/2009	09102668	7440-61-1	Uranium	0001	30	ug/L		F	0.02		valid
00797	WL	10/27/2009	09102668	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
00997	WL	10/14/2009	09102650	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
00997	WL	10/14/2009	09102650	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
00997	WL	10/14/2009	09102650	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
00997	WL	10/14/2009	09102650	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
00997	WL	10/14/2009	09102650	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
00997	WL	10/14/2009	09102650	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
00997	WL	10/14/2009	09102650	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
00997	WL	10/14/2009	09102650	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
00997	WL	10/14/2009	09102650	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
00997	WL	10/14/2009	09102650	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
00997	WL	10/14/2009	09102650	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
00997	WL	10/14/2009	09102650	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
00997	WL	10/14/2009	09102650	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
00997	WL	10/14/2009	09102650	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
00997	WL	10/14/2009	09102650	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
00997	WL	10/14/2009	09102650	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
00997	WL	10/14/2009	09102650	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
00997	WL	10/14/2009	09102650	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
00997	WL	10/14/2009	09102650	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
00997	WL	10/14/2009	09102650	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
00997	WL	10/14/2009	09102650	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
00997	WL	10/14/2009	09102650	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
00997	WL	10/14/2009	09102650	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
00997	WL	10/14/2009	09102650	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
00997	WL	10/14/2009	09102650	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
00997	WL	10/14/2009	09102650	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
00997	WL	10/14/2009	09102650	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	2	mg/L	J	F	0.019		valid
00997	WL	10/14/2009	09102650	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
00997	WL	10/14/2009	09102650	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
00997	WL	10/14/2009	09102650	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
00997	WL	10/14/2009	09102650	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
00997	WL	10/14/2009	09102650	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
00997	WL	10/14/2009	09102650	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
00997	WL	10/14/2009	09102650	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
00997	WL	10/14/2009	09102650	7440-61-1	Uranium	0001	14	ug/L		F	0.02		valid
00997	WL	10/14/2009	09102650	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
4087	WL	11/10/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
4087	WL	11/10/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
4087	WL	11/10/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
4087	WL	11/10/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
4087	WL	11/10/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
4087	WL	11/10/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
4087	WL	11/10/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
4087	WL	11/10/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
4087	WL	11/10/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
4087	WL	11/10/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
4087	WL	11/10/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.56	ug/L	J	F	0.16		valid
4087	WL	11/10/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
4087	WL	11/10/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
4087	WL	11/10/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
4087	WL	11/10/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
4087	WL	11/10/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
4087	WL	11/10/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
4087	WL	11/10/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
4087	WL	11/10/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
4087	WL	11/10/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
4087	WL	11/10/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
4087	WL	11/10/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
4087	WL	11/10/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
4087	WL	11/10/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
4087	WL	11/10/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
4087	WL	11/10/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
4087	WL	11/10/2009	09112699	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.59	mg/L	J	F	0.019		valid
4087	WL	11/10/2009	09112699	100-42-5	Styrene	N001	1.2	ug/L		F	0.17		J
4087	WL	11/10/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
4087	WL	11/10/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
4087	WL	11/10/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
4087	WL	11/10/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
4087	WL	11/10/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
4087	WL	11/10/2009	09112699	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
4087	WL	11/10/2009	09112699	7440-61-1	Uranium	0001	44	ug/L		F	0.02		valid
4087	WL	11/10/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
04091	WL	10/26/2009	09102668	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
04091	WL	10/26/2009	09102668	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
04091	WL	10/26/2009	09102668	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
04091	WL	10/26/2009	09102668	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
04091	WL	10/26/2009	09102668	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
04091	WL	10/26/2009	09102668	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
04091	WL	10/26/2009	09102668	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
04091	WL	10/26/2009	09102668	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
04091	WL	10/26/2009	09102668	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
04091	WL	10/26/2009	09102668	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
04091	WL	10/26/2009	09102668	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
04091	WL	10/26/2009	09102668	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
04091	WL	10/26/2009	09102668	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
04091	WL	10/26/2009	09102668	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
04091	WL	10/26/2009	09102668	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
04091	WL	10/26/2009	09102668	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
04091	WL	10/26/2009	09102668	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
04091	WL	10/26/2009	09102668	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
04091	WL	10/26/2009	09102668	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
04091	WL	10/26/2009	09102668	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
04091	WL	10/26/2009	09102668	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
04091	WL	10/26/2009	09102668	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
04091	WL	10/26/2009	09102668	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
04091	WL	10/26/2009	09102668	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
04091	WL	10/26/2009	09102668	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
04091	WL	10/26/2009	09102668	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
04091	WL	10/26/2009	09102668	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
04091	WL	10/26/2009	09102668	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
04091	WL	10/26/2009	09102668	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
04091	WL	10/26/2009	09102668	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
04091	WL	10/26/2009	09102668	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
04091	WL	10/26/2009	09102668	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
04091	WL	10/26/2009	09102668	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
04091	WL	10/26/2009	09102668	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
10304	WL	11/4/2009	09112685	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
10304	WL	11/4/2009	09112685	71-55-6	1,1,1-Trichloroethane	N002	0.16	ug/L	U	D	0.16		valid
10304	WL	11/4/2009	09112685	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
10304	WL	11/4/2009	09112685	79-34-5	1,1,2,2-Tetrachloroethane	N002	0.2	ug/L	U	D	0.2		valid
10304	WL	11/4/2009	09112685	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
10304	WL	11/4/2009	09112685	79-00-5	1,1,2-Trichloroethane	N002	0.32	ug/L	U	D	0.32		valid
10304	WL	11/4/2009	09112685	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
10304	WL	11/4/2009	09112685	75-35-4	1,1-Dichloroethene	N002	0.14	ug/L	U	D	0.14		valid
10304	WL	11/4/2009	09112685	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
10304	WL	11/4/2009	09112685	120-82-1	1,2,4-Trichlorobenzene	N002	0.32	ug/L	U	D	0.32		valid
10304	WL	11/4/2009	09112685	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
10304	WL	11/4/2009	09112685	96-12-8	1,2-Dibromo-3-chloropropane	N002	0.81	ug/L	U	D	0.81		valid
10304	WL	11/4/2009	09112685	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
10304	WL	11/4/2009	09112685	106-93-4	1,2-Dibromoethane	N002	0.18	ug/L	U	D	0.18		valid
10304	WL	11/4/2009	09112685	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
10304	WL	11/4/2009	09112685	95-50-1	1,2-Dichlorobenzene	N002	0.13	ug/L	U	D	0.13		valid
10304	WL	11/4/2009	09112685	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
10304	WL	11/4/2009	09112685	107-06-2	1,2-Dichloroethane	N002	0.13	ug/L	U	D	0.13		valid
10304	WL	11/4/2009	09112685	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
10304	WL	11/4/2009	09112685	78-87-5	1,2-Dichloropropane	N002	0.13	ug/L	U	D	0.13		valid
10304	WL	11/4/2009	09112685	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
10304	WL	11/4/2009	09112685	541-73-1	1,3-Dichlorobenzene	N002	0.16	ug/L	U	D	0.16		valid
10304	WL	11/4/2009	09112685	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
10304	WL	11/4/2009	09112685	106-46-7	1,4-Dichlorobenzene	N002	0.16	ug/L	U	D	0.16		valid
10304	WL	11/4/2009	09112685	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
10304	WL	11/4/2009	09112685	71-43-2	Benzene	N002	0.16	ug/L	U	D	0.16		valid
10304	WL	11/4/2009	09112685	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
10304	WL	11/4/2009	09112685	75-27-4	Bromodichloromethane	N002	0.17	ug/L	U	D	0.17		valid
10304	WL	11/4/2009	09112685	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
10304	WL	11/4/2009	09112685	75-25-2	Bromoform	N002	0.19	ug/L	U	D	0.19		valid
10304	WL	11/4/2009	09112685	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
10304	WL	11/4/2009	09112685	74-83-9	Bromomethane	N002	0.21	ug/L	U	D	0.21		valid
10304	WL	11/4/2009	09112685	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
10304	WL	11/4/2009	09112685	56-23-5	Carbon tetrachloride	N002	0.19	ug/L	U	D	0.19		valid
10304	WL	11/4/2009	09112685	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
10304	WL	11/4/2009	09112685	108-90-7	Chlorobenzene	N002	0.17	ug/L	U	D	0.17		valid
10304	WL	11/4/2009	09112685	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
10304	WL	11/4/2009	09112685	124-48-1	Chlorodibromomethane	N002	0.17	ug/L	U	D	0.17		valid
10304	WL	11/4/2009	09112685	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
10304	WL	11/4/2009	09112685	67-66-3	Chloroform	N002	0.16	ug/L	U	D	0.16		valid
10304	WL	11/4/2009	09112685	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
10304	WL	11/4/2009	09112685	74-87-3	Chloromethane	N002	0.3	ug/L	U	D	0.3		valid
10304	WL	11/4/2009	09112685	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
10304	WL	11/4/2009	09112685	156-59-2	cis-1,2-Dichloroethene	N002	0.15	ug/L	U	D	0.15		valid
10304	WL	11/4/2009	09112685	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
10304	WL	11/4/2009	09112685	100-41-4	Ethylbenzene	N002	0.16	ug/L	U	D	0.16		valid
10304	WL	11/4/2009	09112685	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
10304	WL	11/4/2009	09112685	87-68-3	Hexachlorobutadiene	N002	0.12	ug/L	U	D	0.12		valid
10304	WL	11/4/2009	09112685	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
10304	WL	11/4/2009	09112685	75-09-2	Methylene chloride	N002	0.32	ug/L	U	D	0.32		valid
10304	WL	11/4/2009	09112685	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
10304	WL	11/4/2009	09112685	91-20-3	Naphthalene	N002	0.22	ug/L	U	D	0.22		valid
10304	WL	11/4/2009	09112685	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.058	mg/L	J	F	0.019		U
10304	WL	11/4/2009	09112685	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	0.065	mg/L	J	D	0.019		U
10304	WL	11/4/2009	09112685	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
10304	WL	11/4/2009	09112685	100-42-5	Styrene	N002	0.17	ug/L	U	D	0.17		valid
10304	WL	11/4/2009	09112685	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
10304	WL	11/4/2009	09112685	127-18-4	Tetrachloroethene	N002	0.2	ug/L	U	D	0.2		valid
10304	WL	11/4/2009	09112685	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
10304	WL	11/4/2009	09112685	108-88-3	Toluene	N002	0.17	ug/L	U	D	0.17		valid
10304	WL	11/4/2009	09112685	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
10304	WL	11/4/2009	09112685	1330-20-7	Total Xylenes	N002	0.19	ug/L	U	D	0.19		valid
10304	WL	11/4/2009	09112685	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
10304	WL	11/4/2009	09112685	156-60-5	trans-1,2-Dichloroethene	N002	0.15	ug/L	U	D	0.15		valid
10304	WL	11/4/2009	09112685	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
10304	WL	11/4/2009	09112685	10061-02-6	trans-1,3-dichloropropene	N002	0.19	ug/L	U	D	0.19		valid
10304	WL	11/4/2009	09112685	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
10304	WL	11/4/2009	09112685	79-01-6	Trichloroethene	N002	0.16	ug/L	U	D	0.16		valid
10304	WL	11/4/2009	09112685	7440-61-1	Uranium	0001	19	ug/L		F	0.02		valid
10304	WL	11/4/2009	09112685	7440-61-1	Uranium	0002	19	ug/L		D	0.02		valid
10304	WL	11/4/2009	09112685	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
10304	WL	11/4/2009	09112685	75-01-4	Vinyl chloride	N002	0.4	ug/L	U	D	0.4		valid
10594	WL	10/15/2009	09102650	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
10594	WL	10/15/2009	09102650	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
10594	WL	10/15/2009	09102650	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
10594	WL	10/15/2009	09102650	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
10594	WL	10/15/2009	09102650	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
10594	WL	10/15/2009	09102650	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
10594	WL	10/15/2009	09102650	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
10594	WL	10/15/2009	09102650	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
10594	WL	10/15/2009	09102650	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
10594	WL	10/15/2009	09102650	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
10594	WL	10/15/2009	09102650	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
10594	WL	10/15/2009	09102650	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
10594	WL	10/15/2009	09102650	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
10594	WL	10/15/2009	09102650	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
10594	WL	10/15/2009	09102650	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
10594	WL	10/15/2009	09102650	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
10594	WL	10/15/2009	09102650	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
10594	WL	10/15/2009	09102650	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
10594	WL	10/15/2009	09102650	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
10594	WL	10/15/2009	09102650	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
10594	WL	10/15/2009	09102650	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
10594	WL	10/15/2009	09102650	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
10594	WL	10/15/2009	09102650	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
10594	WL	10/15/2009	09102650	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
10594	WL	10/15/2009	09102650	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
10594	WL	10/15/2009	09102650	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
10594	WL	10/15/2009	09102650	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.34	mg/L	J	F	0.019		valid
10594	WL	10/15/2009	09102650	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
10594	WL	10/15/2009	09102650	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
10594	WL	10/15/2009	09102650	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
10594	WL	10/15/2009	09102650	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
10594	WL	10/15/2009	09102650	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
10594	WL	10/15/2009	09102650	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
10594	WL	10/15/2009	09102650	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
10594	WL	10/15/2009	09102650	7440-61-1	Uranium	0001	81	ug/L		F	0.02		valid
10594	WL	10/15/2009	09102650	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
11104	WL	11/11/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
11104	WL	11/11/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
11104	WL	11/11/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
11104	WL	11/11/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
11104	WL	11/11/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
11104	WL	11/11/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
11104	WL	11/11/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
11104	WL	11/11/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
11104	WL	11/11/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
11104	WL	11/11/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
11104	WL	11/11/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
11104	WL	11/11/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
11104	WL	11/11/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
11104	WL	11/11/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
11104	WL	11/11/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
11104	WL	11/11/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
11104	WL	11/11/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
11104	WL	11/11/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
11104	WL	11/11/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
11104	WL	11/11/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
11104	WL	11/11/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
11104	WL	11/11/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
11104	WL	11/11/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
11104	WL	11/11/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
11104	WL	11/11/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
11104	WL	11/11/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
11104	WL	11/11/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
11104	WL	11/11/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
11104	WL	11/11/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
11104	WL	11/11/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
11104	WL	11/11/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
11104	WL	11/11/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
11104	WL	11/11/2009	09112699	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
11104	WL	11/11/2009	09112699	7440-61-1	Uranium	0001	22	ug/L		F	0.02		valid
11104	WL	11/11/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
11502	WL	11/4/2009	09112685	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
11502	WL	11/4/2009	09112685	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
11502	WL	11/4/2009	09112685	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
11502	WL	11/4/2009	09112685	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
11502	WL	11/4/2009	09112685	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
11502	WL	11/4/2009	09112685	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
11502	WL	11/4/2009	09112685	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
11502	WL	11/4/2009	09112685	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
11502	WL	11/4/2009	09112685	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
11502	WL	11/4/2009	09112685	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
11502	WL	11/4/2009	09112685	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
11502	WL	11/4/2009	09112685	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
11502	WL	11/4/2009	09112685	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
11502	WL	11/4/2009	09112685	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
11502	WL	11/4/2009	09112685	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
11502	WL	11/4/2009	09112685	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
11502	WL	11/4/2009	09112685	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
11502	WL	11/4/2009	09112685	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
11502	WL	11/4/2009	09112685	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
11502	WL	11/4/2009	09112685	67-66-3	Chloroform	N001	0.21	ug/L	J	F	0.16		valid
11502	WL	11/4/2009	09112685	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
11502	WL	11/4/2009	09112685	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
11502	WL	11/4/2009	09112685	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
11502	WL	11/4/2009	09112685	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
11502	WL	11/4/2009	09112685	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
11502	WL	11/4/2009	09112685	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
11502	WL	11/4/2009	09112685	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
11502	WL	11/4/2009	09112685	127-18-4	Tetrachloroethene	N001	8.9	ug/L		F	0.2		valid
11502	WL	11/4/2009	09112685	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
11502	WL	11/4/2009	09112685	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
11502	WL	11/4/2009	09112685	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
11502	WL	11/4/2009	09112685	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
11502	WL	11/4/2009	09112685	79-01-6	Trichloroethene	N001	0.53	ug/L	J	F	0.16		valid
11502	WL	11/4/2009	09112685	7440-61-1	Uranium	0001	1.3	ug/L		F	0.02		valid
11502	WL	11/4/2009	09112685	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
15699	WL	10/20/2009	09102656	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
15699	WL	10/20/2009	09102656	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
15699	WL	10/20/2009	09102656	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
15699	WL	10/20/2009	09102656	75-35-4	1,1-Dichloroethene	N001	5	ug/L		F	0.14		valid
15699	WL	10/20/2009	09102656	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
15699	WL	10/20/2009	09102656	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
15699	WL	10/20/2009	09102656	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
15699	WL	10/20/2009	09102656	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
15699	WL	10/20/2009	09102656	107-06-2	1,2-Dichloroethane	N001	0.67	ug/L	J	F	0.13		valid
15699	WL	10/20/2009	09102656	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
15699	WL	10/20/2009	09102656	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
15699	WL	10/20/2009	09102656	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
15699	WL	10/20/2009	09102656	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
15699	WL	10/20/2009	09102656	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
15699	WL	10/20/2009	09102656	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
15699	WL	10/20/2009	09102656	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
15699	WL	10/20/2009	09102656	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
15699	WL	10/20/2009	09102656	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
15699	WL	10/20/2009	09102656	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
15699	WL	10/20/2009	09102656	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
15699	WL	10/20/2009	09102656	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
15699	WL	10/20/2009	09102656	156-59-2	cis-1,2-Dichloroethene	N001	160	ug/L		F	1.5		valid
15699	WL	10/20/2009	09102656	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
15699	WL	10/20/2009	09102656	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
15699	WL	10/20/2009	09102656	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
15699	WL	10/20/2009	09102656	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
15699	WL	10/20/2009	09102656	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
15699	WL	10/20/2009	09102656	127-18-4	Tetrachloroethene	N001	11	ug/L		F	0.2		valid
15699	WL	10/20/2009	09102656	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
15699	WL	10/20/2009	09102656	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
15699	WL	10/20/2009	09102656	156-60-5	trans-1,2-Dichloroethene	N001	1.2	ug/L		F	0.15		valid
15699	WL	10/20/2009	09102656	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
15699	WL	10/20/2009	09102656	79-01-6	Trichloroethene	N001	60	ug/L		F	0.16		valid
15699	WL	10/20/2009	09102656	75-01-4	Vinyl chloride	N001	40	ug/L		F	0.4		valid
20205	WL	10/13/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
20205	WL	10/13/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
20205	WL	10/13/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
20205	WL	10/13/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
20205	WL	10/13/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
20205	WL	10/13/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
20205	WL	10/13/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
20205	WL	10/13/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
20205	WL	10/13/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
20205	WL	10/13/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
20205	WL	10/13/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
20205	WL	10/13/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
20205	WL	10/13/2009	09102646	AM-241	Americium-241	0002	0.000375	pCi/L	U	F	0.0293	0.00582	valid
20205	WL	10/13/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
20205	WL	10/13/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
20205	WL	10/13/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
20205	WL	10/13/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
20205	WL	10/13/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
20205	WL	10/13/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
20205	WL	10/13/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
20205	WL	10/13/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
20205	WL	10/13/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
20205	WL	10/13/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
20205	WL	10/13/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
20205	WL	10/13/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
20205	WL	10/13/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
20205	WL	10/13/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
20205	WL	10/13/2009	09102645	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.59	mg/L	J	F	0.019		valid
20205	WL	10/13/2009	09102646	PU-239,240	Plutonium-239, 240	0002	-1.69E-10	pCi/L	U	F	0.018	0.00394	valid
20205	WL	10/13/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
20205	WL	10/13/2009	09102645	127-18-4	Tetrachloroethene	N001	3.9	ug/L		F	0.2		valid
20205	WL	10/13/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
20205	WL	10/13/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
20205	WL	10/13/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
20205	WL	10/13/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
20205	WL	10/13/2009	09102645	79-01-6	Trichloroethene	N001	0.58	ug/L	J	F	0.16		valid
20205	WL	10/13/2009	09102645	7440-61-1	Uranium	0001	63	ug/L		F	0.02		valid
20205	WL	10/13/2009	09102645	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
20505	WL	10/13/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
20505	WL	10/13/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
20505	WL	10/13/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
20505	WL	10/13/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
20505	WL	10/13/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
20505	WL	10/13/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
20505	WL	10/13/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
20505	WL	10/13/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
20505	WL	10/13/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
20505	WL	10/13/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
20505	WL	10/13/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
20505	WL	10/13/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
20505	WL	10/13/2009	09102646	AM-241	Americium-241	0002	-0.00163	pCi/L	U	F	0.0189	0.00554	valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
20505	WL	10/13/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
20505	WL	10/13/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
20505	WL	10/13/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
20505	WL	10/13/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
20505	WL	10/13/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
20505	WL	10/13/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
20505	WL	10/13/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
20505	WL	10/13/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
20505	WL	10/13/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
20505	WL	10/13/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	3.4	ug/L		F	0.15		valid
20505	WL	10/13/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
20505	WL	10/13/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
20505	WL	10/13/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
20505	WL	10/13/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
20505	WL	10/13/2009	09102645	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.79	mg/L	J	F	0.019		valid
20505	WL	10/13/2009	09102646	PU-239,240	Plutonium-239, 240	0002	-5.76E-10	pCi/L	U	F	0.0153	0.0058	valid
20505	WL	10/13/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
20505	WL	10/13/2009	09102645	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
20505	WL	10/13/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
20505	WL	10/13/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
20505	WL	10/13/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
20505	WL	10/13/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
20505	WL	10/13/2009	09102645	79-01-6	Trichloroethene	N001	0.58	ug/L	J	F	0.16		valid
20505	WL	10/13/2009	09102645	7440-61-1	Uranium	0001	10	ug/L		F	0.02		valid
20505	WL	10/13/2009	09102645	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
20705	WL	10/13/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
20705	WL	10/13/2009	09102645	71-55-6	1,1,1-Trichloroethane	N002	0.16	ug/L	U	D	0.16		valid
20705	WL	10/13/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
20705	WL	10/13/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N002	0.2	ug/L	U	D	0.2		valid
20705	WL	10/13/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
20705	WL	10/13/2009	09102645	79-00-5	1,1,2-Trichloroethane	N002	0.32	ug/L	U	D	0.32		valid
20705	WL	10/13/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
20705	WL	10/13/2009	09102645	75-35-4	1,1-Dichloroethene	N002	0.14	ug/L	U	D	0.14		valid
20705	WL	10/13/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
20705	WL	10/13/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N002	0.32	ug/L	U	D	0.32		valid
20705	WL	10/13/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
20705	WL	10/13/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N002	0.81	ug/L	U	D	0.81		valid
20705	WL	10/13/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
20705	WL	10/13/2009	09102645	106-93-4	1,2-Dibromoethane	N002	0.18	ug/L	U	D	0.18		valid
20705	WL	10/13/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
20705	WL	10/13/2009	09102645	95-50-1	1,2-Dichlorobenzene	N002	0.13	ug/L	U	D	0.13		valid
20705	WL	10/13/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
20705	WL	10/13/2009	09102645	107-06-2	1,2-Dichloroethane	N002	0.13	ug/L	U	D	0.13		valid
20705	WL	10/13/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
20705	WL	10/13/2009	09102645	78-87-5	1,2-Dichloropropane	N002	0.13	ug/L	U	D	0.13		valid
20705	WL	10/13/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
20705	WL	10/13/2009	09102645	541-73-1	1,3-Dichlorobenzene	N002	0.16	ug/L	U	D	0.16		valid
20705	WL	10/13/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
20705	WL	10/13/2009	09102645	106-46-7	1,4-Dichlorobenzene	N002	0.16	ug/L	U	D	0.16		valid
20705	WL	10/13/2009	09102646	AM-241	Americium-241	0003	0.00208	pCi/L	U	F	0.0181	0.00316	valid
20705	WL	10/13/2009	09102646	AM-241	Americium-241	0004	0.00282	pCi/L	U	D	0.0162	0.00465	valid
20705	WL	10/13/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
20705	WL	10/13/2009	09102645	71-43-2	Benzene	N002	0.16	ug/L	U	D	0.16		valid
20705	WL	10/13/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
20705	WL	10/13/2009	09102645	75-27-4	Bromodichloromethane	N002	0.17	ug/L	U	D	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
20705	WL	10/13/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
20705	WL	10/13/2009	09102645	75-25-2	Bromoform	N002	0.19	ug/L	U	D	0.19		valid
20705	WL	10/13/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
20705	WL	10/13/2009	09102645	74-83-9	Bromomethane	N002	0.21	ug/L	U	D	0.21		valid
20705	WL	10/13/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
20705	WL	10/13/2009	09102645	56-23-5	Carbon tetrachloride	N002	0.19	ug/L	U	D	0.19		valid
20705	WL	10/13/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
20705	WL	10/13/2009	09102645	108-90-7	Chlorobenzene	N002	0.17	ug/L	U	D	0.17		valid
20705	WL	10/13/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
20705	WL	10/13/2009	09102645	124-48-1	Chlorodibromomethane	N002	0.17	ug/L	U	D	0.17		valid
20705	WL	10/13/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
20705	WL	10/13/2009	09102645	67-66-3	Chloroform	N002	0.16	ug/L	U	D	0.16		valid
20705	WL	10/13/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
20705	WL	10/13/2009	09102645	74-87-3	Chloromethane	N002	0.3	ug/L	U	D	0.3		valid
20705	WL	10/13/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	0.65	ug/L	J	F	0.15		valid
20705	WL	10/13/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N002	0.62	ug/L	J	D	0.15		valid
20705	WL	10/13/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
20705	WL	10/13/2009	09102645	100-41-4	Ethylbenzene	N002	0.16	ug/L	U	D	0.16		valid
20705	WL	10/13/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
20705	WL	10/13/2009	09102645	87-68-3	Hexachlorobutadiene	N002	0.12	ug/L	U	D	0.12		valid
20705	WL	10/13/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
20705	WL	10/13/2009	09102645	75-09-2	Methylene chloride	N002	0.32	ug/L	U	D	0.32		valid
20705	WL	10/13/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
20705	WL	10/13/2009	09102645	91-20-3	Naphthalene	N002	0.22	ug/L	U	D	0.22		valid
20705	WL	10/13/2009	09102645	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.067	mg/L	J	F	0.019		U
20705	WL	10/13/2009	09102645	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	0.13	mg/L	J	D	0.019		valid
20705	WL	10/13/2009	09102646	PU-239,240	Plutonium-239, 240	0003	0.00117	pCi/L	U	F	0.0148	0.00759	valid
20705	WL	10/13/2009	09102646	PU-239,240	Plutonium-239, 240	0004	0	pCi/L	U	D	0.0154	0.00582	valid
20705	WL	10/13/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
20705	WL	10/13/2009	09102645	100-42-5	Styrene	N002	0.17	ug/L	U	D	0.17		valid
20705	WL	10/13/2009	09102645	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
20705	WL	10/13/2009	09102645	127-18-4	Tetrachloroethene	N002	0.2	ug/L	U	D	0.2		valid
20705	WL	10/13/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
20705	WL	10/13/2009	09102645	108-88-3	Toluene	N002	0.17	ug/L	U	D	0.17		valid
20705	WL	10/13/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
20705	WL	10/13/2009	09102645	1330-20-7	Total Xylenes	N002	0.19	ug/L	U	D	0.19		valid
20705	WL	10/13/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
20705	WL	10/13/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N002	0.15	ug/L	U	D	0.15		valid
20705	WL	10/13/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
20705	WL	10/13/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N002	0.19	ug/L	U	D	0.19		valid
20705	WL	10/13/2009	09102645	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
20705	WL	10/13/2009	09102645	79-01-6	Trichloroethene	N002	0.16	ug/L	U	D	0.16		valid
20705	WL	10/13/2009	09102645	7440-61-1	Uranium	0001	11	ug/L		F	0.02		valid
20705	WL	10/13/2009	09102645	7440-61-1	Uranium	0002	11	ug/L		D	0.02		valid
20705	WL	10/13/2009	09102645	75-01-4	Vinyl chloride	N001	0.86	ug/L	J	F	0.4		valid
20705	WL	10/13/2009	09102645	75-01-4	Vinyl chloride	N002	0.85	ug/L	J	D	0.4		valid
23296	WL	10/26/2009	09102668	71-55-6	1,1,1-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
23296	WL	10/26/2009	09102668	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.4	ug/L	U	F	0.4		valid
23296	WL	10/26/2009	09102668	79-00-5	1,1,2-Trichloroethane	N001	0.64	ug/L	U	F	0.64		valid
23296	WL	10/26/2009	09102668	75-35-4	1,1-Dichloroethene	N001	4.7	ug/L		F	0.28		valid
23296	WL	10/26/2009	09102668	120-82-1	1,2,4-Trichlorobenzene	N001	0.64	ug/L	U	F	0.64		valid
23296	WL	10/26/2009	09102668	96-12-8	1,2-Dibromo-3-chloropropane	N001	1.6	ug/L	U	F	1.6		valid
23296	WL	10/26/2009	09102668	106-93-4	1,2-Dibromoethane	N001	0.36	ug/L	U	F	0.36		valid
23296	WL	10/26/2009	09102668	95-50-1	1,2-Dichlorobenzene	N001	0.26	ug/L	U	F	0.26		valid
23296	WL	10/26/2009	09102668	107-06-2	1,2-Dichloroethane	N001	0.26	ug/L	U	F	0.26		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
23296	WL	10/26/2009	09102668	78-87-5	1,2-Dichloropropane	N001	0.26	ug/L	U	F	0.26		valid
23296	WL	10/26/2009	09102668	541-73-1	1,3-Dichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
23296	WL	10/26/2009	09102668	106-46-7	1,4-Dichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
23296	WL	10/26/2009	09102668	71-43-2	Benzene	N001	0.32	ug/L	U	F	0.32		valid
23296	WL	10/26/2009	09102668	75-27-4	Bromodichloromethane	N001	0.34	ug/L	U	F	0.34		valid
23296	WL	10/26/2009	09102668	75-25-2	Bromoform	N001	0.38	ug/L	U	F	0.38		valid
23296	WL	10/26/2009	09102668	74-83-9	Bromomethane	N001	0.42	ug/L	U	F	0.42		valid
23296	WL	10/26/2009	09102668	56-23-5	Carbon tetrachloride	N001	0.38	ug/L	U	F	0.38		valid
23296	WL	10/26/2009	09102668	108-90-7	Chlorobenzene	N001	0.34	ug/L	U	F	0.34		valid
23296	WL	10/26/2009	09102668	124-48-1	Chlorodibromomethane	N001	0.34	ug/L	U	F	0.34		valid
23296	WL	10/26/2009	09102668	67-66-3	Chloroform	N001	0.32	ug/L	U	F	0.32		valid
23296	WL	10/26/2009	09102668	74-87-3	Chloromethane	N001	0.6	ug/L	U	F	0.6		valid
23296	WL	10/26/2009	09102668	156-59-2	cis-1,2-Dichloroethene	N001	1100	ug/L		F	6		valid
23296	WL	10/26/2009	09102668	100-41-4	Ethylbenzene	N001	0.32	ug/L	U	F	0.32		valid
23296	WL	10/26/2009	09102668	87-68-3	Hexachlorobutadiene	N001	0.24	ug/L	U	F	0.24		valid
23296	WL	10/26/2009	09102668	75-09-2	Methylene chloride	N001	0.64	ug/L	U	F	0.64		valid
23296	WL	10/26/2009	09102668	91-20-3	Naphthalene	N001	0.44	ug/L	U	F	0.44		valid
23296	WL	10/26/2009	09102668	100-42-5	Styrene	N001	0.34	ug/L	U	F	0.34		valid
23296	WL	10/26/2009	09102668	127-18-4	Tetrachloroethene	N001	0.4	ug/L	U	F	0.4		valid
23296	WL	10/26/2009	09102668	108-88-3	Toluene	N001	0.34	ug/L	U	F	0.34		valid
23296	WL	10/26/2009	09102668	1330-20-7	Total Xylenes	N001	0.38	ug/L	U	F	0.38		valid
23296	WL	10/26/2009	09102668	156-60-5	trans-1,2-Dichloroethene	N001	5.1	ug/L		F	0.3		valid
23296	WL	10/26/2009	09102668	10061-02-6	trans-1,3-dichloropropene	N001	0.38	ug/L	U	F	0.38		valid
23296	WL	10/26/2009	09102668	79-01-6	Trichloroethene	N001	23	ug/L		F	0.32		valid
23296	WL	10/26/2009	09102668	7440-61-1	Uranium	0001	18	ug/L		F	0.02		valid
23296	WL	10/26/2009	09102668	75-01-4	Vinyl chloride	N001	32	ug/L		F	0.8		J
30002	WL	10/13/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
30002	WL	10/13/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
30002	WL	10/13/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
30002	WL	10/13/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
30002	WL	10/13/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
30002	WL	10/13/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
30002	WL	10/13/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
30002	WL	10/13/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
30002	WL	10/13/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
30002	WL	10/13/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
30002	WL	10/13/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
30002	WL	10/13/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
30002	WL	10/13/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
30002	WL	10/13/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
30002	WL	10/13/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
30002	WL	10/13/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
30002	WL	10/13/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
30002	WL	10/13/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
30002	WL	10/13/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
30002	WL	10/13/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
30002	WL	10/13/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
30002	WL	10/13/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
30002	WL	10/13/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
30002	WL	10/13/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
30002	WL	10/13/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
30002	WL	10/13/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
30002	WL	10/13/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
30002	WL	10/13/2009	09102645	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
30002	WL	10/13/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
30002	WL	10/13/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
30002	WL	10/13/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
30002	WL	10/13/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
30002	WL	10/13/2009	09102645	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
30002	WL	10/13/2009	09102645	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
33703	WL	10/12/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
33703	WL	10/12/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
33703	WL	10/12/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
33703	WL	10/12/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
33703	WL	10/12/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
33703	WL	10/12/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
33703	WL	10/12/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
33703	WL	10/12/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.16	ug/L	J	F	0.13		valid
33703	WL	10/12/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
33703	WL	10/12/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
33703	WL	10/12/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	1.7	ug/L		F	0.16		valid
33703	WL	10/12/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	10	ug/L		F	0.16		valid
33703	WL	10/12/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
33703	WL	10/12/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
33703	WL	10/12/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
33703	WL	10/12/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
33703	WL	10/12/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
33703	WL	10/12/2009	09102645	108-90-7	Chlorobenzene	N001	11	ug/L		F	0.17		valid
33703	WL	10/12/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
33703	WL	10/12/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
33703	WL	10/12/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
33703	WL	10/12/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	16	ug/L		F	0.15		valid
33703	WL	10/12/2009	09102645	100-41-4	Ethylbenzene	N001	0.17	ug/L	J	F	0.16		valid
33703	WL	10/12/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
33703	WL	10/12/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
33703	WL	10/12/2009	09102645	91-20-3	Naphthalene	N001	0.31	ug/L	J	F	0.22		valid
33703	WL	10/12/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
33703	WL	10/12/2009	09102645	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
33703	WL	10/12/2009	09102645	108-88-3	Toluene	N001	0.86	ug/L	J	F	0.17		valid
33703	WL	10/12/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
33703	WL	10/12/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	4.7	ug/L		F	0.15		valid
33703	WL	10/12/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
33703	WL	10/12/2009	09102645	79-01-6	Trichloroethene	N001	0.8	ug/L	J	F	0.16		valid
33703	WL	10/12/2009	09102645	75-01-4	Vinyl chloride	N001	18	ug/L		F	0.4		valid
37405	WL	10/12/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
37405	WL	10/12/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
37405	WL	10/12/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
37405	WL	10/12/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
37405	WL	10/12/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
37405	WL	10/12/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
37405	WL	10/12/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
37405	WL	10/12/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
37405	WL	10/12/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
37405	WL	10/12/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
37405	WL	10/12/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
37405	WL	10/12/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
37405	WL	10/12/2009	09102646	AM-241	Americium-241	0002	-0.000211	pCi/L	U	F	0.0207	0.00673	valid
37405	WL	10/12/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
37405	WL	10/12/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
37405	WL	10/12/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
37405	WL	10/12/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
37405	WL	10/12/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
37405	WL	10/12/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
37405	WL	10/12/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
37405	WL	10/12/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
37405	WL	10/12/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
37405	WL	10/12/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
37405	WL	10/12/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
37405	WL	10/12/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
37405	WL	10/12/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
37405	WL	10/12/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
37405	WL	10/12/2009	09102645	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	6.2	mg/L	J	F	0.019		valid
37405	WL	10/12/2009	09102646	PU-239,240	Plutonium-239, 240	0002	0	pCi/L	U	F	0.0168	0.00637	valid
37405	WL	10/12/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
37405	WL	10/12/2009	09102645	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
37405	WL	10/12/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
37405	WL	10/12/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
37405	WL	10/12/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
37405	WL	10/12/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
37405	WL	10/12/2009	09102645	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
37405	WL	10/12/2009	09102645	7440-61-1	Uranium	0001	1.5	ug/L		F	0.02		valid
37405	WL	10/12/2009	09102645	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
37505	WL	10/12/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
37505	WL	10/12/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
37505	WL	10/12/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
37505	WL	10/12/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
37505	WL	10/12/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
37505	WL	10/12/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
37505	WL	10/12/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
37505	WL	10/12/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
37505	WL	10/12/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
37505	WL	10/12/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
37505	WL	10/12/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
37505	WL	10/12/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
37505	WL	10/12/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
37505	WL	10/12/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
37505	WL	10/12/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
37505	WL	10/12/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
37505	WL	10/12/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
37505	WL	10/12/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
37505	WL	10/12/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
37505	WL	10/12/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
37505	WL	10/12/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
37505	WL	10/12/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
37505	WL	10/12/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
37505	WL	10/12/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
37505	WL	10/12/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
37505	WL	10/12/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
37505	WL	10/12/2009	09102645	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	4	mg/L	J	F	0.019		valid
37505	WL	10/12/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
37505	WL	10/12/2009	09102645	127-18-4	Tetrachloroethene	N001	0.54	ug/L	J	F	0.2		valid
37505	WL	10/12/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
37505	WL	10/12/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
37505	WL	10/12/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
37505	WL	10/12/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
37505	WL	10/12/2009	09102645	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
37505	WL	10/12/2009	09102645	7440-61-1	Uranium	0001	3.7	ug/L		F	0.02		valid
37505	WL	10/12/2009	09102645	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
37705	WL	10/12/2009	09102646	AM-241	Americium-241	0001	0.000415	pCi/L	U	F	0.0149	0.00311	valid
37705	WL	10/12/2009	09102646	PU-239,240	Plutonium-239, 240	0001	0	pCi/L	U	F	0.0134	0.00776	valid
37705	WL	10/14/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
37705	WL	10/14/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
37705	WL	10/14/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
37705	WL	10/14/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
37705	WL	10/14/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
37705	WL	10/14/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
37705	WL	10/14/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
37705	WL	10/14/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
37705	WL	10/14/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
37705	WL	10/14/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
37705	WL	10/14/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
37705	WL	10/14/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
37705	WL	10/14/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
37705	WL	10/14/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
37705	WL	10/14/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
37705	WL	10/14/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
37705	WL	10/14/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
37705	WL	10/14/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
37705	WL	10/14/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
37705	WL	10/14/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
37705	WL	10/14/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
37705	WL	10/14/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
37705	WL	10/14/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
37705	WL	10/14/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
37705	WL	10/14/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
37705	WL	10/14/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
37705	WL	10/14/2009	09102645	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.28	mg/L	J	F	0.019		valid
37705	WL	10/14/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
37705	WL	10/14/2009	09102645	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
37705	WL	10/14/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
37705	WL	10/14/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
37705	WL	10/14/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
37705	WL	10/14/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
37705	WL	10/14/2009	09102645	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
37705	WL	10/14/2009	09102645	7440-61-1	Uranium	0001	9.6	ug/L		F	0.02		valid
37705	WL	10/14/2009	09102645	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
40305	WL	11/4/2009	09112685	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
40305	WL	11/4/2009	09112685	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
40305	WL	11/4/2009	09112685	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
40305	WL	11/4/2009	09112685	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
40305	WL	11/4/2009	09112685	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
40305	WL	11/4/2009	09112685	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
40305	WL	11/4/2009	09112685	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
40305	WL	11/4/2009	09112685	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
40305	WL	11/4/2009	09112685	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
40305	WL	11/4/2009	09112685	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
40305	WL	11/4/2009	09112685	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
40305	WL	11/4/2009	09112685	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
40305	WL	11/4/2009	09112685	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
40305	WL	11/4/2009	09112685	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
40305	WL	11/4/2009	09112685	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
40305	WL	11/4/2009	09112685	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
40305	WL	11/4/2009	09112685	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
40305	WL	11/4/2009	09112685	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
40305	WL	11/4/2009	09112685	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
40305	WL	11/4/2009	09112685	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
40305	WL	11/4/2009	09112685	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
40305	WL	11/4/2009	09112685	156-59-2	cis-1,2-Dichloroethene	N001	0.35	ug/L	J	F	0.15		valid
40305	WL	11/4/2009	09112685	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
40305	WL	11/4/2009	09112685	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
40305	WL	11/4/2009	09112685	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
40305	WL	11/4/2009	09112685	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
40305	WL	11/4/2009	09112685	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
40305	WL	11/4/2009	09112685	127-18-4	Tetrachloroethene	N001	0.87	ug/L	J	F	0.2		valid
40305	WL	11/4/2009	09112685	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
40305	WL	11/4/2009	09112685	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
40305	WL	11/4/2009	09112685	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
40305	WL	11/4/2009	09112685	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
40305	WL	11/4/2009	09112685	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
40305	WL	11/4/2009	09112685	7440-61-1	Uranium	0001	0.57	ug/L		F	0.02		valid
40305	WL	11/4/2009	09112685	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
42505	WL	10/13/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
42505	WL	10/13/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
42505	WL	10/13/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
42505	WL	10/13/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
42505	WL	10/13/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
42505	WL	10/13/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
42505	WL	10/13/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
42505	WL	10/13/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
42505	WL	10/13/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
42505	WL	10/13/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
42505	WL	10/13/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
42505	WL	10/13/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
42505	WL	10/13/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
42505	WL	10/13/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
42505	WL	10/13/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
42505	WL	10/13/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
42505	WL	10/13/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
42505	WL	10/13/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
42505	WL	10/13/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
42505	WL	10/13/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
42505	WL	10/13/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
42505	WL	10/13/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
42505	WL	10/13/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
42505	WL	10/13/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
42505	WL	10/13/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
42505	WL	10/13/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
42505	WL	10/13/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
42505	WL	10/13/2009	09102645	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
42505	WL	10/13/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
42505	WL	10/13/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
42505	WL	10/13/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
42505	WL	10/13/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
42505	WL	10/13/2009	09102645	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
42505	WL	10/13/2009	09102645	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
45608	WL	11/3/2009	09112685	71-55-6	1,1,1-Trichloroethane	N001	0.19	ug/L	J	F	0.16		valid
45608	WL	11/3/2009	09112685	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
45608	WL	11/3/2009	09112685	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
45608	WL	11/3/2009	09112685	75-35-4	1,1-Dichloroethene	N001	0.95	ug/L	J	F	0.14		valid
45608	WL	11/3/2009	09112685	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
45608	WL	11/3/2009	09112685	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
45608	WL	11/3/2009	09112685	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
45608	WL	11/3/2009	09112685	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
45608	WL	11/3/2009	09112685	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
45608	WL	11/3/2009	09112685	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
45608	WL	11/3/2009	09112685	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
45608	WL	11/3/2009	09112685	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
45608	WL	11/3/2009	09112685	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
45608	WL	11/3/2009	09112685	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
45608	WL	11/3/2009	09112685	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
45608	WL	11/3/2009	09112685	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
45608	WL	11/3/2009	09112685	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
45608	WL	11/3/2009	09112685	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
45608	WL	11/3/2009	09112685	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
45608	WL	11/3/2009	09112685	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
45608	WL	11/3/2009	09112685	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
45608	WL	11/3/2009	09112685	156-59-2	cis-1,2-Dichloroethene	N001	170	ug/L		F	1.5		valid
45608	WL	11/3/2009	09112685	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
45608	WL	11/3/2009	09112685	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
45608	WL	11/3/2009	09112685	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
45608	WL	11/3/2009	09112685	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
45608	WL	11/3/2009	09112685	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
45608	WL	11/3/2009	09112685	127-18-4	Tetrachloroethene	N001	4.1	ug/L		F	0.2		valid
45608	WL	11/3/2009	09112685	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
45608	WL	11/3/2009	09112685	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
45608	WL	11/3/2009	09112685	156-60-5	trans-1,2-Dichloroethene	N001	0.97	ug/L	J	F	0.15		valid
45608	WL	11/3/2009	09112685	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
45608	WL	11/3/2009	09112685	79-01-6	Trichloroethene	N001	38	ug/L		F	0.16		valid
45608	WL	11/3/2009	09112685	75-01-4	Vinyl chloride	N001	33	ug/L		F	0.4		valid
52505	WL	10/13/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
52505	WL	10/13/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
52505	WL	10/13/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
52505	WL	10/13/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
52505	WL	10/13/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
52505	WL	10/13/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
52505	WL	10/13/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
52505	WL	10/13/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
52505	WL	10/13/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
52505	WL	10/13/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
52505	WL	10/13/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
52505	WL	10/13/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
52505	WL	10/13/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
52505	WL	10/13/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
52505	WL	10/13/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
52505	WL	10/13/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
52505	WL	10/13/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
52505	WL	10/13/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
52505	WL	10/13/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
52505	WL	10/13/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
52505	WL	10/13/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
52505	WL	10/13/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	0.34	ug/L	J	F	0.15		valid
52505	WL	10/13/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
52505	WL	10/13/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
52505	WL	10/13/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
52505	WL	10/13/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
52505	WL	10/13/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
52505	WL	10/13/2009	09102645	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
52505	WL	10/13/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
52505	WL	10/13/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
52505	WL	10/13/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
52505	WL	10/13/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
52505	WL	10/13/2009	09102645	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
52505	WL	10/13/2009	09102645	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
70099	WL	10/14/2009	09102650	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	1.1	mg/L	J	F	0.019		valid
70099	WL	10/14/2009	09102650	7440-61-1	Uranium	0001	280	ug/L		F	0.02		valid
70193	WL	11/5/2009	09112685	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
70193	WL	11/5/2009	09112685	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
70193	WL	11/5/2009	09112685	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
70193	WL	11/5/2009	09112685	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
70193	WL	11/5/2009	09112685	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
70193	WL	11/5/2009	09112685	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
70193	WL	11/5/2009	09112685	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
70193	WL	11/5/2009	09112685	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
70193	WL	11/5/2009	09112685	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
70193	WL	11/5/2009	09112685	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
70193	WL	11/5/2009	09112685	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
70193	WL	11/5/2009	09112685	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
70193	WL	11/5/2009	09112685	7440-38-2	Arsenic	0001	4.4	ug/L	U	F	4.4		valid
70193	WL	11/5/2009	09112685	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
70193	WL	11/5/2009	09112685	7440-41-7	Beryllium	0001	0.47	ug/L	U	F	0.47		valid
70193	WL	11/5/2009	09112685	7440-42-8	Boron	0001	15	ug/L	B J	F	1.6		U
70193	WL	11/5/2009	09112685	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
70193	WL	11/5/2009	09112685	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
70193	WL	11/5/2009	09112685	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
70193	WL	11/5/2009	09112685	7440-43-9	Cadmium	0001	1.5	ug/L	B	F	0.45		valid
70193	WL	11/5/2009	09112685	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
70193	WL	11/5/2009	09112685	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
70193	WL	11/5/2009	09112685	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
70193	WL	11/5/2009	09112685	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
70193	WL	11/5/2009	09112685	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
70193	WL	11/5/2009	09112685	7440-47-3	Chromium	0001	0.66	ug/L	U	F	0.66		valid
70193	WL	11/5/2009	09112685	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
70193	WL	11/5/2009	09112685	7440-50-8	Copper	0001	1.8	ug/L	B	F	1.4		valid
70193	WL	11/5/2009	09112685	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
70193	WL	11/5/2009	09112685	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
70193	WL	11/5/2009	09112685	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
70193	WL	11/5/2009	09112685	7439-97-6	Mercury	0001	0.027	ug/L	U	F	0.027		valid
70193	WL	11/5/2009	09112685	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
70193	WL	11/5/2009	09112685	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
70193	WL	11/5/2009	09112685	7440-02-0	Nickel	0001	1.3	ug/L	U	F	1.3		valid
70193	WL	11/5/2009	09112685	7782-49-2	Selenium	0001	7.5	ug/L	B	F	4.9		U
70193	WL	11/5/2009	09112685	7440-22-4	Silver	0001	0.93	ug/L	U	F	0.93		valid
70193	WL	11/5/2009	09112685	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
70193	WL	11/5/2009	09112685	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
70193	WL	11/5/2009	09112685	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
70193	WL	11/5/2009	09112685	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
70193	WL	11/5/2009	09112685	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
70193	WL	11/5/2009	09112685	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
70193	WL	11/5/2009	09112685	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
70193	WL	11/5/2009	09112685	7440-61-1	Uranium	0001	0.059	ug/L	B	F	0.02		valid
70193	WL	11/5/2009	09112685	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
70193	WL	11/5/2009	09112685	7440-66-6	Zinc	0001	8	ug/L	B	F	4.5		valid
70393	WL	11/9/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	1.7	ug/L		F	0.16		valid
70393	WL	11/9/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
70393	WL	11/9/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
70393	WL	11/9/2009	09112699	75-35-4	1,1-Dichloroethene	N001	3.5	ug/L		F	0.14		valid
70393	WL	11/9/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
70393	WL	11/9/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
70393	WL	11/9/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
70393	WL	11/9/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
70393	WL	11/9/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
70393	WL	11/9/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
70393	WL	11/9/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
70393	WL	11/9/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
70393	WL	11/9/2009	09112699	7440-38-2	Arsenic	0001	4.4	ug/L	U	F	4.4		valid
70393	WL	11/9/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
70393	WL	11/9/2009	09112699	7440-41-7	Beryllium	0001	0.47	ug/L	U	F	0.47		valid
70393	WL	11/9/2009	09112699	7440-42-8	Boron	0001	4.7	ug/L	B	F	1.6		valid
70393	WL	11/9/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
70393	WL	11/9/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
70393	WL	11/9/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
70393	WL	11/9/2009	09112699	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
70393	WL	11/9/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
70393	WL	11/9/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
70393	WL	11/9/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
70393	WL	11/9/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
70393	WL	11/9/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
70393	WL	11/9/2009	09112699	7440-47-3	Chromium	0001	0.66	ug/L	U	F	0.66		valid
70393	WL	11/9/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.18	ug/L	J	F	0.15		valid
70393	WL	11/9/2009	09112699	7440-50-8	Copper	0001	1.4	ug/L	U	F	1.4		valid
70393	WL	11/9/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
70393	WL	11/9/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
70393	WL	11/9/2009	09112699	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
70393	WL	11/9/2009	09112699	7439-97-6	Mercury	0001	0.027	ug/L	U	F	0.027		valid
70393	WL	11/9/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
70393	WL	11/9/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
70393	WL	11/9/2009	09112699	7440-02-0	Nickel	0001	1.3	ug/L	U	F	1.3		valid
70393	WL	11/9/2009	09112699	7782-49-2	Selenium	0001	4.9	ug/L	U	F	4.9		valid
70393	WL	11/9/2009	09112699	7440-22-4	Silver	0001	0.93	ug/L	U	F	0.93		valid
70393	WL	11/9/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
70393	WL	11/9/2009	09112699	127-18-4	Tetrachloroethene	N001	2.4	ug/L		F	0.2		valid
70393	WL	11/9/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
70393	WL	11/9/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
70393	WL	11/9/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
70393	WL	11/9/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
70393	WL	11/9/2009	09112699	79-01-6	Trichloroethene	N001	8.4	ug/L		F	0.16		valid
70393	WL	11/9/2009	09112699	7440-61-1	Uranium	0001	0.038	ug/L	B	F	0.02		valid
70393	WL	11/9/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
70393	WL	11/9/2009	09112699	7440-66-6	Zinc	0001	4.5	ug/L	U	F	4.5		valid
70693	WL	11/9/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	1.3	ug/L		F	0.16		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
70693	WL	11/9/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
70693	WL	11/9/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
70693	WL	11/9/2009	09112699	75-35-4	1,1-Dichloroethene	N001	1.8	ug/L		F	0.14		valid
70693	WL	11/9/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
70693	WL	11/9/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
70693	WL	11/9/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
70693	WL	11/9/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
70693	WL	11/9/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
70693	WL	11/9/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
70693	WL	11/9/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
70693	WL	11/9/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
70693	WL	11/9/2009	09112699	7440-38-2	Arsenic	0001	4.4	ug/L	U	F	4.4		valid
70693	WL	11/9/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
70693	WL	11/9/2009	09112699	7440-41-7	Beryllium	0001	0.47	ug/L	U	F	0.47		valid
70693	WL	11/9/2009	09112699	7440-42-8	Boron	0001	24	ug/L	B	F	1.6		valid
70693	WL	11/9/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
70693	WL	11/9/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
70693	WL	11/9/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
70693	WL	11/9/2009	09112699	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
70693	WL	11/9/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
70693	WL	11/9/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
70693	WL	11/9/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
70693	WL	11/9/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
70693	WL	11/9/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
70693	WL	11/9/2009	09112699	7440-47-3	Chromium	0001	0.66	ug/L	U	F	0.66		valid
70693	WL	11/9/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
70693	WL	11/9/2009	09112699	7440-50-8	Copper	0001	1.4	ug/L	U	F	1.4		valid
70693	WL	11/9/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
70693	WL	11/9/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
70693	WL	11/9/2009	09112699	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
70693	WL	11/9/2009	09112699	7439-97-6	Mercury	0001	0.027	ug/L	U	F	0.027		valid
70693	WL	11/9/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
70693	WL	11/9/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
70693	WL	11/9/2009	09112699	7440-02-0	Nickel	0001	1.3	ug/L	U	F	1.3		valid
70693	WL	11/9/2009	09112699	7782-49-2	Selenium	0001	4.9	ug/L	U	F	4.9		valid
70693	WL	11/9/2009	09112699	7440-22-4	Silver	0001	1.2	ug/L	B	F	0.93		valid
70693	WL	11/9/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
70693	WL	11/9/2009	09112699	127-18-4	Tetrachloroethene	N001	0.79	ug/L	J	F	0.2		valid
70693	WL	11/9/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
70693	WL	11/9/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
70693	WL	11/9/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
70693	WL	11/9/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
70693	WL	11/9/2009	09112699	79-01-6	Trichloroethene	N001	2.3	ug/L		F	0.16		valid
70693	WL	11/9/2009	09112699	7440-61-1	Uranium	0001	0.031	ug/L	B	F	0.02		valid
70693	WL	11/9/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
70693	WL	11/9/2009	09112699	7440-66-6	Zinc	0001	4.5	ug/L	U	F	4.5		valid
73005	WL	11/10/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
73005	WL	11/10/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
73005	WL	11/10/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
73005	WL	11/10/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
73005	WL	11/10/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
73005	WL	11/10/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
73005	WL	11/10/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
73005	WL	11/10/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
73005	WL	11/10/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
73005	WL	11/10/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
73005	WL	11/10/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
73005	WL	11/10/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
73005	WL	11/10/2009	09112699	7440-38-2	Arsenic	0001	4.4	ug/L	U	F	4.4		valid
73005	WL	11/10/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
73005	WL	11/10/2009	09112699	7440-41-7	Beryllium	0001	0.47	ug/L	U	F	0.47		valid
73005	WL	11/10/2009	09112699	7440-42-8	Boron	0001	30	ug/L		F	1.6		valid
73005	WL	11/10/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
73005	WL	11/10/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
73005	WL	11/10/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
73005	WL	11/10/2009	09112699	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
73005	WL	11/10/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
73005	WL	11/10/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
73005	WL	11/10/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
73005	WL	11/10/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
73005	WL	11/10/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
73005	WL	11/10/2009	09112699	7440-47-3	Chromium	0001	1.2	ug/L	B J	F	0.66		U
73005	WL	11/10/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
73005	WL	11/10/2009	09112699	7440-50-8	Copper	0001	1.4	ug/L	U	F	1.4		valid
73005	WL	11/10/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
73005	WL	11/10/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
73005	WL	11/10/2009	09112699	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
73005	WL	11/10/2009	09112699	7439-97-6	Mercury	0001	0.027	ug/L	U	F	0.027		valid
73005	WL	11/10/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
73005	WL	11/10/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
73005	WL	11/10/2009	09112699	7440-02-0	Nickel	0001	1.3	ug/L	U	F	1.3		valid
73005	WL	11/10/2009	09112699	7782-49-2	Selenium	0001	15	ug/L		F	4.9		valid
73005	WL	11/10/2009	09112699	7440-22-4	Silver	0001	0.93	ug/L	U	F	0.93		valid
73005	WL	11/10/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
73005	WL	11/10/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
73005	WL	11/10/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
73005	WL	11/10/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
73005	WL	11/10/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
73005	WL	11/10/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
73005	WL	11/10/2009	09112699	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
73005	WL	11/10/2009	09112699	7440-61-1	Uranium	0001	22	ug/L		F	0.02		valid
73005	WL	11/10/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
73005	WL	11/10/2009	09112699	7440-66-6	Zinc	0001	6.2	ug/L	B	F	4.5		J
73105	WL	11/10/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
73105	WL	11/10/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
73105	WL	11/10/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
73105	WL	11/10/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
73105	WL	11/10/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
73105	WL	11/10/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
73105	WL	11/10/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
73105	WL	11/10/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
73105	WL	11/10/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
73105	WL	11/10/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
73105	WL	11/10/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
73105	WL	11/10/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
73105	WL	11/10/2009	09112699	7440-38-2	Arsenic	0001	4.4	ug/L	U	F	4.4		valid
73105	WL	11/10/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
73105	WL	11/10/2009	09112699	7440-41-7	Beryllium	0001	0.47	ug/L	U	F	0.47		valid
73105	WL	11/10/2009	09112699	7440-42-8	Boron	0001	110	ug/L		F	1.6		valid
73105	WL	11/10/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
73105	WL	11/10/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
73105	WL	11/10/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
73105	WL	11/10/2009	09112699	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
73105	WL	11/10/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
73105	WL	11/10/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
73105	WL	11/10/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
73105	WL	11/10/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
73105	WL	11/10/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
73105	WL	11/10/2009	09112699	7440-47-3	Chromium	0001	0.66	ug/L	U	F	0.66		valid
73105	WL	11/10/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
73105	WL	11/10/2009	09112699	7440-50-8	Copper	0001	1.4	ug/L	U	F	1.4		valid
73105	WL	11/10/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
73105	WL	11/10/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
73105	WL	11/10/2009	09112699	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
73105	WL	11/10/2009	09112699	7439-97-6	Mercury	0001	0.027	ug/L	U	F	0.027		valid
73105	WL	11/10/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
73105	WL	11/10/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
73105	WL	11/10/2009	09112699	7440-02-0	Nickel	0001	1.3	ug/L	B	F	1.3		valid
73105	WL	11/10/2009	09112699	7782-49-2	Selenium	0001	4.9	ug/L	U	F	4.9		valid
73105	WL	11/10/2009	09112699	7440-22-4	Silver	0001	0.93	ug/L	U	F	0.93		valid
73105	WL	11/10/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
73105	WL	11/10/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
73105	WL	11/10/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
73105	WL	11/10/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
73105	WL	11/10/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
73105	WL	11/10/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
73105	WL	11/10/2009	09112699	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
73105	WL	11/10/2009	09112699	7440-61-1	Uranium	0001	20	ug/L		F	0.04		valid
73105	WL	11/10/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
73105	WL	11/10/2009	09112699	7440-66-6	Zinc	0001	5.6	ug/L	B	F	4.5		valid
73205	WL	11/10/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
73205	WL	11/10/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
73205	WL	11/10/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
73205	WL	11/10/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
73205	WL	11/10/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
73205	WL	11/10/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
73205	WL	11/10/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
73205	WL	11/10/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
73205	WL	11/10/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
73205	WL	11/10/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
73205	WL	11/10/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
73205	WL	11/10/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
73205	WL	11/10/2009	09112699	7440-38-2	Arsenic	0001	4.4	ug/L	U	F	4.4		valid
73205	WL	11/10/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
73205	WL	11/10/2009	09112699	7440-41-7	Beryllium	0001	0.47	ug/L	U	F	0.47		valid
73205	WL	11/10/2009	09112699	7440-42-8	Boron	0001	55	ug/L		F	1.6		valid
73205	WL	11/10/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
73205	WL	11/10/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
73205	WL	11/10/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
73205	WL	11/10/2009	09112699	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
73205	WL	11/10/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
73205	WL	11/10/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
73205	WL	11/10/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
73205	WL	11/10/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
73205	WL	11/10/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
73205	WL	11/10/2009	09112699	7440-47-3	Chromium	0001	1.1	ug/L	B J	F	0.66		U
73205	WL	11/10/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
73205	WL	11/10/2009	09112699	7440-50-8	Copper	0001	1.8	ug/L	B	F	1.4		valid
73205	WL	11/10/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
73205	WL	11/10/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
73205	WL	11/10/2009	09112699	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
73205	WL	11/10/2009	09112699	7439-97-6	Mercury	0001	0.027	ug/L	U	F	0.027		valid
73205	WL	11/10/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
73205	WL	11/10/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
73205	WL	11/10/2009	09112699	7440-02-0	Nickel	0001	1.3	ug/L	U	F	1.3		valid
73205	WL	11/10/2009	09112699	7782-49-2	Selenium	0001	370	ug/L		F	4.9		valid
73205	WL	11/10/2009	09112699	7440-22-4	Silver	0001	0.93	ug/L	U	F	0.93		valid
73205	WL	11/10/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
73205	WL	11/10/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
73205	WL	11/10/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
73205	WL	11/10/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
73205	WL	11/10/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
73205	WL	11/10/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
73205	WL	11/10/2009	09112699	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
73205	WL	11/10/2009	09112699	7440-61-1	Uranium	0001	97	ug/L		F	0.04		valid
73205	WL	11/10/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
73205	WL	11/10/2009	09112699	7440-66-6	Zinc	0001	5.2	ug/L	B	F	4.5		valid
80005	WL	11/11/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
80005	WL	11/11/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
80005	WL	11/11/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
80005	WL	11/11/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
80005	WL	11/11/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.28	ug/L	U	F	0.28		valid
80005	WL	11/11/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
80005	WL	11/11/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
80005	WL	11/11/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
80005	WL	11/11/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
80005	WL	11/11/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
80005	WL	11/11/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.31	ug/L	J	F	0.16		valid
80005	WL	11/11/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
80005	WL	11/11/2009	09112699	105-67-9	2, 4-Dimethylphenol	N001	0.58	ug/L	U	F	0.58		valid
80005	WL	11/11/2009	09112699	95-95-4	2,4,5-Trichlorophenol	N001	0.45	ug/L	U	F	0.45		valid
80005	WL	11/11/2009	09112699	88-06-2	2,4,6-Trichlorophenol	N001	0.29	ug/L	U	F	0.29		valid
80005	WL	11/11/2009	09112699	120-83-2	2,4-Dichlorophenol	N001	0.64	ug/L	U	F	0.64		valid
80005	WL	11/11/2009	09112699	51-28-5	2,4-Dinitrophenol	N001	10	ug/L	U	F	10		valid
80005	WL	11/11/2009	09112699	121-14-2	2,4-Dinitrotoluene	N001	1.7	ug/L	U	F	1.7		valid
80005	WL	11/11/2009	09112699	606-20-2	2,6-Dinitrotoluene	N001	1.9	ug/L	U	F	1.9		valid
80005	WL	11/11/2009	09112699	91-58-7	2-Chloronaphthalene	N001	0.26	ug/L	U	F	0.26		valid
80005	WL	11/11/2009	09112699	95-57-8	2-Chlorophenol	N001	2	ug/L	U	F	2		valid
80005	WL	11/11/2009	09112699	91-94-1	3,3'-Dichlorobenzidine	N001	2	ug/L	U	F	2		valid
80005	WL	11/11/2009	09112699	534-52-1	4,6-Dinitro-2-methyl phenol	N001	4	ug/L	U	F	4		valid
80005	WL	11/11/2009	09112699	59-50-7	4-Chloro-3-methylphenol	N001	2.4	ug/L	U	F	2.4		valid
80005	WL	11/11/2009	09112699	100-02-7	4-Nitrophenol	N001	1.2	ug/L	U	F	1.2		valid
80005	WL	11/11/2009	09112699	83-32-9	Acenaphthene	N001	0.28	ug/L	U	F	0.28		valid
80005	WL	11/11/2009	09112699	120-12-7	Anthracene	N001	0.42	ug/L	U	F	0.42		valid
80005	WL	11/11/2009	09112699	7440-38-2	Arsenic	0001	4.4	ug/L	U	F	4.4		valid
80005	WL	11/11/2009	09112699	56-55-3	Benz(a)anthracene	N001	0.35	ug/L	U	F	0.35		valid
80005	WL	11/11/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
80005	WL	11/11/2009	09112699	50-32-8	Benzo(a)pyrene	N001	0.31	ug/L	U	F	0.31		valid
80005	WL	11/11/2009	09112699	205-99-2	Benzo(b)fluoranthene	N001	0.53	ug/L	U	F	0.53		valid
80005	WL	11/11/2009	09112699	191-24-2	Benzo(g,h,i)Perylene	N001	0.5	ug/L	U	F	0.5		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
80005	WL	11/11/2009	09112699	207-08-9	Benzo(k)fluoranthene	N001	0.46	ug/L	U	F	0.46		valid
80005	WL	11/11/2009	09112699	7440-41-7	Beryllium	0001	0.47	ug/L	U	F	0.47		valid
80005	WL	11/11/2009	09112699	111-44-4	Bis(2-chloroethyl) ether	N001	0.41	ug/L	U	F	0.41		valid
80005	WL	11/11/2009	09112699	108-60-1	Bis(2-chloroisopropyl) ether	N001	0.28	ug/L	U	F	0.28		valid
80005	WL	11/11/2009	09112699	117-81-7	Bis(2-ethylhexyl) phthalate	N001	2.2	ug/L	J B	F	0.56		U
80005	WL	11/11/2009	09112699	7440-42-8	Boron	0001	38	ug/L		F	1.6		valid
80005	WL	11/11/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
80005	WL	11/11/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
80005	WL	11/11/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
80005	WL	11/11/2009	09112699	85-68-7	Butyl benzyl phthalate	N001	1	ug/L	U	F	1		valid
80005	WL	11/11/2009	09112699	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
80005	WL	11/11/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
80005	WL	11/11/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
80005	WL	11/11/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
80005	WL	11/11/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
80005	WL	11/11/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
80005	WL	11/11/2009	09112699	7440-47-3	Chromium	0001	0.66	ug/L	U	F	0.66		valid
80005	WL	11/11/2009	09112699	218-01-9	Chrysene	N001	0.55	ug/L	J	F	0.54		valid
80005	WL	11/11/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
80005	WL	11/11/2009	09112699	7440-50-8	Copper	0001	1.4	ug/L	U	F	1.4		valid
80005	WL	11/11/2009	09112699	53-70-3	Dibenz(a,h)anthracene	N001	0.51	ug/L	U	F	0.51		valid
80005	WL	11/11/2009	09112699	84-66-2	Diethyl phthalate	N001	0.38	ug/L	U	F	0.38		valid
80005	WL	11/11/2009	09112699	131-11-3	Dimethyl phthalate	N001	0.21	ug/L	U	F	0.21		valid
80005	WL	11/11/2009	09112699	84-74-2	Di-n-butyl phthalate	N001	1.2	ug/L	U	F	1.2		valid
80005	WL	11/11/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
80005	WL	11/11/2009	09112699	206-44-0	Fluoranthene	N001	0.2	ug/L	U	F	0.2		valid
80005	WL	11/11/2009	09112699	86-73-7	Fluorene	N001	0.31	ug/L	U	F	0.31		valid
80005	WL	11/11/2009	09112699	118-74-1	Hexachlorobenzene	N001	0.66	ug/L	U	F	0.66		valid
80005	WL	11/11/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
80005	WL	11/11/2009	09112699	77-47-4	Hexachlorocyclopentadiene	N001	1.5	ug/L	U	F	1.5		valid
80005	WL	11/11/2009	09112699	67-72-1	Hexachloroethane	N001	2.1	ug/L	U	F	2.1		valid
80005	WL	11/11/2009	09112699	193-39-5	Indeno(1,2,3-cd)pyrene	N001	0.65	ug/L	U	F	0.65		valid
80005	WL	11/11/2009	09112699	78-59-1	Isophorone	N001	0.21	ug/L	U	F	0.21		valid
80005	WL	11/11/2009	09112699	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
80005	WL	11/11/2009	09112699	7439-97-6	Mercury	0001	0.027	ug/L	U	F	0.027		valid
80005	WL	11/11/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
80005	WL	11/11/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
80005	WL	11/11/2009	09112699	7440-02-0	Nickel	0001	1.3	ug/L	U	F	1.3		valid
80005	WL	11/11/2009	09112699	98-95-3	Nitrobenzene	N001	0.81	ug/L	U	F	0.81		valid
80005	WL	11/11/2009	09112699	621-64-7	N-Nitrosodi-n-propylamine	N001	0.35	ug/L	U	F	0.35		valid
80005	WL	11/11/2009	09112699	86-30-6	N-Nitrosodiphenylamine	N001	0.44	ug/L	U	F	0.44		valid
80005	WL	11/11/2009	09112699	87-86-5	Pentachlorophenol	N001	20	ug/L	U	F	20		valid
80005	WL	11/11/2009	09112699	108-95-2	Phenol	N001	2	ug/L	U	F	2		valid
80005	WL	11/11/2009	09112699	129-00-0	Pyrene	N001	0.37	ug/L	U	F	0.37		valid
80005	WL	11/11/2009	09112699	7782-49-2	Selenium	0001	4.9	ug/L	U	F	4.9		valid
80005	WL	11/11/2009	09112699	7440-22-4	Silver	0001	0.93	ug/L	U	F	0.93		valid
80005	WL	11/11/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
80005	WL	11/11/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
80005	WL	11/11/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
80005	WL	11/11/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
80005	WL	11/11/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
80005	WL	11/11/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
80005	WL	11/11/2009	09112699	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
80005	WL	11/11/2009	09112699	7440-61-1	Uranium	0001	9.6	ug/L		F	0.04		valid
80005	WL	11/11/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
80005	WL	11/11/2009	09112699	7440-66-6	Zinc	0001	4.8	ug/L	B	F	4.5		valid
80105	WL	11/11/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
80105	WL	11/11/2009	09112699	71-55-6	1,1,1-Trichloroethane	N002	0.16	ug/L	U	D	0.16		valid
80105	WL	11/11/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
80105	WL	11/11/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N002	0.2	ug/L	U	D	0.2		valid
80105	WL	11/11/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
80105	WL	11/11/2009	09112699	79-00-5	1,1,2-Trichloroethane	N002	0.32	ug/L	U	D	0.32		valid
80105	WL	11/11/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
80105	WL	11/11/2009	09112699	75-35-4	1,1-Dichloroethene	N002	0.14	ug/L	U	D	0.14		valid
80105	WL	11/11/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.28	ug/L	U	F	0.28		valid
80105	WL	11/11/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N002	0.28	ug/L	U	D	0.28		valid
80105	WL	11/11/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
80105	WL	11/11/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N002	0.81	ug/L	U	D	0.81		valid
80105	WL	11/11/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
80105	WL	11/11/2009	09112699	106-93-4	1,2-Dibromoethane	N002	0.18	ug/L	U	D	0.18		valid
80105	WL	11/11/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
80105	WL	11/11/2009	09112699	95-50-1	1,2-Dichlorobenzene	N002	0.13	ug/L	U	D	0.13		valid
80105	WL	11/11/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
80105	WL	11/11/2009	09112699	107-06-2	1,2-Dichloroethane	N002	0.13	ug/L	U	D	0.13		valid
80105	WL	11/11/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
80105	WL	11/11/2009	09112699	78-87-5	1,2-Dichloropropane	N002	0.13	ug/L	U	D	0.13		valid
80105	WL	11/11/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
80105	WL	11/11/2009	09112699	541-73-1	1,3-Dichlorobenzene	N002	0.16	ug/L	U	D	0.16		valid
80105	WL	11/11/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
80105	WL	11/11/2009	09112699	106-46-7	1,4-Dichlorobenzene	N002	0.16	ug/L	U	D	0.16		valid
80105	WL	11/11/2009	09112699	105-67-9	2, 4-Dimethylphenol	N001	0.58	ug/L	U	F	0.58		valid
80105	WL	11/11/2009	09112699	105-67-9	2, 4-Dimethylphenol	N002	0.58	ug/L	U	D	0.58		valid
80105	WL	11/11/2009	09112699	95-95-4	2,4,5-Trichlorophenol	N001	0.45	ug/L	U	F	0.45		valid
80105	WL	11/11/2009	09112699	95-95-4	2,4,5-Trichlorophenol	N002	0.45	ug/L	U	D	0.45		valid
80105	WL	11/11/2009	09112699	88-06-2	2,4,6-Trichlorophenol	N001	0.29	ug/L	U	F	0.29		valid
80105	WL	11/11/2009	09112699	88-06-2	2,4,6-Trichlorophenol	N002	0.29	ug/L	U	D	0.29		valid
80105	WL	11/11/2009	09112699	120-83-2	2,4-Dichlorophenol	N001	0.64	ug/L	U	F	0.64		valid
80105	WL	11/11/2009	09112699	120-83-2	2,4-Dichlorophenol	N002	0.64	ug/L	U	D	0.64		valid
80105	WL	11/11/2009	09112699	51-28-5	2,4-Dinitrophenol	N001	10	ug/L	U	F	10		valid
80105	WL	11/11/2009	09112699	51-28-5	2,4-Dinitrophenol	N002	10	ug/L	U	D	10		valid
80105	WL	11/11/2009	09112699	121-14-2	2,4-Dinitrotoluene	N001	1.7	ug/L	U	F	1.7		valid
80105	WL	11/11/2009	09112699	121-14-2	2,4-Dinitrotoluene	N002	1.7	ug/L	U	D	1.7		valid
80105	WL	11/11/2009	09112699	606-20-2	2,6-Dinitrotoluene	N001	1.9	ug/L	U	F	1.9		valid
80105	WL	11/11/2009	09112699	606-20-2	2,6-Dinitrotoluene	N002	1.9	ug/L	U	D	1.9		valid
80105	WL	11/11/2009	09112699	91-58-7	2-Chloronaphthalene	N001	0.26	ug/L	U	F	0.26		valid
80105	WL	11/11/2009	09112699	91-58-7	2-Chloronaphthalene	N002	0.26	ug/L	U	D	0.26		valid
80105	WL	11/11/2009	09112699	95-57-8	2-Chlorophenol	N001	2	ug/L	U	F	2		valid
80105	WL	11/11/2009	09112699	95-57-8	2-Chlorophenol	N002	2	ug/L	U	D	2		valid
80105	WL	11/11/2009	09112699	91-94-1	3,3'-Dichlorobenzidine	N001	2	ug/L	U	F	2		valid
80105	WL	11/11/2009	09112699	91-94-1	3,3'-Dichlorobenzidine	N002	2	ug/L	U	D	2		valid
80105	WL	11/11/2009	09112699	534-52-1	4,6-Dinitro-2-methyl phenol	N001	4	ug/L	U	F	4		valid
80105	WL	11/11/2009	09112699	534-52-1	4,6-Dinitro-2-methyl phenol	N002	4	ug/L	U	D	4		valid
80105	WL	11/11/2009	09112699	59-50-7	4-Chloro-3-methylphenol	N001	2.4	ug/L	U	F	2.4		valid
80105	WL	11/11/2009	09112699	59-50-7	4-Chloro-3-methylphenol	N002	2.4	ug/L	U	D	2.4		valid
80105	WL	11/11/2009	09112699	100-02-7	4-Nitrophenol	N001	1.2	ug/L	U	F	1.2		valid
80105	WL	11/11/2009	09112699	100-02-7	4-Nitrophenol	N002	1.2	ug/L	U	D	1.2		valid
80105	WL	11/11/2009	09112699	83-32-9	Acenaphthene	N001	0.28	ug/L	U	F	0.28		valid
80105	WL	11/11/2009	09112699	83-32-9	Acenaphthene	N002	0.28	ug/L	U	D	0.28		valid
80105	WL	11/11/2009	09112699	120-12-7	Anthracene	N001	0.42	ug/L	U	F	0.42		valid
80105	WL	11/11/2009	09112699	120-12-7	Anthracene	N002	0.42	ug/L	U	D	0.42		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
80105	WL	11/11/2009	09112699	7440-38-2	Arsenic	0001	4.4	ug/L	U	F	4.4		valid
80105	WL	11/11/2009	09112699	7440-38-2	Arsenic	0002	4.4	ug/L	U	D	4.4		valid
80105	WL	11/11/2009	09112699	56-55-3	Benz(a)anthracene	N001	0.35	ug/L	U	F	0.35		valid
80105	WL	11/11/2009	09112699	56-55-3	Benz(a)anthracene	N002	0.35	ug/L	U	D	0.35		valid
80105	WL	11/11/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
80105	WL	11/11/2009	09112699	71-43-2	Benzene	N002	0.16	ug/L	U	D	0.16		valid
80105	WL	11/11/2009	09112699	50-32-8	Benzo(a)pyrene	N001	0.31	ug/L	U	F	0.31		valid
80105	WL	11/11/2009	09112699	50-32-8	Benzo(a)pyrene	N002	0.31	ug/L	U	D	0.31		valid
80105	WL	11/11/2009	09112699	205-99-2	Benzo(b)fluoranthene	N001	0.53	ug/L	U	F	0.53		valid
80105	WL	11/11/2009	09112699	205-99-2	Benzo(b)fluoranthene	N002	0.53	ug/L	U	D	0.53		valid
80105	WL	11/11/2009	09112699	191-24-2	Benzo(g,h,i)Perylene	N001	0.5	ug/L	U	F	0.5		valid
80105	WL	11/11/2009	09112699	191-24-2	Benzo(g,h,i)Perylene	N002	0.5	ug/L	U	D	0.5		valid
80105	WL	11/11/2009	09112699	207-08-9	Benzo(k)fluoranthene	N001	0.46	ug/L	U	F	0.46		valid
80105	WL	11/11/2009	09112699	207-08-9	Benzo(k)fluoranthene	N002	0.46	ug/L	U	D	0.46		valid
80105	WL	11/11/2009	09112699	7440-41-7	Beryllium	0001	0.47	ug/L	U	F	0.47		valid
80105	WL	11/11/2009	09112699	7440-41-7	Beryllium	0002	0.47	ug/L	U	D	0.47		valid
80105	WL	11/11/2009	09112699	111-44-4	Bis(2-chloroethyl) ether	N001	0.41	ug/L	U	F	0.41		valid
80105	WL	11/11/2009	09112699	111-44-4	Bis(2-chloroethyl) ether	N002	0.41	ug/L	U	D	0.41		valid
80105	WL	11/11/2009	09112699	108-60-1	Bis(2-chloroisopropyl) ether	N001	0.28	ug/L	U	F	0.28		valid
80105	WL	11/11/2009	09112699	108-60-1	Bis(2-chloroisopropyl) ether	N002	0.28	ug/L	U	D	0.28		valid
80105	WL	11/11/2009	09112699	117-81-7	Bis(2-ethylhexyl) phthalate	N001	2.2	ug/L	J B	F	0.56		U
80105	WL	11/11/2009	09112699	117-81-7	Bis(2-ethylhexyl) phthalate	N002	2.2	ug/L	J B	D	0.56		U
80105	WL	11/11/2009	09112699	7440-42-8	Boron	0001	130	ug/L		F	1.6		valid
80105	WL	11/11/2009	09112699	7440-42-8	Boron	0002	120	ug/L		D	1.6		valid
80105	WL	11/11/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
80105	WL	11/11/2009	09112699	75-27-4	Bromodichloromethane	N002	0.17	ug/L	U	D	0.17		valid
80105	WL	11/11/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
80105	WL	11/11/2009	09112699	75-25-2	Bromoform	N002	0.19	ug/L	U	D	0.19		valid
80105	WL	11/11/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
80105	WL	11/11/2009	09112699	74-83-9	Bromomethane	N002	0.21	ug/L	U	D	0.21		valid
80105	WL	11/11/2009	09112699	85-68-7	Butyl benzyl phthalate	N001	1	ug/L	U	F	1		valid
80105	WL	11/11/2009	09112699	85-68-7	Butyl benzyl phthalate	N002	1	ug/L	U	D	1		valid
80105	WL	11/11/2009	09112699	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
80105	WL	11/11/2009	09112699	7440-43-9	Cadmium	0002	0.45	ug/L	U	D	0.45		valid
80105	WL	11/11/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
80105	WL	11/11/2009	09112699	56-23-5	Carbon tetrachloride	N002	0.19	ug/L	U	D	0.19		valid
80105	WL	11/11/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
80105	WL	11/11/2009	09112699	108-90-7	Chlorobenzene	N002	0.17	ug/L	U	D	0.17		valid
80105	WL	11/11/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
80105	WL	11/11/2009	09112699	124-48-1	Chlorodibromomethane	N002	0.17	ug/L	U	D	0.17		valid
80105	WL	11/11/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
80105	WL	11/11/2009	09112699	67-66-3	Chloroform	N002	0.16	ug/L	U	D	0.16		valid
80105	WL	11/11/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
80105	WL	11/11/2009	09112699	74-87-3	Chloromethane	N002	0.3	ug/L	U	D	0.3		valid
80105	WL	11/11/2009	09112699	7440-47-3	Chromium	0001	0.66	ug/L	U	F	0.66		valid
80105	WL	11/11/2009	09112699	7440-47-3	Chromium	0002	0.66	ug/L	U	D	0.66		valid
80105	WL	11/11/2009	09112699	218-01-9	Chrysene	N001	0.54	ug/L	U	F	0.54		valid
80105	WL	11/11/2009	09112699	218-01-9	Chrysene	N002	0.54	ug/L	U	D	0.54		valid
80105	WL	11/11/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
80105	WL	11/11/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N002	0.15	ug/L	U	D	0.15		valid
80105	WL	11/11/2009	09112699	7440-50-8	Copper	0001	1.4	ug/L	U	F	1.4		valid
80105	WL	11/11/2009	09112699	7440-50-8	Copper	0002	1.4	ug/L	U	D	1.4		valid
80105	WL	11/11/2009	09112699	53-70-3	Dibenz(a,h)anthracene	N001	0.51	ug/L	U	F	0.51		valid
80105	WL	11/11/2009	09112699	53-70-3	Dibenz(a,h)anthracene	N002	0.51	ug/L	U	D	0.51		valid
80105	WL	11/11/2009	09112699	84-66-2	Diethyl phthalate	N001	0.38	ug/L	U	F	0.38		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
80105	WL	11/11/2009	09112699	84-66-2	Diethyl phthalate	N002	0.38	ug/L	U	D	0.38		valid
80105	WL	11/11/2009	09112699	131-11-3	Dimethyl phthalate	N001	0.21	ug/L	U	F	0.21		valid
80105	WL	11/11/2009	09112699	131-11-3	Dimethyl phthalate	N002	0.21	ug/L	U	D	0.21		valid
80105	WL	11/11/2009	09112699	84-74-2	Di-n-butyl phthalate	N001	1.2	ug/L	U	F	1.2		valid
80105	WL	11/11/2009	09112699	84-74-2	Di-n-butyl phthalate	N002	1.2	ug/L	U	D	1.2		valid
80105	WL	11/11/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
80105	WL	11/11/2009	09112699	100-41-4	Ethylbenzene	N002	0.16	ug/L	U	D	0.16		valid
80105	WL	11/11/2009	09112699	206-44-0	Fluoranthene	N001	0.2	ug/L	U	F	0.2		valid
80105	WL	11/11/2009	09112699	206-44-0	Fluoranthene	N002	0.2	ug/L	U	D	0.2		valid
80105	WL	11/11/2009	09112699	86-73-7	Fluorene	N001	0.31	ug/L	U	F	0.31		valid
80105	WL	11/11/2009	09112699	86-73-7	Fluorene	N002	0.31	ug/L	U	D	0.31		valid
80105	WL	11/11/2009	09112699	118-74-1	Hexachlorobenzene	N001	0.66	ug/L	U	F	0.66		valid
80105	WL	11/11/2009	09112699	118-74-1	Hexachlorobenzene	N002	0.66	ug/L	U	D	0.66		valid
80105	WL	11/11/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
80105	WL	11/11/2009	09112699	87-68-3	Hexachlorobutadiene	N002	0.12	ug/L	U	D	0.12		valid
80105	WL	11/11/2009	09112699	77-47-4	Hexachlorocyclopentadiene	N001	1.5	ug/L	U	F	1.5		valid
80105	WL	11/11/2009	09112699	77-47-4	Hexachlorocyclopentadiene	N002	1.5	ug/L	U	D	1.5		valid
80105	WL	11/11/2009	09112699	67-72-1	Hexachloroethane	N001	2.1	ug/L	U	F	2.1		valid
80105	WL	11/11/2009	09112699	67-72-1	Hexachloroethane	N002	2.1	ug/L	U	D	2.1		valid
80105	WL	11/11/2009	09112699	193-39-5	Indeno(1,2,3-cd)pyrene	N001	0.65	ug/L	U	F	0.65		valid
80105	WL	11/11/2009	09112699	193-39-5	Indeno(1,2,3-cd)pyrene	N002	0.65	ug/L	U	D	0.65		valid
80105	WL	11/11/2009	09112699	78-59-1	Isophorone	N001	0.21	ug/L	U	F	0.21		valid
80105	WL	11/11/2009	09112699	78-59-1	Isophorone	N002	0.21	ug/L	U	D	0.21		valid
80105	WL	11/11/2009	09112699	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
80105	WL	11/11/2009	09112699	7439-92-1	Lead	0002	2.6	ug/L	U	D	2.6		valid
80105	WL	11/11/2009	09112699	7439-97-6	Mercury	0001	0.027	ug/L	U	F	0.027		valid
80105	WL	11/11/2009	09112699	7439-97-6	Mercury	0002	0.027	ug/L	U	D	0.027		valid
80105	WL	11/11/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
80105	WL	11/11/2009	09112699	75-09-2	Methylene chloride	N002	0.32	ug/L	U	D	0.32		valid
80105	WL	11/11/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
80105	WL	11/11/2009	09112699	91-20-3	Naphthalene	N002	0.22	ug/L	U	D	0.22		valid
80105	WL	11/11/2009	09112699	7440-02-0	Nickel	0001	1.3	ug/L	U	F	1.3		valid
80105	WL	11/11/2009	09112699	7440-02-0	Nickel	0002	1.3	ug/L	U	D	1.3		valid
80105	WL	11/11/2009	09112699	98-95-3	Nitrobenzene	N001	0.81	ug/L	U	F	0.81		valid
80105	WL	11/11/2009	09112699	98-95-3	Nitrobenzene	N002	0.81	ug/L	U	D	0.81		valid
80105	WL	11/11/2009	09112699	621-64-7	N-Nitrosodi-n-propylamine	N001	0.35	ug/L	U	F	0.35		valid
80105	WL	11/11/2009	09112699	621-64-7	N-Nitrosodi-n-propylamine	N002	0.35	ug/L	U	D	0.35		valid
80105	WL	11/11/2009	09112699	86-30-6	N-Nitrosodiphenylamine	N001	0.44	ug/L	U	F	0.44		valid
80105	WL	11/11/2009	09112699	86-30-6	N-Nitrosodiphenylamine	N002	0.44	ug/L	U	D	0.44		valid
80105	WL	11/11/2009	09112699	87-86-5	Pentachlorophenol	N001	20	ug/L	U	F	20		valid
80105	WL	11/11/2009	09112699	87-86-5	Pentachlorophenol	N002	20	ug/L	U	D	20		valid
80105	WL	11/11/2009	09112699	108-95-2	Phenol	N001	2	ug/L	U	F	2		valid
80105	WL	11/11/2009	09112699	108-95-2	Phenol	N002	2	ug/L	U	D	2		valid
80105	WL	11/11/2009	09112699	129-00-0	Pyrene	N001	0.37	ug/L	U	F	0.37		valid
80105	WL	11/11/2009	09112699	129-00-0	Pyrene	N002	0.37	ug/L	U	D	0.37		valid
80105	WL	11/11/2009	09112699	7782-49-2	Selenium	0001	5.2	ug/L	B	F	4.9		valid
80105	WL	11/11/2009	09112699	7782-49-2	Selenium	0002	4.9	ug/L	U	D	4.9		valid
80105	WL	11/11/2009	09112699	7440-22-4	Silver	0001	0.93	ug/L	U	F	0.93		valid
80105	WL	11/11/2009	09112699	7440-22-4	Silver	0002	0.93	ug/L	U	D	0.93		valid
80105	WL	11/11/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
80105	WL	11/11/2009	09112699	100-42-5	Styrene	N002	0.17	ug/L	U	D	0.17		valid
80105	WL	11/11/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
80105	WL	11/11/2009	09112699	127-18-4	Tetrachloroethene	N002	0.2	ug/L	U	D	0.2		valid
80105	WL	11/11/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
80105	WL	11/11/2009	09112699	108-88-3	Toluene	N002	0.17	ug/L	U	D	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
80105	WL	11/11/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
80105	WL	11/11/2009	09112699	1330-20-7	Total Xylenes	N002	0.19	ug/L	U	D	0.19		valid
80105	WL	11/11/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
80105	WL	11/11/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N002	0.15	ug/L	U	D	0.15		valid
80105	WL	11/11/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
80105	WL	11/11/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N002	0.19	ug/L	U	D	0.19		valid
80105	WL	11/11/2009	09112699	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
80105	WL	11/11/2009	09112699	79-01-6	Trichloroethene	N002	0.16	ug/L	U	D	0.16		valid
80105	WL	11/11/2009	09112699	7440-61-1	Uranium	0001	9.6	ug/L		F	0.04		valid
80105	WL	11/11/2009	09112699	7440-61-1	Uranium	0002	9.4	ug/L		D	0.02		valid
80105	WL	11/11/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
80105	WL	11/11/2009	09112699	75-01-4	Vinyl chloride	N002	0.4	ug/L	U	D	0.4		valid
80105	WL	11/11/2009	09112699	7440-66-6	Zinc	0001	4.5	ug/L	U	F	4.5		valid
80105	WL	11/11/2009	09112699	7440-66-6	Zinc	0002	4.5	ug/L	U	D	4.5		valid
80205	WL	11/11/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
80205	WL	11/11/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
80205	WL	11/11/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
80205	WL	11/11/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
80205	WL	11/11/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
80205	WL	11/11/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
80205	WL	11/11/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
80205	WL	11/11/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
80205	WL	11/11/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
80205	WL	11/11/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
80205	WL	11/11/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.18	ug/L	J	F	0.16		valid
80205	WL	11/11/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
80205	WL	11/11/2009	09112699	7440-38-2	Arsenic	0001	4.4	ug/L	U	F	4.4		valid
80205	WL	11/11/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
80205	WL	11/11/2009	09112699	7440-41-7	Beryllium	0001	0.47	ug/L	U	F	0.47		valid
80205	WL	11/11/2009	09112699	7440-42-8	Boron	0001	76	ug/L		F	1.6		valid
80205	WL	11/11/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
80205	WL	11/11/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
80205	WL	11/11/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
80205	WL	11/11/2009	09112699	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
80205	WL	11/11/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
80205	WL	11/11/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
80205	WL	11/11/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
80205	WL	11/11/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
80205	WL	11/11/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
80205	WL	11/11/2009	09112699	7440-47-3	Chromium	0001	0.66	ug/L	U	F	0.66		valid
80205	WL	11/11/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
80205	WL	11/11/2009	09112699	7440-50-8	Copper	0001	1.4	ug/L	U	F	1.4		valid
80205	WL	11/11/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
80205	WL	11/11/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
80205	WL	11/11/2009	09112699	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
80205	WL	11/11/2009	09112699	7439-97-6	Mercury	0001	0.027	ug/L	U	F	0.027		valid
80205	WL	11/11/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
80205	WL	11/11/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
80205	WL	11/11/2009	09112699	7440-02-0	Nickel	0001	1.9	ug/L	B	F	1.3		valid
80205	WL	11/11/2009	09112699	7782-49-2	Selenium	0001	9.4	ug/L	B	F	4.9		valid
80205	WL	11/11/2009	09112699	7440-22-4	Silver	0001	0.93	ug/L	B	F	0.93		valid
80205	WL	11/11/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
80205	WL	11/11/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
80205	WL	11/11/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
80205	WL	11/11/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
80205	WL	11/11/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
80205	WL	11/11/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
80205	WL	11/11/2009	09112699	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
80205	WL	11/11/2009	09112699	7440-61-1	Uranium	0001	61	ug/L		F	0.04		valid
80205	WL	11/11/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
80205	WL	11/11/2009	09112699	7440-66-6	Zinc	0001	4.5	ug/L	B	F	4.5		valid
80205	WL	11/24/2009	09112724	120-82-1	1,2,4-Trichlorobenzene	N001	0.28	ug/L	U	F	0.28		valid
80205	WL	11/24/2009	09112724	95-50-1	1,2-Dichlorobenzene	N001	0.32	ug/L	J B	F	0.23		U
80205	WL	11/24/2009	09112724	541-73-1	1,3-Dichlorobenzene	N001	0.3	ug/L	U	F	0.3		valid
80205	WL	11/24/2009	09112724	106-46-7	1,4-Dichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
80205	WL	11/24/2009	09112724	105-67-9	2, 4-Dimethylphenol	N001	0.58	ug/L	U	F	0.58		valid
80205	WL	11/24/2009	09112724	95-95-4	2,4,5-Trichlorophenol	N001	0.45	ug/L	U	F	0.45		valid
80205	WL	11/24/2009	09112724	88-06-2	2,4,6-Trichlorophenol	N001	0.29	ug/L	U	F	0.29		valid
80205	WL	11/24/2009	09112724	120-83-2	2,4-Dichlorophenol	N001	0.64	ug/L	U	F	0.64		valid
80205	WL	11/24/2009	09112724	51-28-5	2,4-Dinitrophenol	N001	10	ug/L	U	F	10		valid
80205	WL	11/24/2009	09112724	121-14-2	2,4-Dinitrotoluene	N001	1.7	ug/L	U	F	1.7		valid
80205	WL	11/24/2009	09112724	606-20-2	2,6-Dinitrotoluene	N001	1.9	ug/L	U	F	1.9		valid
80205	WL	11/24/2009	09112724	91-58-7	2-Chloronaphthalene	N001	0.26	ug/L	U	F	0.26		valid
80205	WL	11/24/2009	09112724	95-57-8	2-Chlorophenol	N001	2	ug/L	U	F	2		valid
80205	WL	11/24/2009	09112724	91-94-1	3,3'-Dichlorobenzidine	N001	2	ug/L	U	F	2		valid
80205	WL	11/24/2009	09112724	534-52-1	4,6-Dinitro-2-methyl phenol	N001	4	ug/L	U	F	4		valid
80205	WL	11/24/2009	09112724	59-50-7	4-Chloro-3-methylphenol	N001	2.4	ug/L	U	F	2.4		valid
80205	WL	11/24/2009	09112724	100-02-7	4-Nitrophenol	N001	1.2	ug/L	U	F	1.2		valid
80205	WL	11/24/2009	09112724	83-32-9	Acenaphthene	N001	0.28	ug/L	U	F	0.28		valid
80205	WL	11/24/2009	09112724	120-12-7	Anthracene	N001	0.42	ug/L	U	F	0.42		valid
80205	WL	11/24/2009	09112724	56-55-3	Benz(a)anthracene	N001	0.35	ug/L	U	F	0.35		valid
80205	WL	11/24/2009	09112724	50-32-8	Benzo(a)pyrene	N001	0.31	ug/L	U	F	0.31		valid
80205	WL	11/24/2009	09112724	205-99-2	Benzo(b)fluoranthene	N001	0.53	ug/L	U	F	0.53		valid
80205	WL	11/24/2009	09112724	191-24-2	Benzo(g,h,i)Perylene	N001	0.5	ug/L	U	F	0.5		valid
80205	WL	11/24/2009	09112724	207-08-9	Benzo(k)fluoranthene	N001	0.46	ug/L	U	F	0.46		valid
80205	WL	11/24/2009	09112724	111-44-4	Bis(2-chloroethyl) ether	N001	0.41	ug/L	U	F	0.41		valid
80205	WL	11/24/2009	09112724	108-60-1	Bis(2-chloroisopropyl) ether	N001	0.28	ug/L	U	F	0.28		valid
80205	WL	11/24/2009	09112724	117-81-7	Bis(2-ethylhexyl) phthalate	N001	0.56	ug/L	U	F	0.56		valid
80205	WL	11/24/2009	09112724	85-68-7	Butyl benzyl phthalate	N001	1	ug/L	U	F	1		valid
80205	WL	11/24/2009	09112724	218-01-9	Chrysene	N001	0.65	ug/L	J B	F	0.54		U
80205	WL	11/24/2009	09112724	53-70-3	Dibenz(a,h)anthracene	N001	0.51	ug/L	U	F	0.51		valid
80205	WL	11/24/2009	09112724	84-66-2	Diethyl phthalate	N001	0.38	ug/L	U	F	0.38		valid
80205	WL	11/24/2009	09112724	131-11-3	Dimethyl phthalate	N001	0.21	ug/L	U	F	0.21		valid
80205	WL	11/24/2009	09112724	84-74-2	Di-n-butyl phthalate	N001	1.2	ug/L	U	F	1.2		valid
80205	WL	11/24/2009	09112724	206-44-0	Fluoranthene	N001	0.2	ug/L	U	F	0.2		valid
80205	WL	11/24/2009	09112724	86-73-7	Fluorene	N001	0.31	ug/L	U	F	0.31		valid
80205	WL	11/24/2009	09112724	118-74-1	Hexachlorobenzene	N001	0.66	ug/L	U	F	0.66		valid
80205	WL	11/24/2009	09112724	87-68-3	Hexachlorobutadiene	N001	3.3	ug/L	U	F	3.3		valid
80205	WL	11/24/2009	09112724	77-47-4	Hexachlorocyclopentadiene	N001	1.5	ug/L	U	F	1.5		valid
80205	WL	11/24/2009	09112724	67-72-1	Hexachloroethane	N001	2.1	ug/L	U	F	2.1		valid
80205	WL	11/24/2009	09112724	193-39-5	Indeno(1,2,3-cd)pyrene	N001	0.65	ug/L	U	F	0.65		valid
80205	WL	11/24/2009	09112724	78-59-1	Isophorone	N001	0.21	ug/L	U	F	0.21		valid
80205	WL	11/24/2009	09112724	91-20-3	Naphthalene	N001	0.29	ug/L	U	F	0.29		valid
80205	WL	11/24/2009	09112724	98-95-3	Nitrobenzene	N001	0.81	ug/L	U	F	0.81		valid
80205	WL	11/24/2009	09112724	621-64-7	N-Nitrosodi-n-propylamine	N001	0.35	ug/L	U	F	0.35		valid
80205	WL	11/24/2009	09112724	86-30-6	N-Nitrosodiphenylamine	N001	0.44	ug/L	U	F	0.44		valid
80205	WL	11/24/2009	09112724	87-86-5	Pentachlorophenol	N001	20	ug/L	U	F	20		valid
80205	WL	11/24/2009	09112724	108-95-2	Phenol	N001	2	ug/L	U	F	2		valid
80205	WL	11/24/2009	09112724	129-00-0	Pyrene	N001	0.37	ug/L	U	F	0.37		valid
88104	WL	10/27/2009	09102668	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
88104	WL	10/27/2009	09102668	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
88104	WL	10/27/2009	09102668	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
88104	WL	10/27/2009	09102668	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
88104	WL	10/27/2009	09102668	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
88104	WL	10/27/2009	09102668	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
88104	WL	10/27/2009	09102668	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
88104	WL	10/27/2009	09102668	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
88104	WL	10/27/2009	09102668	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
88104	WL	10/27/2009	09102668	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
88104	WL	10/27/2009	09102668	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
88104	WL	10/27/2009	09102668	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
88104	WL	10/27/2009	09102668	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
88104	WL	10/27/2009	09102668	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
88104	WL	10/27/2009	09102668	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
88104	WL	10/27/2009	09102668	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
88104	WL	10/27/2009	09102668	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
88104	WL	10/27/2009	09102668	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
88104	WL	10/27/2009	09102668	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
88104	WL	10/27/2009	09102668	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
88104	WL	10/27/2009	09102668	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
88104	WL	10/27/2009	09102668	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
88104	WL	10/27/2009	09102668	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
88104	WL	10/27/2009	09102668	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
88104	WL	10/27/2009	09102668	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
88104	WL	10/27/2009	09102668	91-20-3	Naphthalene	N001	0.27	ug/L	J B	F	0.22		U
88104	WL	10/27/2009	09102668	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
88104	WL	10/27/2009	09102668	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
88104	WL	10/27/2009	09102668	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
88104	WL	10/27/2009	09102668	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
88104	WL	10/27/2009	09102668	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
88104	WL	10/27/2009	09102668	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
88104	WL	10/27/2009	09102668	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
88104	WL	10/27/2009	09102668	7440-61-1	Uranium	0001	61	ug/L		F	0.02		valid
88104	WL	10/27/2009	09102668	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
89104	WL	10/27/2009	09102668	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
89104	WL	10/27/2009	09102668	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
89104	WL	10/27/2009	09102668	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
89104	WL	10/27/2009	09102668	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
89104	WL	10/27/2009	09102668	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
89104	WL	10/27/2009	09102668	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
89104	WL	10/27/2009	09102668	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
89104	WL	10/27/2009	09102668	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
89104	WL	10/27/2009	09102668	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
89104	WL	10/27/2009	09102668	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
89104	WL	10/27/2009	09102668	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
89104	WL	10/27/2009	09102668	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
89104	WL	10/27/2009	09102668	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
89104	WL	10/27/2009	09102668	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
89104	WL	10/27/2009	09102668	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
89104	WL	10/27/2009	09102668	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
89104	WL	10/27/2009	09102668	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
89104	WL	10/27/2009	09102668	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
89104	WL	10/27/2009	09102668	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
89104	WL	10/27/2009	09102668	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
89104	WL	10/27/2009	09102668	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
89104	WL	10/27/2009	09102668	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
89104	WL	10/27/2009	09102668	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
89104	WL	10/27/2009	09102668	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
89104	WL	10/27/2009	09102668	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
89104	WL	10/27/2009	09102668	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
89104	WL	10/27/2009	09102668	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
89104	WL	10/27/2009	09102668	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
89104	WL	10/27/2009	09102668	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
89104	WL	10/27/2009	09102668	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
89104	WL	10/27/2009	09102668	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
89104	WL	10/27/2009	09102668	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
89104	WL	10/27/2009	09102668	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
89104	WL	10/27/2009	09102668	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
90399	WL	10/27/2009	09102668	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
90399	WL	10/27/2009	09102668	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
90399	WL	10/27/2009	09102668	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
90399	WL	10/27/2009	09102668	75-35-4	1,1-Dichloroethene	N001	1.1	ug/L		F	0.14		valid
90399	WL	10/27/2009	09102668	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
90399	WL	10/27/2009	09102668	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
90399	WL	10/27/2009	09102668	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
90399	WL	10/27/2009	09102668	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
90399	WL	10/27/2009	09102668	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
90399	WL	10/27/2009	09102668	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
90399	WL	10/27/2009	09102668	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
90399	WL	10/27/2009	09102668	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
90399	WL	10/27/2009	09102668	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
90399	WL	10/27/2009	09102668	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
90399	WL	10/27/2009	09102668	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
90399	WL	10/27/2009	09102668	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
90399	WL	10/27/2009	09102668	56-23-5	Carbon tetrachloride	N001	270	ug/L		F	1.9		valid
90399	WL	10/27/2009	09102668	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
90399	WL	10/27/2009	09102668	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
90399	WL	10/27/2009	09102668	67-66-3	Chloroform	N001	37	ug/L		F	0.16		valid
90399	WL	10/27/2009	09102668	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
90399	WL	10/27/2009	09102668	156-59-2	cis-1,2-Dichloroethene	N001	3.6	ug/L		F	0.15		valid
90399	WL	10/27/2009	09102668	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
90399	WL	10/27/2009	09102668	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
90399	WL	10/27/2009	09102668	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
90399	WL	10/27/2009	09102668	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
90399	WL	10/27/2009	09102668	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
90399	WL	10/27/2009	09102668	127-18-4	Tetrachloroethene	N001	5.3	ug/L		F	0.2		valid
90399	WL	10/27/2009	09102668	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
90399	WL	10/27/2009	09102668	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
90399	WL	10/27/2009	09102668	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
90399	WL	10/27/2009	09102668	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
90399	WL	10/27/2009	09102668	79-01-6	Trichloroethene	N001	380	ug/L		F	1.6		valid
90399	WL	10/27/2009	09102668	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
91203	WL	11/3/2009	09112685	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
91203	WL	11/3/2009	09112685	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
91203	WL	11/3/2009	09112685	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
91203	WL	11/3/2009	09112685	75-35-4	1,1-Dichloroethene	N001	0.63	ug/L	J	F	0.14		valid
91203	WL	11/3/2009	09112685	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
91203	WL	11/3/2009	09112685	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
91203	WL	11/3/2009	09112685	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
91203	WL	11/3/2009	09112685	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
91203	WL	11/3/2009	09112685	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
91203	WL	11/3/2009	09112685	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
91203	WL	11/3/2009	09112685	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
91203	WL	11/3/2009	09112685	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
91203	WL	11/3/2009	09112685	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
91203	WL	11/3/2009	09112685	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
91203	WL	11/3/2009	09112685	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
91203	WL	11/3/2009	09112685	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
91203	WL	11/3/2009	09112685	56-23-5	Carbon tetrachloride	N001	84	ug/L		F	0.76		valid
91203	WL	11/3/2009	09112685	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
91203	WL	11/3/2009	09112685	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
91203	WL	11/3/2009	09112685	67-66-3	Chloroform	N001	5.8	ug/L		F	0.16		valid
91203	WL	11/3/2009	09112685	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
91203	WL	11/3/2009	09112685	156-59-2	cis-1,2-Dichloroethene	N001	3.1	ug/L		F	0.15		valid
91203	WL	11/3/2009	09112685	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
91203	WL	11/3/2009	09112685	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
91203	WL	11/3/2009	09112685	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
91203	WL	11/3/2009	09112685	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
91203	WL	11/3/2009	09112685	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
91203	WL	11/3/2009	09112685	127-18-4	Tetrachloroethene	N001	5.5	ug/L		F	0.2		valid
91203	WL	11/3/2009	09112685	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
91203	WL	11/3/2009	09112685	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
91203	WL	11/3/2009	09112685	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
91203	WL	11/3/2009	09112685	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
91203	WL	11/3/2009	09112685	79-01-6	Trichloroethene	N001	2.9	ug/L		F	0.16		valid
91203	WL	11/3/2009	09112685	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
91305	WL	11/3/2009	09112685	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
91305	WL	11/3/2009	09112685	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
91305	WL	11/3/2009	09112685	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
91305	WL	11/3/2009	09112685	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
91305	WL	11/3/2009	09112685	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
91305	WL	11/3/2009	09112685	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
91305	WL	11/3/2009	09112685	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
91305	WL	11/3/2009	09112685	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
91305	WL	11/3/2009	09112685	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
91305	WL	11/3/2009	09112685	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
91305	WL	11/3/2009	09112685	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
91305	WL	11/3/2009	09112685	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
91305	WL	11/3/2009	09112685	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
91305	WL	11/3/2009	09112685	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
91305	WL	11/3/2009	09112685	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
91305	WL	11/3/2009	09112685	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
91305	WL	11/3/2009	09112685	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
91305	WL	11/3/2009	09112685	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
91305	WL	11/3/2009	09112685	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
91305	WL	11/3/2009	09112685	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
91305	WL	11/3/2009	09112685	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
91305	WL	11/3/2009	09112685	156-59-2	cis-1,2-Dichloroethene	N001	3.3	ug/L		F	0.15		valid
91305	WL	11/3/2009	09112685	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
91305	WL	11/3/2009	09112685	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
91305	WL	11/3/2009	09112685	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
91305	WL	11/3/2009	09112685	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
91305	WL	11/3/2009	09112685	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.18	mg/L	J	F	0.019		valid
91305	WL	11/3/2009	09112685	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
91305	WL	11/3/2009	09112685	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
91305	WL	11/3/2009	09112685	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
91305	WL	11/3/2009	09112685	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
91305	WL	11/3/2009	09112685	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
91305	WL	11/3/2009	09112685	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
91305	WL	11/3/2009	09112685	79-01-6	Trichloroethene	N001	0.21	ug/L	J	F	0.16		valid
91305	WL	11/3/2009	09112685	7440-61-1	Uranium	0001	39	ug/L		F	0.02		valid
91305	WL	11/3/2009	09112685	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
95099	WL	10/26/2009	09102668	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
95099	WL	10/26/2009	09102668	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
95099	WL	10/26/2009	09102668	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
95099	WL	10/26/2009	09102668	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
95099	WL	10/26/2009	09102668	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
95099	WL	10/26/2009	09102668	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
95099	WL	10/26/2009	09102668	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
95099	WL	10/26/2009	09102668	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
95099	WL	10/26/2009	09102668	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
95099	WL	10/26/2009	09102668	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
95099	WL	10/26/2009	09102668	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
95099	WL	10/26/2009	09102668	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
95099	WL	10/26/2009	09102668	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
95099	WL	10/26/2009	09102668	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
95099	WL	10/26/2009	09102668	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
95099	WL	10/26/2009	09102668	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
95099	WL	10/26/2009	09102668	56-23-5	Carbon tetrachloride	N001	0.76	ug/L	J	F	0.19		valid
95099	WL	10/26/2009	09102668	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
95099	WL	10/26/2009	09102668	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
95099	WL	10/26/2009	09102668	67-66-3	Chloroform	N001	0.21	ug/L	J	F	0.16		valid
95099	WL	10/26/2009	09102668	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
95099	WL	10/26/2009	09102668	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
95099	WL	10/26/2009	09102668	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
95099	WL	10/26/2009	09102668	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
95099	WL	10/26/2009	09102668	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
95099	WL	10/26/2009	09102668	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
95099	WL	10/26/2009	09102668	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
95099	WL	10/26/2009	09102668	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
95099	WL	10/26/2009	09102668	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
95099	WL	10/26/2009	09102668	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
95099	WL	10/26/2009	09102668	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
95099	WL	10/26/2009	09102668	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
95099	WL	10/26/2009	09102668	79-01-6	Trichloroethene	N001	0.42	ug/L	J	F	0.16		valid
95099	WL	10/26/2009	09102668	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
95199	WL	10/20/2009	09102656	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
95199	WL	10/20/2009	09102656	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
95199	WL	10/20/2009	09102656	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
95199	WL	10/20/2009	09102656	75-35-4	1,1-Dichloroethene	N001	1.3	ug/L		F	0.14		valid
95199	WL	10/20/2009	09102656	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
95199	WL	10/20/2009	09102656	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
95199	WL	10/20/2009	09102656	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
95199	WL	10/20/2009	09102656	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
95199	WL	10/20/2009	09102656	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
95199	WL	10/20/2009	09102656	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
95199	WL	10/20/2009	09102656	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
95199	WL	10/20/2009	09102656	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
95199	WL	10/20/2009	09102656	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
95199	WL	10/20/2009	09102656	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
95199	WL	10/20/2009	09102656	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
95199	WL	10/20/2009	09102656	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
95199	WL	10/20/2009	09102656	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
95199	WL	10/20/2009	09102656	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
95199	WL	10/20/2009	09102656	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
95199	WL	10/20/2009	09102656	67-66-3	Chloroform	N001	0.18	ug/L	J	F	0.16		valid
95199	WL	10/20/2009	09102656	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
95199	WL	10/20/2009	09102656	156-59-2	cis-1,2-Dichloroethene	N001	3.8	ug/L		F	0.15		valid
95199	WL	10/20/2009	09102656	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
95199	WL	10/20/2009	09102656	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
95199	WL	10/20/2009	09102656	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
95199	WL	10/20/2009	09102656	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
95199	WL	10/20/2009	09102656	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
95199	WL	10/20/2009	09102656	127-18-4	Tetrachloroethene	N001	5.1	ug/L		F	0.2		valid
95199	WL	10/20/2009	09102656	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
95199	WL	10/20/2009	09102656	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
95199	WL	10/20/2009	09102656	156-60-5	trans-1,2-Dichloroethene	N001	0.21	ug/L	J	F	0.15		valid
95199	WL	10/20/2009	09102656	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
95199	WL	10/20/2009	09102656	79-01-6	Trichloroethene	N001	110	ug/L		F	0.64		valid
95199	WL	10/20/2009	09102656	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
99305	WL	10/15/2009	09102650	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
99305	WL	10/15/2009	09102650	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
99305	WL	10/15/2009	09102650	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
99305	WL	10/15/2009	09102650	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
99305	WL	10/15/2009	09102650	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
99305	WL	10/15/2009	09102650	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
99305	WL	10/15/2009	09102650	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
99305	WL	10/15/2009	09102650	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
99305	WL	10/15/2009	09102650	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
99305	WL	10/15/2009	09102650	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
99305	WL	10/15/2009	09102650	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
99305	WL	10/15/2009	09102650	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
99305	WL	10/15/2009	09102650	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
99305	WL	10/15/2009	09102650	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
99305	WL	10/15/2009	09102650	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
99305	WL	10/15/2009	09102650	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
99305	WL	10/15/2009	09102650	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
99305	WL	10/15/2009	09102650	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
99305	WL	10/15/2009	09102650	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
99305	WL	10/15/2009	09102650	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
99305	WL	10/15/2009	09102650	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
99305	WL	10/15/2009	09102650	156-59-2	cis-1,2-Dichloroethene	N001	14	ug/L		F	0.15		valid
99305	WL	10/15/2009	09102650	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
99305	WL	10/15/2009	09102650	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
99305	WL	10/15/2009	09102650	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
99305	WL	10/15/2009	09102650	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
99305	WL	10/15/2009	09102650	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.69	mg/L	J	F	0.019		valid
99305	WL	10/15/2009	09102650	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
99305	WL	10/15/2009	09102650	127-18-4	Tetrachloroethene	N001	5	ug/L		F	0.2		valid
99305	WL	10/15/2009	09102650	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
99305	WL	10/15/2009	09102650	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
99305	WL	10/15/2009	09102650	156-60-5	trans-1,2-Dichloroethene	N001	0.25	ug/L	J	F	0.15		valid
99305	WL	10/15/2009	09102650	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
99305	WL	10/15/2009	09102650	79-01-6	Trichloroethene	N001	110	ug/L		F	0.64		valid
99305	WL	10/15/2009	09102650	7440-61-1	Uranium	0001	59	ug/L		F	0.02		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
99305	WL	10/15/2009	09102650	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
99405	WL	10/15/2009	09102650	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
99405	WL	10/15/2009	09102650	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
99405	WL	10/15/2009	09102650	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
99405	WL	10/15/2009	09102650	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
99405	WL	10/15/2009	09102650	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
99405	WL	10/15/2009	09102650	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
99405	WL	10/15/2009	09102650	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
99405	WL	10/15/2009	09102650	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
99405	WL	10/15/2009	09102650	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
99405	WL	10/15/2009	09102650	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
99405	WL	10/15/2009	09102650	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
99405	WL	10/15/2009	09102650	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
99405	WL	10/15/2009	09102650	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
99405	WL	10/15/2009	09102650	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
99405	WL	10/15/2009	09102650	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
99405	WL	10/15/2009	09102650	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
99405	WL	10/15/2009	09102650	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
99405	WL	10/15/2009	09102650	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
99405	WL	10/15/2009	09102650	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
99405	WL	10/15/2009	09102650	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
99405	WL	10/15/2009	09102650	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
99405	WL	10/15/2009	09102650	156-59-2	cis-1,2-Dichloroethene	N001	0.48	ug/L	J	F	0.15		valid
99405	WL	10/15/2009	09102650	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
99405	WL	10/15/2009	09102650	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
99405	WL	10/15/2009	09102650	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
99405	WL	10/15/2009	09102650	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
99405	WL	10/15/2009	09102650	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.93	mg/L	J	F	0.019		valid
99405	WL	10/15/2009	09102650	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
99405	WL	10/15/2009	09102650	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
99405	WL	10/15/2009	09102650	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
99405	WL	10/15/2009	09102650	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
99405	WL	10/15/2009	09102650	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
99405	WL	10/15/2009	09102650	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
99405	WL	10/15/2009	09102650	79-01-6	Trichloroethene	N001	11	ug/L		F	0.16		valid
99405	WL	10/15/2009	09102650	7440-61-1	Uranium	0001	98	ug/L		F	0.02		valid
99405	WL	10/15/2009	09102650	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
A4 POND	SL	11/23/2009	09112725	AM-241	Americium-241	N001	-0.00388	pCi/L	U	F	0.0158	0.00441	valid
A4 POND	SL	11/23/2009	09112725	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.33	mg/L		F	0.05		valid
A4 POND	SL	11/23/2009	09112725	PU-239,240	Plutonium-239, 240	N001	0.00299	pCi/L	U	F	0.0122	0.00339	valid
A4 POND	SL	11/23/2009	09112725	7440-61-1	Uranium	N001	6.56	ug/L		F	0.05		valid
B206989	WL	11/10/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
B206989	WL	11/10/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
B206989	WL	11/10/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
B206989	WL	11/10/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
B206989	WL	11/10/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
B206989	WL	11/10/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
B206989	WL	11/10/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
B206989	WL	11/10/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
B206989	WL	11/10/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
B206989	WL	11/10/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
B206989	WL	11/10/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	1.2	ug/L		F	0.16		valid
B206989	WL	11/10/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
B206989	WL	11/10/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
B206989	WL	11/10/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
B206989	WL	11/10/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
B206989	WL	11/10/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
B206989	WL	11/10/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
B206989	WL	11/10/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
B206989	WL	11/10/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
B206989	WL	11/10/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
B206989	WL	11/10/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
B206989	WL	11/10/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
B206989	WL	11/10/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
B206989	WL	11/10/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
B206989	WL	11/10/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
B206989	WL	11/10/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
B206989	WL	11/10/2009	09112699	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	17	mg/L	J	F	0.096		valid
B206989	WL	11/10/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
B206989	WL	11/10/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
B206989	WL	11/10/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
B206989	WL	11/10/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
B206989	WL	11/10/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
B206989	WL	11/10/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
B206989	WL	11/10/2009	09112699	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
B206989	WL	11/10/2009	09112699	7440-61-1	Uranium	0001	91	ug/L		F	0.04		valid
B206989	WL	11/10/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
ET EFFLUENT	TS	11/12/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
ET EFFLUENT	TS	11/12/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
ET EFFLUENT	TS	11/12/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
ET EFFLUENT	TS	11/12/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
ET EFFLUENT	TS	11/12/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
ET EFFLUENT	TS	11/12/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
ET EFFLUENT	TS	11/12/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
ET EFFLUENT	TS	11/12/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
ET EFFLUENT	TS	11/12/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
ET EFFLUENT	TS	11/12/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
ET EFFLUENT	TS	11/12/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
ET EFFLUENT	TS	11/12/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
ET EFFLUENT	TS	11/12/2009	09112699	71-43-2	Benzene	N001	2.6	ug/L		F	0.16		valid
ET EFFLUENT	TS	11/12/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
ET EFFLUENT	TS	11/12/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
ET EFFLUENT	TS	11/12/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
ET EFFLUENT	TS	11/12/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
ET EFFLUENT	TS	11/12/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
ET EFFLUENT	TS	11/12/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
ET EFFLUENT	TS	11/12/2009	09112699	67-66-3	Chloroform	N001	0.23	ug/L	J	F	0.16		valid
ET EFFLUENT	TS	11/12/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
ET EFFLUENT	TS	11/12/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.3	ug/L	J	F	0.15		valid
ET EFFLUENT	TS	11/12/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
ET EFFLUENT	TS	11/12/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
ET EFFLUENT	TS	11/12/2009	09112699	75-09-2	Methylene chloride	N001	6.3	ug/L		F	0.32		J
ET EFFLUENT	TS	11/12/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
ET EFFLUENT	TS	11/12/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
ET EFFLUENT	TS	11/12/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
ET EFFLUENT	TS	11/12/2009	09112699	108-88-3	Toluene	N001	0.28	ug/L	J	F	0.17		valid
ET EFFLUENT	TS	11/12/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
ET EFFLUENT	TS	11/12/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
ET EFFLUENT	TS	11/12/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
ET EFFLUENT	TS	11/12/2009	09112699	79-01-6	Trichloroethene	N001	0.35	ug/L	J	F	0.16		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
ET EFFLUENT	TS	11/12/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
ET INFLUENT	TS	11/12/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	2.3	ug/L		F	0.16		valid
ET INFLUENT	TS	11/12/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
ET INFLUENT	TS	11/12/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
ET INFLUENT	TS	11/12/2009	09112699	75-35-4	1,1-Dichloroethene	N001	2.5	ug/L		F	0.14		valid
ET INFLUENT	TS	11/12/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
ET INFLUENT	TS	11/12/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
ET INFLUENT	TS	11/12/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
ET INFLUENT	TS	11/12/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
ET INFLUENT	TS	11/12/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
ET INFLUENT	TS	11/12/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
ET INFLUENT	TS	11/12/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
ET INFLUENT	TS	11/12/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
ET INFLUENT	TS	11/12/2009	09112699	71-43-2	Benzene	N001	0.18	ug/L	J	F	0.16		valid
ET INFLUENT	TS	11/12/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
ET INFLUENT	TS	11/12/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
ET INFLUENT	TS	11/12/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
ET INFLUENT	TS	11/12/2009	09112699	56-23-5	Carbon tetrachloride	N001	110	ug/L		F	13		valid
ET INFLUENT	TS	11/12/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
ET INFLUENT	TS	11/12/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
ET INFLUENT	TS	11/12/2009	09112699	67-66-3	Chloroform	N001	63	ug/L	J	F	11		valid
ET INFLUENT	TS	11/12/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
ET INFLUENT	TS	11/12/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	36	ug/L		F	0.15		valid
ET INFLUENT	TS	11/12/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
ET INFLUENT	TS	11/12/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
ET INFLUENT	TS	11/12/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
ET INFLUENT	TS	11/12/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
ET INFLUENT	TS	11/12/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
ET INFLUENT	TS	11/12/2009	09112699	127-18-4	Tetrachloroethene	N001	320	ug/L		F	13		valid
ET INFLUENT	TS	11/12/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
ET INFLUENT	TS	11/12/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
ET INFLUENT	TS	11/12/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
ET INFLUENT	TS	11/12/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
ET INFLUENT	TS	11/12/2009	09112699	79-01-6	Trichloroethene	N001	1900	ug/L		F	11		valid
ET INFLUENT	TS	11/12/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
GS01	SL	10/7/2009	09112711	AM-241	Americium-241	N001	0.00227	pCi/L	U	F	0.0182	0.00612	valid
GS01	SL	10/7/2009	09112711	PU-239,240	Plutonium-239, 240	N001	0.00178	pCi/L	U	F	0.0109	0.00247	valid
GS01	SL	10/7/2009	09112711	7440-61-1	Uranium	N001	3.21	ug/L		F	0.05		valid
GS01	SL	11/12/2009	09122742	AM-241	Americium-241	N001	-0.00263	pCi/L	U	F	0.014	0.00863	valid
GS01	SL	11/12/2009	09122742	PU-239,240	Plutonium-239, 240	N001	0.000851	pCi/L	U	F	0.0104	0.00167	valid
GS01	SL	11/12/2009	09122742	7440-61-1	Uranium	N001	3.71	ug/L		F	0.05		valid
GS01	SL	11/24/2009	10012800	AM-241	Americium-241	N001	0.000473	pCi/L	U	F	0.0126	0.00207	valid
GS01	SL	11/24/2009	10012800	PU-239,240	Plutonium-239, 240	N001	0.00435	pCi/L	U	F	0.012	0.00428	valid
GS01	SL	11/24/2009	10012800	7440-61-1	Uranium	N001	4.38	ug/L		F	0.05		valid
GS01	SL	12/22/2009	10012825	AM-241	Americium-241	N001	-0.00791	pCi/L	U	F	0.0126	0.00543	valid
GS01	SL	12/22/2009	10012825	PU-239,240	Plutonium-239, 240	N001	0.0109	pCi/L	U	F	0.03	0.0107	valid
GS01	SL	12/22/2009	10012825	7440-61-1	Uranium	N001	4.55	ug/L		F	0.05		valid
GS03	SL	12/12/2009	09122767	AM-241	Americium-241	N001	0.00679	pCi/L	U	F	0.0197	0.00822	valid
GS03	SL	12/12/2009	09122767	PU-239,240	Plutonium-239, 240	N001	0.00306	pCi/L	U	F	0.0188	0.00736	valid
GS03	SL	12/12/2009	09122767	7440-61-1	Uranium	N001	8.05	ug/L		F	0.05		valid
GS03	SL	12/14/2009	09122781	AM-241	Americium-241	N001	0.0000791	pCi/L	U	F	0.0205	0.0048	valid
GS03	SL	12/14/2009	09122768	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	0.27	mg/L	J	F	0.019		valid
GS03	SL	12/14/2009	09122781	PU-239,240	Plutonium-239, 240	N001	0	pCi/L	U	F	0.0183	0.00651	valid
GS03	SL	12/14/2009	09122781	7440-61-1	Uranium	N001	7.34	ug/L		F	0.05		valid
GS03	SL	12/15/2009	09122768	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.16	mg/L	J	F	0.019		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
GS03	SL	12/16/2009	09122781	AM-241	Americium-241	N001	0.000835	pCi/L	U	F	0.0148	0.00242	valid
GS03	SL	12/16/2009	09122781	PU-239,240	Plutonium-239, 240	N001	-0.00195	pCi/L	U	F	0.0216	0.0101	valid
GS03	SL	12/16/2009	09122781	7440-61-1	Uranium	N001	6.97	ug/L		F	0.05		valid
GS03	SL	12/17/2009	09122778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.12	mg/L		F	0.019		valid
GS03	SL	12/18/2009	09122781	AM-241	Americium-241	N001	0.00111	pCi/L	U	F	0.0164	0.0134	valid
GS03	SL	12/18/2009	09122781	PU-239,240	Plutonium-239, 240	N001	0.00512	pCi/L	U	F	0.0189	0.0075	valid
GS03	SL	12/18/2009	09122781	7440-61-1	Uranium	N001	7.22	ug/L		F	0.05		valid
GS03	SL	12/19/2009	09122778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.1	mg/L		F	0.019		valid
GS03	SL	12/19/2009	09122778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N002	0.079	mg/L		F	0.019		valid
GS03	SL	12/22/2009	10012825	AM-241	Americium-241	N001	0.000595	pCi/L	U	F	0.0134	0.00348	valid
GS03	SL	12/22/2009	10012825	PU-239,240	Plutonium-239, 240	N001	-2.52E-10	pCi/L	U	F	0.0233	0.00585	valid
GS03	SL	12/22/2009	10012825	7440-61-1	Uranium	N001	8.28	ug/L		F	0.05		valid
GS05	SL	9/22/2009	09122742	7440-38-2	Arsenic	N001	5	ug/L	U	F	5		valid
GS05	SL	9/22/2009	09122742	7440-41-7	Beryllium	N001	1	ug/L	U	F	1		valid
GS05	SL	9/22/2009	09122742	7440-42-8	Boron	N001	15.2	ug/L	B	F	15		valid
GS05	SL	9/22/2009	09122742	7440-43-9	Cadmium	0001	1	ug/L	U	F	1		valid
GS05	SL	9/22/2009	09122742	7440-47-3	Chromium	N001	1	ug/L	U	F	1		valid
GS05	SL	9/22/2009	09122742	7440-50-8	Copper	0001	3	ug/L	U	F	3		valid
GS05	SL	9/22/2009	09122742	7439-92-1	Lead	0001	3.3	ug/L	U	F	3.3		valid
GS05	SL	9/22/2009	09122742	7439-97-6	Mercury	N001	0.066	ug/L	U	F	0.066		valid
GS05	SL	9/22/2009	09122742	7440-02-0	Nickel	0001	1.5	ug/L	U	F	1.5		valid
GS05	SL	9/22/2009	09122742	7782-49-2	Selenium	N001	5.48	ug/L	B	F	5		valid
GS05	SL	9/22/2009	09122742	7440-22-4	Silver	0001	1	ug/L	U	F	1		valid
GS05	SL	9/22/2009	09122742	7440-61-1	Uranium	N001	2.87	ug/L		F	0.05		valid
GS05	SL	9/22/2009	09122742	7440-66-6	Zinc	0001	3.3	ug/L	U	F	3.3		valid
GS05	SL	10/20/2009	09102658	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
GS05	SL	10/20/2009	09102658	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
GS05	SL	10/20/2009	09102658	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
GS05	SL	10/20/2009	09102658	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
GS05	SL	10/20/2009	09102658	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
GS05	SL	10/20/2009	09102658	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
GS05	SL	10/20/2009	09102658	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
GS05	SL	10/20/2009	09102658	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
GS05	SL	10/20/2009	09102658	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
GS05	SL	10/20/2009	09102658	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
GS05	SL	10/20/2009	09102658	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
GS05	SL	10/20/2009	09102658	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
GS05	SL	10/20/2009	09102658	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
GS05	SL	10/20/2009	09102658	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
GS05	SL	10/20/2009	09102658	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
GS05	SL	10/20/2009	09102658	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
GS05	SL	10/20/2009	09102658	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
GS05	SL	10/20/2009	09102658	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
GS05	SL	10/20/2009	09102658	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
GS05	SL	10/20/2009	09102658	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
GS05	SL	10/20/2009	09102658	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
GS05	SL	10/20/2009	09102658	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
GS05	SL	10/20/2009	09102658	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
GS05	SL	10/20/2009	09102658	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
GS05	SL	10/20/2009	09102658	7439-97-6	Mercury	N001	0.027	ug/L	U	F	0.027		valid
GS05	SL	10/20/2009	09102658	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
GS05	SL	10/20/2009	09102658	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
GS05	SL	10/20/2009	09102658	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
GS05	SL	10/20/2009	09102658	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
GS05	SL	10/20/2009	09102658	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
GS05	SL	10/20/2009	09102658	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
GS05	SL	10/20/2009	09102658	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
GS05	SL	10/20/2009	09102658	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
GS05	SL	10/20/2009	09102658	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
GS05	SL	10/20/2009	09102658	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
GS05	SL	11/17/2009	10012825	7440-38-2	Arsenic	N001	5	ug/L	U	F	5		valid
GS05	SL	11/17/2009	10012825	7440-41-7	Beryllium	N001	1	ug/L	U	F	1		valid
GS05	SL	11/17/2009	10012825	7440-42-8	Boron	N001	15	ug/L	U	F	15		valid
GS05	SL	11/17/2009	10012825	7440-43-9	Cadmium	0001	1	ug/L	U	F	1		valid
GS05	SL	11/17/2009	10012825	7440-47-3	Chromium	N001	1	ug/L	U	F	1		valid
GS05	SL	11/17/2009	10012825	7440-50-8	Copper	0001	3	ug/L	U	F	3		valid
GS05	SL	11/17/2009	10012825	7439-92-1	Lead	0001	3.3	ug/L	U	F	3.3		valid
GS05	SL	11/17/2009	10012825	7439-97-6	Mercury	N001	0.066	ug/L	U	F	0.066		valid
GS05	SL	11/17/2009	10012825	7440-02-0	Nickel	0001	1.5	ug/L	U	F	1.5		valid
GS05	SL	11/17/2009	10012825	7782-49-2	Selenium	N001	5.32	ug/L	B	F	5		U
GS05	SL	11/17/2009	10012825	7440-22-4	Silver	0001	1	ug/L	U	F	1		valid
GS05	SL	11/17/2009	10012825	7440-61-1	Uranium	N001	0.256	ug/L		F	0.05		valid
GS05	SL	11/17/2009	10012825	7440-66-6	Zinc	0001	3.3	ug/L	U	F	3.3		valid
GS10	SL	10/19/2009	09102656	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
GS10	SL	10/19/2009	09102656	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
GS10	SL	10/19/2009	09102656	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
GS10	SL	10/19/2009	09102656	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
GS10	SL	10/19/2009	09102656	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
GS10	SL	10/19/2009	09102656	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
GS10	SL	10/19/2009	09102656	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
GS10	SL	10/19/2009	09102656	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
GS10	SL	10/19/2009	09102656	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
GS10	SL	10/19/2009	09102656	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
GS10	SL	10/19/2009	09102656	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
GS10	SL	10/19/2009	09102656	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
GS10	SL	10/19/2009	09102656	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
GS10	SL	10/19/2009	09102656	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
GS10	SL	10/19/2009	09102656	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
GS10	SL	10/19/2009	09102656	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
GS10	SL	10/19/2009	09102656	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
GS10	SL	10/19/2009	09102656	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
GS10	SL	10/19/2009	09102656	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
GS10	SL	10/19/2009	09102656	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
GS10	SL	10/19/2009	09102656	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
GS10	SL	10/19/2009	09102656	156-59-2	cis-1,2-Dichloroethene	N001	0.3	ug/L	J	F	0.15		valid
GS10	SL	10/19/2009	09102656	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
GS10	SL	10/19/2009	09102656	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
GS10	SL	10/19/2009	09102656	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
GS10	SL	10/19/2009	09102656	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
GS10	SL	10/19/2009	09102656	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
GS10	SL	10/19/2009	09102656	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
GS10	SL	10/19/2009	09102656	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
GS10	SL	10/19/2009	09102656	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
GS10	SL	10/19/2009	09102656	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
GS10	SL	10/19/2009	09102656	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
GS10	SL	10/19/2009	09102656	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
GS10	SL	10/19/2009	09102656	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
GS10	SL	10/22/2009	09112686	AM-241	Americium-241	N001	0.000912	pCi/L	U	F	0.0186	0.00646	valid
GS10	SL	10/22/2009	09112686	7440-41-7	Beryllium	N001	1	ug/L	U	F	1		valid
GS10	SL	10/22/2009	09112686	7440-43-9	Cadmium	0001	0.11	ug/L	U	F	0.11		valid

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GS10	SL	10/22/2009	09112686	7440-47-3	Chromium	N001	1	ug/L	U	F	1		valid
GS10	SL	10/22/2009	09112686	HARDNESS	Hardness	N001	576	mg/L		F	2.5		valid
GS10	SL	10/22/2009	09112686	PU-239,240	Plutonium-239, 240	N001	-0.00123	pCi/L	U	F	0.0157	0.00725	valid
GS10	SL	10/22/2009	09112686	7440-22-4	Silver	0001	0.2	ug/L	U	F	0.2		valid
GS10	SL	10/22/2009	09112686	7440-61-1	Uranium	N001	17.6	ug/L		F	0.05		valid
GS10	SL	10/31/2009	09122781	AM-241	Americium-241	N001	-0.0029	pCi/L	U	F	0.0152	0.00776	valid
GS10	SL	10/31/2009	09122781	AM-241	Americium-241	N002	0.00134	pCi/L	U	D	0.0178	0.012	valid
GS10	SL	10/31/2009	09122781	7440-41-7	Beryllium	N001	1	ug/L	U	F	1		valid
GS10	SL	10/31/2009	09122781	7440-41-7	Beryllium	N002	1	ug/L	U	D	1		valid
GS10	SL	10/31/2009	09122781	7440-43-9	Cadmium	0001	0.11	ug/L	U	F	0.11		valid
GS10	SL	10/31/2009	09122781	7440-43-9	Cadmium	0002	0.11	ug/L	U	D	0.11		valid
GS10	SL	10/31/2009	09122781	7440-47-3	Chromium	N001	1.9	ug/L	B	F	1		valid
GS10	SL	10/31/2009	09122781	7440-47-3	Chromium	N002	1.47	ug/L	B	D	1		valid
GS10	SL	10/31/2009	09122781	HARDNESS	Hardness	N001	527	mg/L		F	2		valid
GS10	SL	10/31/2009	09122781	HARDNESS	Hardness	N002	548	mg/L		D	2		valid
GS10	SL	10/31/2009	09122781	PU-239,240	Plutonium-239, 240	N001	-0.00308	pCi/L	U	F	0.017	0.00523	valid
GS10	SL	10/31/2009	09122781	PU-239,240	Plutonium-239, 240	N002	0.00389	pCi/L	U	D	0.0143	0.00674	valid
GS10	SL	10/31/2009	09122781	7440-22-4	Silver	0001	0.2	ug/L	U	F	0.2		valid
GS10	SL	10/31/2009	09122781	7440-22-4	Silver	0002	0.2	ug/L	U	D	0.2		valid
GS10	SL	10/31/2009	09122781	7440-61-1	Uranium	N001	26.5	ug/L		F	0.05		J
GS10	SL	10/31/2009	09122781	7440-61-1	Uranium	N002	16.1	ug/L		D	0.05		J
GS10	SL	12/22/2009	10012800	AM-241	Americium-241	N001	-0.00163	pCi/L	U	F	0.014	0.00397	valid
GS10	SL	12/22/2009	10012800	7440-41-7	Beryllium	N001	1	ug/L	U	F	1		valid
GS10	SL	12/22/2009	10012800	7440-43-9	Cadmium	0001	0.11	ug/L	U	F	0.11		valid
GS10	SL	12/22/2009	10012800	7440-47-3	Chromium	N001	1	ug/L	U	F	1		valid
GS10	SL	12/22/2009	10012800	HARDNESS	Hardness	N001	749	mg/L		F	3		valid
GS10	SL	12/22/2009	10012800	PU-239,240	Plutonium-239, 240	N001	0.00739	pCi/L	U	F	0.0117	0.00552	valid
GS10	SL	12/22/2009	10012800	7440-22-4	Silver	0001	0.2	ug/L	U	F	0.2		valid
GS10	SL	12/22/2009	10012800	7440-61-1	Uranium	N001	27.3	ug/L		F	0.05		valid
GS11	SL	12/12/2009	09122767	AM-241	Americium-241	N001	0.0269	pCi/L		F	0.019	0.0129	J
GS11	SL	12/12/2009	09122767	PU-239,240	Plutonium-239, 240	N001	0.00226	pCi/L	U	F	0.0139	0.00544	valid
GS11	SL	12/12/2009	09122767	7440-61-1	Uranium	N001	7.22	ug/L		F	0.05		valid
GS11	SL	12/13/2009	09122768	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.12	mg/L	J	F	0.019		valid
GS11	SL	12/14/2009	09122781	AM-241	Americium-241	N001	0.00333	pCi/L	U	F	0.0149	0.00527	valid
GS11	SL	12/14/2009	09122781	PU-239,240	Plutonium-239, 240	N001	0	pCi/L	U	F	0.0222	0.00394	valid
GS11	SL	12/14/2009	09122781	7440-61-1	Uranium	N001	6.36	ug/L		F	0.05		valid
GS11	SL	12/15/2009	09122768	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.12	mg/L	J	F	0.019		valid
GS11	SL	12/16/2009	09122781	AM-241	Americium-241	N001	-0.000403	pCi/L	U	F	0.0148	0.00461	valid
GS11	SL	12/16/2009	09122781	PU-239,240	Plutonium-239, 240	N001	0	pCi/L	U	F	0.0159	0.00398	valid
GS11	SL	12/16/2009	09122781	7440-61-1	Uranium	N001	6.41	ug/L		F	0.05		valid
GS11	SL	12/17/2009	09122778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.074	mg/L		F	0.019		valid
GS11	SL	12/18/2009	09122781	AM-241	Americium-241	N001	0.000892	pCi/L	U	F	0.0151	0.00248	valid
GS11	SL	12/18/2009	09122781	PU-239,240	Plutonium-239, 240	N001	0	pCi/L	U	F	0.0166	0.0072	valid
GS11	SL	12/18/2009	09122781	7440-61-1	Uranium	N001	6.69	ug/L		F	0.05		valid
GS11	SL	12/19/2009	09122778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.066	mg/L		F	0.019		valid
GS11	SL	12/21/2009	09122778	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	0.052	mg/L		F	0.019		valid
GS13	SL	10/27/2009	09112686	7440-61-1	Uranium	N001	20.2	ug/L		F	0.05		valid
GS13	SL	10/31/2009	09112711	7440-61-1	Uranium	N001	16.4	ug/L		F	0.05		valid
GS13	SL	11/12/2009	09112699	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	23	mg/L	J	F	0.096		valid
GS13	SL	11/12/2009	09122742	7440-61-1	Uranium	N002	16.8	ug/L		F	0.05		valid
GS13	SL	12/1/2009	09122781	7440-61-1	Uranium	N001	25.7	ug/L		F	0.05		valid
GS13	SL	12/22/2009	10012825	7440-61-1	Uranium	N001	13.7	ug/L		F	0.05		valid
GS59	SL	9/22/2009	09122742	7440-38-2	Arsenic	N001	5	ug/L	U	F	5		valid
GS59	SL	9/22/2009	09122742	7440-41-7	Beryllium	N001	1	ug/L	U	F	1		valid
GS59	SL	9/22/2009	09122742	7440-42-8	Boron	N001	15	ug/L	U	F	15		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
GS59	SL	9/22/2009	09122742	7440-43-9	Cadmium	0001	1	ug/L	U	F	1		valid
GS59	SL	9/22/2009	09122742	7440-47-3	Chromium	N001	1	ug/L	U	F	1		valid
GS59	SL	9/22/2009	09122742	7440-50-8	Copper	0001	3.09	ug/L	B	F	3		valid
GS59	SL	9/22/2009	09122742	7439-92-1	Lead	0001	3.3	ug/L	U	F	3.3		valid
GS59	SL	9/22/2009	09122742	7439-97-6	Mercury	N001	0.066	ug/L	U	F	0.066		valid
GS59	SL	9/22/2009	09122742	7440-02-0	Nickel	0001	1.5	ug/L	U	F	1.5		valid
GS59	SL	9/22/2009	09122742	7782-49-2	Selenium	N001	5	ug/L	U	F	5		valid
GS59	SL	9/22/2009	09122742	7440-22-4	Silver	0001	1	ug/L	U	F	1		valid
GS59	SL	9/22/2009	09122742	7440-61-1	Uranium	N001	0.133	ug/L		F	0.05		U
GS59	SL	9/22/2009	09122742	7440-66-6	Zinc	0001	4.13	ug/L	B	F	3.3		valid
GS59	SL	10/20/2009	09102658	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
GS59	SL	10/20/2009	09102658	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
GS59	SL	10/20/2009	09102658	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
GS59	SL	10/20/2009	09102658	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
GS59	SL	10/20/2009	09102658	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
GS59	SL	10/20/2009	09102658	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
GS59	SL	10/20/2009	09102658	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
GS59	SL	10/20/2009	09102658	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
GS59	SL	10/20/2009	09102658	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
GS59	SL	10/20/2009	09102658	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
GS59	SL	10/20/2009	09102658	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
GS59	SL	10/20/2009	09102658	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
GS59	SL	10/20/2009	09102658	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
GS59	SL	10/20/2009	09102658	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
GS59	SL	10/20/2009	09102658	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
GS59	SL	10/20/2009	09102658	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
GS59	SL	10/20/2009	09102658	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
GS59	SL	10/20/2009	09102658	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
GS59	SL	10/20/2009	09102658	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
GS59	SL	10/20/2009	09102658	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
GS59	SL	10/20/2009	09102658	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
GS59	SL	10/20/2009	09102658	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
GS59	SL	10/20/2009	09102658	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
GS59	SL	10/20/2009	09102658	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
GS59	SL	10/20/2009	09102658	7439-97-6	Mercury	N001	0.027	ug/L	U	F	0.027		valid
GS59	SL	10/20/2009	09102658	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
GS59	SL	10/20/2009	09102658	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
GS59	SL	10/20/2009	09102658	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
GS59	SL	10/20/2009	09102658	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
GS59	SL	10/20/2009	09102658	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
GS59	SL	10/20/2009	09102658	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
GS59	SL	10/20/2009	09102658	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
GS59	SL	10/20/2009	09102658	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
GS59	SL	10/20/2009	09102658	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
GS59	SL	10/20/2009	09102658	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
GS59	SL	11/17/2009	10012825	7440-38-2	Arsenic	N001	5	ug/L	U	F	5		valid
GS59	SL	11/17/2009	10012825	7440-41-7	Beryllium	N001	1	ug/L	U	F	1		valid
GS59	SL	11/17/2009	10012825	7440-42-8	Boron	N001	15	ug/L	U	F	15		valid
GS59	SL	11/17/2009	10012825	7440-43-9	Cadmium	0001	1	ug/L	U	F	1		valid
GS59	SL	11/17/2009	10012825	7440-47-3	Chromium	N001	1	ug/L	U	F	1		valid
GS59	SL	11/17/2009	10012825	7440-50-8	Copper	0001	3	ug/L	U	F	3		valid
GS59	SL	11/17/2009	10012825	7439-92-1	Lead	0001	3.3	ug/L	U	F	3.3		valid
GS59	SL	11/17/2009	10012825	7439-97-6	Mercury	N001	0.066	ug/L	U	F	0.066		valid
GS59	SL	11/17/2009	10012825	7440-02-0	Nickel	0001	1.5	ug/L	U	F	1.5		valid
GS59	SL	11/17/2009	10012825	7782-49-2	Selenium	N001	6.48	ug/L	B	F	5		U

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
GS59	SL	11/17/2009	10012825	7440-22-4	Silver	0001	1	ug/L	U	F	1		valid
GS59	SL	11/17/2009	10012825	7440-61-1	Uranium	N001	1	ug/L		F	0.05		valid
GS59	SL	11/17/2009	10012825	7440-66-6	Zinc	0001	3.3	ug/L	U	F	3.3		valid
MOUND R1-0	TS	10/26/2009	09102668	71-55-6	1,1,1-Trichloroethane	N001	110	ug/L		F	0.8		valid
MOUND R1-0	TS	10/26/2009	09102668	79-34-5	1,1,2,2-Tetrachloroethane	N001	1	ug/L	U	F	1		valid
MOUND R1-0	TS	10/26/2009	09102668	79-00-5	1,1,2-Trichloroethane	N001	1.6	ug/L	U	F	1.6		valid
MOUND R1-0	TS	10/26/2009	09102668	75-35-4	1,1-Dichloroethene	N001	36	ug/L		F	0.7		valid
MOUND R1-0	TS	10/26/2009	09102668	120-82-1	1,2,4-Trichlorobenzene	N001	1.6	ug/L	U	F	1.6		valid
MOUND R1-0	TS	10/26/2009	09102668	96-12-8	1,2-Dibromo-3-chloropropane	N001	4	ug/L	U	F	4		valid
MOUND R1-0	TS	10/26/2009	09102668	106-93-4	1,2-Dibromoethane	N001	0.9	ug/L	U	F	0.9		valid
MOUND R1-0	TS	10/26/2009	09102668	95-50-1	1,2-Dichlorobenzene	N001	0.65	ug/L	U	F	0.65		valid
MOUND R1-0	TS	10/26/2009	09102668	107-06-2	1,2-Dichloroethane	N001	1.2	ug/L	J	F	0.65		valid
MOUND R1-0	TS	10/26/2009	09102668	78-87-5	1,2-Dichloropropane	N001	0.65	ug/L	U	F	0.65		valid
MOUND R1-0	TS	10/26/2009	09102668	541-73-1	1,3-Dichlorobenzene	N001	0.8	ug/L	U	F	0.8		valid
MOUND R1-0	TS	10/26/2009	09102668	106-46-7	1,4-Dichlorobenzene	N001	0.8	ug/L	U	F	0.8		valid
MOUND R1-0	TS	10/26/2009	09102668	71-43-2	Benzene	N001	0.8	ug/L	U	F	0.8		valid
MOUND R1-0	TS	10/26/2009	09102668	75-27-4	Bromodichloromethane	N001	0.85	ug/L	U	F	0.85		valid
MOUND R1-0	TS	10/26/2009	09102668	75-25-2	Bromoform	N001	0.95	ug/L	U	F	0.95		valid
MOUND R1-0	TS	10/26/2009	09102668	74-83-9	Bromomethane	N001	1	ug/L	U	F	1		valid
MOUND R1-0	TS	10/26/2009	09102668	56-23-5	Carbon tetrachloride	N001	27	ug/L		F	0.95		valid
MOUND R1-0	TS	10/26/2009	09102668	108-90-7	Chlorobenzene	N001	0.85	ug/L	U	F	0.85		valid
MOUND R1-0	TS	10/26/2009	09102668	124-48-1	Chlorodibromomethane	N001	0.85	ug/L	U	F	0.85		valid
MOUND R1-0	TS	10/26/2009	09102668	67-66-3	Chloroform	N001	19	ug/L		F	0.8		valid
MOUND R1-0	TS	10/26/2009	09102668	74-87-3	Chloromethane	N001	1.5	ug/L	U	F	1.5		valid
MOUND R1-0	TS	10/26/2009	09102668	156-59-2	cis-1,2-Dichloroethene	N001	2600	ug/L		F	7.5		valid
MOUND R1-0	TS	10/26/2009	09102668	100-41-4	Ethylbenzene	N001	0.8	ug/L	U	F	0.8		valid
MOUND R1-0	TS	10/26/2009	09102668	87-68-3	Hexachlorobutadiene	N001	0.6	ug/L	U	F	0.6		valid
MOUND R1-0	TS	10/26/2009	09102668	75-09-2	Methylene chloride	N001	1.6	ug/L	U	F	1.6		valid
MOUND R1-0	TS	10/26/2009	09102668	91-20-3	Naphthalene	N001	1.1	ug/L	U	F	1.1		valid
MOUND R1-0	TS	10/26/2009	09102668	100-42-5	Styrene	N001	0.85	ug/L	U	F	0.85		valid
MOUND R1-0	TS	10/26/2009	09102668	127-18-4	Tetrachloroethene	N001	53	ug/L		F	1		valid
MOUND R1-0	TS	10/26/2009	09102668	108-88-3	Toluene	N001	0.85	ug/L	U	F	0.85		valid
MOUND R1-0	TS	10/26/2009	09102668	1330-20-7	Total Xylenes	N001	0.95	ug/L	U	F	0.95		valid
MOUND R1-0	TS	10/26/2009	09102668	156-60-5	trans-1,2-Dichloroethene	N001	3.8	ug/L	J	F	0.75		valid
MOUND R1-0	TS	10/26/2009	09102668	10061-02-6	trans-1,3-dichloropropene	N001	0.95	ug/L	U	F	0.95		valid
MOUND R1-0	TS	10/26/2009	09102668	79-01-6	Trichloroethene	N001	77	ug/L		F	0.8		valid
MOUND R1-0	TS	10/26/2009	09102668	75-01-4	Vinyl chloride	N001	130	ug/L		F	2		J
MOUND R2-E	TS	10/26/2009	09102668	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
MOUND R2-E	TS	10/26/2009	09102668	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
MOUND R2-E	TS	10/26/2009	09102668	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
MOUND R2-E	TS	10/26/2009	09102668	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
MOUND R2-E	TS	10/26/2009	09102668	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
MOUND R2-E	TS	10/26/2009	09102668	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
MOUND R2-E	TS	10/26/2009	09102668	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
MOUND R2-E	TS	10/26/2009	09102668	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
MOUND R2-E	TS	10/26/2009	09102668	107-06-2	1,2-Dichloroethane	N001	1.1	ug/L		F	0.13		valid
MOUND R2-E	TS	10/26/2009	09102668	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
MOUND R2-E	TS	10/26/2009	09102668	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
MOUND R2-E	TS	10/26/2009	09102668	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
MOUND R2-E	TS	10/26/2009	09102668	71-43-2	Benzene	N001	0.87	ug/L	J	F	0.16		valid
MOUND R2-E	TS	10/26/2009	09102668	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
MOUND R2-E	TS	10/26/2009	09102668	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
MOUND R2-E	TS	10/26/2009	09102668	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
MOUND R2-E	TS	10/26/2009	09102668	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
MOUND R2-E	TS	10/26/2009	09102668	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
MOUND R2-E	TS	10/26/2009	09102668	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
MOUND R2-E	TS	10/26/2009	09102668	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
MOUND R2-E	TS	10/26/2009	09102668	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
MOUND R2-E	TS	10/26/2009	09102668	156-59-2	cis-1,2-Dichloroethene	N001	1.8	ug/L		F	0.15		valid
MOUND R2-E	TS	10/26/2009	09102668	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
MOUND R2-E	TS	10/26/2009	09102668	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
MOUND R2-E	TS	10/26/2009	09102668	75-09-2	Methylene chloride	N001	0.46	ug/L	J	F	0.32		valid
MOUND R2-E	TS	10/26/2009	09102668	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
MOUND R2-E	TS	10/26/2009	09102668	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
MOUND R2-E	TS	10/26/2009	09102668	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
MOUND R2-E	TS	10/26/2009	09102668	108-88-3	Toluene	N001	0.19	ug/L	J	F	0.17		valid
MOUND R2-E	TS	10/26/2009	09102668	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
MOUND R2-E	TS	10/26/2009	09102668	156-60-5	trans-1,2-Dichloroethene	N001	0.19	ug/L	J	F	0.15		valid
MOUND R2-E	TS	10/26/2009	09102668	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
MOUND R2-E	TS	10/26/2009	09102668	79-01-6	Trichloroethene	N001	0.58	ug/L	J	F	0.16		valid
MOUND R2-E	TS	10/26/2009	09102668	75-01-4	Vinyl chloride	N001	1.5	ug/L		F	0.4		J
P210089	WL	10/14/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
P210089	WL	10/14/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
P210089	WL	10/14/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
P210089	WL	10/14/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
P210089	WL	10/14/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
P210089	WL	10/14/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
P210089	WL	10/14/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
P210089	WL	10/14/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
P210089	WL	10/14/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
P210089	WL	10/14/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
P210089	WL	10/14/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
P210089	WL	10/14/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
P210089	WL	10/14/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
P210089	WL	10/14/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
P210089	WL	10/14/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
P210089	WL	10/14/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
P210089	WL	10/14/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
P210089	WL	10/14/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
P210089	WL	10/14/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
P210089	WL	10/14/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
P210089	WL	10/14/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
P210089	WL	10/14/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
P210089	WL	10/14/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
P210089	WL	10/14/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
P210089	WL	10/14/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
P210089	WL	10/14/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
P210089	WL	10/14/2009	09102645	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	320	mg/L	J	F	1.9		valid
P210089	WL	10/14/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
P210089	WL	10/14/2009	09102645	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
P210089	WL	10/14/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
P210089	WL	10/14/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
P210089	WL	10/14/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
P210089	WL	10/14/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
P210089	WL	10/14/2009	09102645	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
P210089	WL	10/14/2009	09102645	7440-61-1	Uranium	0001	47	ug/L		F	0.02		valid
P210089	WL	10/14/2009	09102645	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
P416589	WL	11/11/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
P416589	WL	11/11/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
P416589	WL	11/11/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
P416589	WL	11/11/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
P416589	WL	11/11/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.28	ug/L	U	F	0.28		valid
P416589	WL	11/11/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
P416589	WL	11/11/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
P416589	WL	11/11/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		J
P416589	WL	11/11/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
P416589	WL	11/11/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
P416589	WL	11/11/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
P416589	WL	11/11/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
P416589	WL	11/11/2009	09112699	105-67-9	2, 4-Dimethylphenol	N001	0.58	ug/L	U	F	0.58		valid
P416589	WL	11/11/2009	09112699	95-95-4	2,4,5-Trichlorophenol	N001	0.45	ug/L	U	F	0.45		valid
P416589	WL	11/11/2009	09112699	88-06-2	2,4,6-Trichlorophenol	N001	0.29	ug/L	U	F	0.29		valid
P416589	WL	11/11/2009	09112699	120-83-2	2,4-Dichlorophenol	N001	0.64	ug/L	U	F	0.64		valid
P416589	WL	11/11/2009	09112699	51-28-5	2,4-Dinitrophenol	N001	10	ug/L	U	F	10		valid
P416589	WL	11/11/2009	09112699	121-14-2	2,4-Dinitrotoluene	N001	1.7	ug/L	U	F	1.7		valid
P416589	WL	11/11/2009	09112699	606-20-2	2,6-Dinitrotoluene	N001	1.9	ug/L	U	F	1.9		valid
P416589	WL	11/11/2009	09112699	91-58-7	2-Chloronaphthalene	N001	0.26	ug/L	U	F	0.26		valid
P416589	WL	11/11/2009	09112699	95-57-8	2-Chlorophenol	N001	2	ug/L	U	F	2		valid
P416589	WL	11/11/2009	09112699	91-94-1	3,3'-Dichlorobenzidine	N001	2	ug/L	U	F	2		valid
P416589	WL	11/11/2009	09112699	534-52-1	4,6-Dinitro-2-methyl phenol	N001	4	ug/L	U	F	4		valid
P416589	WL	11/11/2009	09112699	59-50-7	4-Chloro-3-methylphenol	N001	2.4	ug/L	U	F	2.4		valid
P416589	WL	11/11/2009	09112699	100-02-7	4-Nitrophenol	N001	1.2	ug/L	U	F	1.2		valid
P416589	WL	11/11/2009	09112699	83-32-9	Acenaphthene	N001	0.28	ug/L	U	F	0.28		valid
P416589	WL	11/11/2009	09112699	120-12-7	Anthracene	N001	0.42	ug/L	U	F	0.42		valid
P416589	WL	11/11/2009	09112699	7440-38-2	Arsenic	0001	4.4	ug/L	U	F	4.4		valid
P416589	WL	11/11/2009	09112699	56-55-3	Benz(a)anthracene	N001	0.35	ug/L	U	F	0.35		valid
P416589	WL	11/11/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
P416589	WL	11/11/2009	09112699	50-32-8	Benzo(a)pyrene	N001	0.31	ug/L	U	F	0.31		valid
P416589	WL	11/11/2009	09112699	205-99-2	Benzo(b)fluoranthene	N001	0.53	ug/L	U	F	0.53		valid
P416589	WL	11/11/2009	09112699	191-24-2	Benzo(g,h,i)Perylene	N001	0.5	ug/L	U	F	0.5		valid
P416589	WL	11/11/2009	09112699	207-08-9	Benzo(k)fluoranthene	N001	0.46	ug/L	U	F	0.46		valid
P416589	WL	11/11/2009	09112699	7440-41-7	Beryllium	0001	0.47	ug/L	U	F	0.47		valid
P416589	WL	11/11/2009	09112699	111-44-4	Bis(2-chloroethyl) ether	N001	0.41	ug/L	U	F	0.41		valid
P416589	WL	11/11/2009	09112699	108-60-1	Bis(2-chloroisopropyl) ether	N001	0.28	ug/L	U	F	0.28		valid
P416589	WL	11/11/2009	09112699	117-81-7	Bis(2-ethylhexyl) phthalate	N001	2.5	ug/L	J B	F	0.56		U
P416589	WL	11/11/2009	09112699	7440-42-8	Boron	0001	4.1	ug/L	B	F	1.6		valid
P416589	WL	11/11/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
P416589	WL	11/11/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
P416589	WL	11/11/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
P416589	WL	11/11/2009	09112699	85-68-7	Butyl benzyl phthalate	N001	1	ug/L	U	F	1		valid
P416589	WL	11/11/2009	09112699	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
P416589	WL	11/11/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
P416589	WL	11/11/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
P416589	WL	11/11/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
P416589	WL	11/11/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
P416589	WL	11/11/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
P416589	WL	11/11/2009	09112699	7440-47-3	Chromium	0001	0.66	ug/L	U	F	0.66		valid
P416589	WL	11/11/2009	09112699	218-01-9	Chrysene	N001	0.54	ug/L	U	F	0.54		valid
P416589	WL	11/11/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
P416589	WL	11/11/2009	09112699	7440-50-8	Copper	0001	1.4	ug/L	U	F	1.4		valid
P416589	WL	11/11/2009	09112699	53-70-3	Dibenz(a,h)anthracene	N001	0.51	ug/L	U	F	0.51		valid
P416589	WL	11/11/2009	09112699	84-66-2	Diethyl phthalate	N001	0.38	ug/L	U	F	0.38		valid
P416589	WL	11/11/2009	09112699	131-11-3	Dimethyl phthalate	N001	0.21	ug/L	U	F	0.21		valid
P416589	WL	11/11/2009	09112699	84-74-2	Di-n-butyl phthalate	N001	1.2	ug/L	U	F	1.2		valid
P416589	WL	11/11/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
P416589	WL	11/11/2009	09112699	206-44-0	Fluoranthene	N001	0.2	ug/L	U	F	0.2		valid
P416589	WL	11/11/2009	09112699	86-73-7	Fluorene	N001	0.31	ug/L	U	F	0.31		valid
P416589	WL	11/11/2009	09112699	118-74-1	Hexachlorobenzene	N001	0.66	ug/L	U	F	0.66		valid
P416589	WL	11/11/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
P416589	WL	11/11/2009	09112699	77-47-4	Hexachlorocyclopentadiene	N001	1.5	ug/L	U	F	1.5		valid
P416589	WL	11/11/2009	09112699	67-72-1	Hexachloroethane	N001	2.1	ug/L	U	F	2.1		valid
P416589	WL	11/11/2009	09112699	193-39-5	Indeno(1,2,3-cd)pyrene	N001	0.65	ug/L	U	F	0.65		valid
P416589	WL	11/11/2009	09112699	78-59-1	Isophorone	N001	0.21	ug/L	U	F	0.21		valid
P416589	WL	11/11/2009	09112699	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
P416589	WL	11/11/2009	09112699	7439-97-6	Mercury	0001	0.027	ug/L	U	F	0.027		valid
P416589	WL	11/11/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
P416589	WL	11/11/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
P416589	WL	11/11/2009	09112699	7440-02-0	Nickel	0001	1.3	ug/L	U	F	1.3		valid
P416589	WL	11/11/2009	09112699	98-95-3	Nitrobenzene	N001	0.81	ug/L	U	F	0.81		valid
P416589	WL	11/11/2009	09112699	621-64-7	N-Nitrosodi-n-propylamine	N001	0.35	ug/L	U	F	0.35		valid
P416589	WL	11/11/2009	09112699	86-30-6	N-Nitrosodiphenylamine	N001	0.44	ug/L	U	F	0.44		valid
P416589	WL	11/11/2009	09112699	87-86-5	Pentachlorophenol	N001	20	ug/L	U	F	20		valid
P416589	WL	11/11/2009	09112699	108-95-2	Phenol	N001	2	ug/L	U	F	2		valid
P416589	WL	11/11/2009	09112699	129-00-0	Pyrene	N001	0.37	ug/L	U	F	0.37		valid
P416589	WL	11/11/2009	09112699	7782-49-2	Selenium	0001	4.9	ug/L	U	F	4.9		valid
P416589	WL	11/11/2009	09112699	7440-22-4	Silver	0001	0.93	ug/L	U	F	0.93		valid
P416589	WL	11/11/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
P416589	WL	11/11/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
P416589	WL	11/11/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
P416589	WL	11/11/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
P416589	WL	11/11/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
P416589	WL	11/11/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
P416589	WL	11/11/2009	09112699	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
P416589	WL	11/11/2009	09112699	7440-61-1	Uranium	0001	1.2	ug/L		F	0.02		valid
P416589	WL	11/11/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
P416589	WL	11/11/2009	09112699	7440-66-6	Zinc	0001	5.3	ug/L	B	F	4.5		J
PLFSEEPINF	TS	10/20/2009	09102658	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
PLFSEEPINF	TS	10/20/2009	09102658	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
PLFSEEPINF	TS	10/20/2009	09102658	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
PLFSEEPINF	TS	10/20/2009	09102658	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
PLFSEEPINF	TS	10/20/2009	09102658	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
PLFSEEPINF	TS	10/20/2009	09102658	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
PLFSEEPINF	TS	10/20/2009	09102658	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
PLFSEEPINF	TS	10/20/2009	09102658	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
PLFSEEPINF	TS	10/20/2009	09102658	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
PLFSEEPINF	TS	10/20/2009	09102658	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
PLFSEEPINF	TS	10/20/2009	09102658	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
PLFSEEPINF	TS	10/20/2009	09102658	106-46-7	1,4-Dichlorobenzene	N001	0.18	ug/L	J	F	0.16		valid
PLFSEEPINF	TS	10/20/2009	09102658	7440-38-2	Arsenic	N001	4.4	ug/L	U	F	4.4		valid
PLFSEEPINF	TS	10/20/2009	09102658	71-43-2	Benzene	N001	1.6	ug/L		F	0.16		valid
PLFSEEPINF	TS	10/20/2009	09102658	7440-41-7	Beryllium	N001	0.47	ug/L	U	F	0.47		valid
PLFSEEPINF	TS	10/20/2009	09102658	7440-42-8	Boron	N001	1400	ug/L		F	1.6		valid
PLFSEEPINF	TS	10/20/2009	09102658	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
PLFSEEPINF	TS	10/20/2009	09102658	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
PLFSEEPINF	TS	10/20/2009	09102658	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
PLFSEEPINF	TS	10/20/2009	09102658	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
PLFSEEPINF	TS	10/20/2009	09102658	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
PLFSEEPINF	TS	10/20/2009	09102658	108-90-7	Chlorobenzene	N001	0.37	ug/L	J	F	0.17		valid
PLFSEEPINF	TS	10/20/2009	09102658	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
PLFSEEPINF	TS	10/20/2009	09102658	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
PLFSEEPINF	TS	10/20/2009	09102658	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
PLFSEEPINF	TS	10/20/2009	09102658	7440-47-3	Chromium	N001	1.1	ug/L	B	F	0.66		valid
PLFSEEPINF	TS	10/20/2009	09102658	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
PLFSEEPINF	TS	10/20/2009	09102658	7440-50-8	Copper	0001	1.4	ug/L	U	F	1.4		valid
PLFSEEPINF	TS	10/20/2009	09102658	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
PLFSEEPINF	TS	10/20/2009	09102658	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
PLFSEEPINF	TS	10/20/2009	09102658	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
PLFSEEPINF	TS	10/20/2009	09102658	7439-97-6	Mercury	N001	0.027	ug/L	U	F	0.027		valid
PLFSEEPINF	TS	10/20/2009	09102658	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
PLFSEEPINF	TS	10/20/2009	09102658	91-20-3	Naphthalene	N001	14	ug/L		F	0.22		J
PLFSEEPINF	TS	10/20/2009	09102658	7440-02-0	Nickel	0001	5.3	ug/L	B	F	1.3		valid
PLFSEEPINF	TS	10/20/2009	09102658	7782-49-2	Selenium	N001	4.9	ug/L	U	F	4.9		valid
PLFSEEPINF	TS	10/20/2009	09102658	7440-22-4	Silver	0001	0.93	ug/L	U	F	0.93		valid
PLFSEEPINF	TS	10/20/2009	09102658	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
PLFSEEPINF	TS	10/20/2009	09102658	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
PLFSEEPINF	TS	10/20/2009	09102658	108-88-3	Toluene	N001	0.34	ug/L	J	F	0.17		valid
PLFSEEPINF	TS	10/20/2009	09102658	1330-20-7	Total Xylenes	N001	2.7	ug/L		F	0.19		J
PLFSEEPINF	TS	10/20/2009	09102658	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
PLFSEEPINF	TS	10/20/2009	09102658	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
PLFSEEPINF	TS	10/20/2009	09102658	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
PLFSEEPINF	TS	10/20/2009	09102658	7440-61-1	Uranium	N001	0.21	ug/L		F	0.02		valid
PLFSEEPINF	TS	10/20/2009	09102658	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
PLFSEEPINF	TS	10/20/2009	09102658	7440-66-6	Zinc	0001	6.5	ug/L	B	F	4.5		valid
PLFSYSEFF	TS	10/20/2009	09102658	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
PLFSYSEFF	TS	10/20/2009	09102658	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
PLFSYSEFF	TS	10/20/2009	09102658	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
PLFSYSEFF	TS	10/20/2009	09102658	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
PLFSYSEFF	TS	10/20/2009	09102658	120-82-1	1,2,4-Trichlorobenzene	N001	0.28	ug/L	U	F	0.28		valid
PLFSYSEFF	TS	10/20/2009	09102658	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
PLFSYSEFF	TS	10/20/2009	09102658	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
PLFSYSEFF	TS	10/20/2009	09102658	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
PLFSYSEFF	TS	10/20/2009	09102658	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
PLFSYSEFF	TS	10/20/2009	09102658	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
PLFSYSEFF	TS	10/20/2009	09102658	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
PLFSYSEFF	TS	10/20/2009	09102658	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
PLFSYSEFF	TS	10/20/2009	09102658	105-67-9	2, 4-Dimethylphenol	N001	0.58	ug/L	U	F	0.58		valid
PLFSYSEFF	TS	10/20/2009	09102658	95-95-4	2,4,5-Trichlorophenol	N001	0.45	ug/L	U	F	0.45		valid
PLFSYSEFF	TS	10/20/2009	09102658	88-06-2	2,4,6-Trichlorophenol	N001	0.29	ug/L	U	F	0.29		valid
PLFSYSEFF	TS	10/20/2009	09102658	120-83-2	2,4-Dichlorophenol	N001	0.64	ug/L	U	F	0.64		valid
PLFSYSEFF	TS	10/20/2009	09102658	51-28-5	2,4-Dinitrophenol	N001	10	ug/L	U	F	10		valid
PLFSYSEFF	TS	10/20/2009	09102658	121-14-2	2,4-Dinitrotoluene	N001	1.7	ug/L	U	F	1.7		valid
PLFSYSEFF	TS	10/20/2009	09102658	606-20-2	2,6-Dinitrotoluene	N001	1.9	ug/L	U	F	1.9		valid
PLFSYSEFF	TS	10/20/2009	09102658	91-58-7	2-Chloronaphthalene	N001	0.26	ug/L	U	F	0.26		valid
PLFSYSEFF	TS	10/20/2009	09102658	95-57-8	2-Chlorophenol	N001	2	ug/L	U	F	2		valid
PLFSYSEFF	TS	10/20/2009	09102658	91-94-1	3,3'-Dichlorobenzidine	N001	2	ug/L	U	F	2		valid
PLFSYSEFF	TS	10/20/2009	09102658	534-52-1	4,6-Dinitro-2-methyl phenol	N001	4	ug/L	U	F	4		valid
PLFSYSEFF	TS	10/20/2009	09102658	59-50-7	4-Chloro-3-methylphenol	N001	2.4	ug/L	U	F	2.4		valid
PLFSYSEFF	TS	10/20/2009	09102658	100-02-7	4-Nitrophenol	N001	1.2	ug/L	U	F	1.2		valid
PLFSYSEFF	TS	10/20/2009	09102658	83-32-9	Acenaphthene	N001	2.3	ug/L	J	F	0.28		valid
PLFSYSEFF	TS	10/20/2009	09102658	120-12-7	Anthracene	N001	0.42	ug/L	U	F	0.42		valid
PLFSYSEFF	TS	10/20/2009	09102658	7440-38-2	Arsenic	N001	4.4	ug/L	U	F	4.4		valid
PLFSYSEFF	TS	10/20/2009	09102658	56-55-3	Benz(a)anthracene	N001	0.35	ug/L	U	F	0.35		valid
PLFSYSEFF	TS	10/20/2009	09102658	71-43-2	Benzene	N001	0.64	ug/L	J	F	0.16		valid
PLFSYSEFF	TS	10/20/2009	09102658	50-32-8	Benzo(a)pyrene	N001	0.31	ug/L	U	F	0.31		valid
PLFSYSEFF	TS	10/20/2009	09102658	205-99-2	Benzo(b)fluoranthene	N001	0.53	ug/L	U	F	0.53		valid

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PLFSYSEFF	TS	10/20/2009	09102658	191-24-2	Benzo(g,h,i)Perylene	N001	0.5	ug/L	U	F	0.5		valid
PLFSYSEFF	TS	10/20/2009	09102658	207-08-9	Benzo(k)fluoranthene	N001	0.46	ug/L	U	F	0.46		valid
PLFSYSEFF	TS	10/20/2009	09102658	7440-41-7	Beryllium	N001	0.47	ug/L	U	F	0.47		valid
PLFSYSEFF	TS	10/20/2009	09102658	111-44-4	Bis(2-chloroethyl) ether	N001	0.41	ug/L	U	F	0.41		valid
PLFSYSEFF	TS	10/20/2009	09102658	108-60-1	Bis(2-chloroisopropyl) ether	N001	0.28	ug/L	U	F	0.28		valid
PLFSYSEFF	TS	10/20/2009	09102658	117-81-7	Bis(2-ethylhexyl) phthalate	N001	2.3	ug/L	J B	F	0.56		U
PLFSYSEFF	TS	10/20/2009	09102658	7440-42-8	Boron	N001	1100	ug/L		F	1.6		valid
PLFSYSEFF	TS	10/20/2009	09102658	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
PLFSYSEFF	TS	10/20/2009	09102658	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
PLFSYSEFF	TS	10/20/2009	09102658	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
PLFSYSEFF	TS	10/20/2009	09102658	85-68-7	Butyl benzyl phthalate	N001	1	ug/L	U	F	1		valid
PLFSYSEFF	TS	10/20/2009	09102658	7440-43-9	Cadmium	0001	0.45	ug/L	U	F	0.45		valid
PLFSYSEFF	TS	10/20/2009	09102658	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
PLFSYSEFF	TS	10/20/2009	09102658	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
PLFSYSEFF	TS	10/20/2009	09102658	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
PLFSYSEFF	TS	10/20/2009	09102658	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
PLFSYSEFF	TS	10/20/2009	09102658	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
PLFSYSEFF	TS	10/20/2009	09102658	7440-47-3	Chromium	N001	0.76	ug/L	B	F	0.66		valid
PLFSYSEFF	TS	10/20/2009	09102658	218-01-9	Chrysene	N001	0.63	ug/L	J B	F	0.54		U
PLFSYSEFF	TS	10/20/2009	09102658	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
PLFSYSEFF	TS	10/20/2009	09102658	7440-50-8	Copper	0001	1.4	ug/L	U	F	1.4		valid
PLFSYSEFF	TS	10/20/2009	09102658	53-70-3	Dibenz(a,h)anthracene	N001	0.51	ug/L	U	F	0.51		valid
PLFSYSEFF	TS	10/20/2009	09102658	84-66-2	Diethyl phthalate	N001	0.43	ug/L	J	F	0.38		valid
PLFSYSEFF	TS	10/20/2009	09102658	131-11-3	Dimethyl phthalate	N001	0.21	ug/L	U	F	0.21		valid
PLFSYSEFF	TS	10/20/2009	09102658	84-74-2	Di-n-butyl phthalate	N001	1.2	ug/L	U	F	1.2		valid
PLFSYSEFF	TS	10/20/2009	09102658	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
PLFSYSEFF	TS	10/20/2009	09102658	206-44-0	Fluoranthene	N001	0.43	ug/L	J	F	0.2		valid
PLFSYSEFF	TS	10/20/2009	09102658	86-73-7	Fluorene	N001	1.8	ug/L	J	F	0.31		valid
PLFSYSEFF	TS	10/20/2009	09102658	118-74-1	Hexachlorobenzene	N001	0.66	ug/L	U	F	0.66		valid
PLFSYSEFF	TS	10/20/2009	09102658	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
PLFSYSEFF	TS	10/20/2009	09102658	77-47-4	Hexachlorocyclopentadiene	N001	1.5	ug/L	U	F	1.5		valid
PLFSYSEFF	TS	10/20/2009	09102658	67-72-1	Hexachloroethane	N001	2.1	ug/L	U	F	2.1		valid
PLFSYSEFF	TS	10/20/2009	09102658	193-39-5	Indeno(1,2,3-cd)pyrene	N001	0.65	ug/L	U	F	0.65		valid
PLFSYSEFF	TS	10/20/2009	09102658	78-59-1	Isophorone	N001	0.21	ug/L	U	F	0.21		valid
PLFSYSEFF	TS	10/20/2009	09102658	7439-92-1	Lead	0001	2.6	ug/L	U	F	2.6		valid
PLFSYSEFF	TS	10/20/2009	09102658	7439-97-6	Mercury	N001	0.027	ug/L	U	F	0.027		valid
PLFSYSEFF	TS	10/20/2009	09102658	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
PLFSYSEFF	TS	10/20/2009	09102658	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
PLFSYSEFF	TS	10/20/2009	09102658	7440-02-0	Nickel	0001	5	ug/L	B	F	1.3		valid
PLFSYSEFF	TS	10/20/2009	09102658	98-95-3	Nitrobenzene	N001	0.81	ug/L	U	F	0.81		valid
PLFSYSEFF	TS	10/20/2009	09102658	621-64-7	N-Nitrosodi-n-propylamine	N001	0.35	ug/L	U	F	0.35		valid
PLFSYSEFF	TS	10/20/2009	09102658	86-30-6	N-Nitrosodiphenylamine	N001	0.44	ug/L	U	F	0.44		valid
PLFSYSEFF	TS	10/20/2009	09102658	87-86-5	Pentachlorophenol	N001	20	ug/L	U	F	20		valid
PLFSYSEFF	TS	10/20/2009	09102658	108-95-2	Phenol	N001	2	ug/L	U	F	2		valid
PLFSYSEFF	TS	10/20/2009	09102658	129-00-0	Pyrene	N001	0.37	ug/L	U	F	0.37		valid
PLFSYSEFF	TS	10/20/2009	09102658	7782-49-2	Selenium	N001	4.9	ug/L	U	F	4.9		valid
PLFSYSEFF	TS	10/20/2009	09102658	7440-22-4	Silver	0001	0.93	ug/L	U	F	0.93		valid
PLFSYSEFF	TS	10/20/2009	09102658	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
PLFSYSEFF	TS	10/20/2009	09102658	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
PLFSYSEFF	TS	10/20/2009	09102658	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
PLFSYSEFF	TS	10/20/2009	09102658	1330-20-7	Total Xylenes	N001	1.6	ug/L		F	0.19		J
PLFSYSEFF	TS	10/20/2009	09102658	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
PLFSYSEFF	TS	10/20/2009	09102658	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
PLFSYSEFF	TS	10/20/2009	09102658	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
PLFSYSEFF	TS	10/20/2009	09102658	7440-61-1	Uranium	N001	1.1	ug/L		F	0.02		valid

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PLFSYSEFF	TS	10/20/2009	09102658	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
PLFSYSEFF	TS	10/20/2009	09102658	7440-66-6	Zinc	0001	5.8	ug/L	B	F	4.5		valid
POM2	SL	11/12/2009	09112699	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
POM2	SL	11/12/2009	09112699	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
POM2	SL	11/12/2009	09112699	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
POM2	SL	11/12/2009	09112699	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
POM2	SL	11/12/2009	09112699	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
POM2	SL	11/12/2009	09112699	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
POM2	SL	11/12/2009	09112699	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
POM2	SL	11/12/2009	09112699	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid
POM2	SL	11/12/2009	09112699	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
POM2	SL	11/12/2009	09112699	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
POM2	SL	11/12/2009	09112699	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
POM2	SL	11/12/2009	09112699	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
POM2	SL	11/12/2009	09112699	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
POM2	SL	11/12/2009	09112699	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
POM2	SL	11/12/2009	09112699	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
POM2	SL	11/12/2009	09112699	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
POM2	SL	11/12/2009	09112699	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
POM2	SL	11/12/2009	09112699	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
POM2	SL	11/12/2009	09112699	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
POM2	SL	11/12/2009	09112699	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
POM2	SL	11/12/2009	09112699	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
POM2	SL	11/12/2009	09112699	156-59-2	cis-1,2-Dichloroethene	N001	0.23	ug/L	J	F	0.15		valid
POM2	SL	11/12/2009	09112699	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
POM2	SL	11/12/2009	09112699	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
POM2	SL	11/12/2009	09112699	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
POM2	SL	11/12/2009	09112699	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
POM2	SL	11/12/2009	09112699	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
POM2	SL	11/12/2009	09112699	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
POM2	SL	11/12/2009	09112699	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
POM2	SL	11/12/2009	09112699	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
POM2	SL	11/12/2009	09112699	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
POM2	SL	11/12/2009	09112699	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
POM2	SL	11/12/2009	09112699	79-01-6	Trichloroethene	N001	0.25	ug/L	J	F	0.16		valid
POM2	SL	11/12/2009	09112699	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
SPIN	TS	10/15/2009	09102650	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	620	mg/L	J	F	1.9		valid
SPIN	TS	10/15/2009	09102650	7440-61-1	Uranium	N001	62	ug/L		F	0.02		valid
SPIN	TS	12/7/2009	09122746	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	590	mg/L	J	F	1.9		valid
SPIN	TS	12/7/2009	09122746	7440-61-1	Uranium	N001	64	ug/L		F	0.02		valid
SPOUT	TS	10/15/2009	09102650	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	180	mg/L	J	F	1.9		valid
SPOUT	TS	10/15/2009	09102650	7440-61-1	Uranium	N001	30	ug/L		F	0.02		valid
SPOUT	TS	12/7/2009	09122746	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	83	mg/L	J	F	0.19		valid
SPOUT	TS	12/7/2009	09122746	7782-49-2	Selenium	N001	3.7	ug/L	L	F	0.7		J
SPOUT	TS	12/7/2009	09122746	7440-61-1	Uranium	N001	50	ug/L		F	0.02		valid
SPPDISCHARGEGALLERY	TS	10/15/2009	09102650	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N001	170	mg/L	J	F	1.9		valid
SPPDISCHARGEGALLERY	TS	10/15/2009	09102650	7440-61-1	Uranium	N001	30	ug/L		F	0.02		valid
SW018	SL	10/13/2009	09102645	71-55-6	1,1,1-Trichloroethane	N001	0.16	ug/L	U	F	0.16		valid
SW018	SL	10/13/2009	09102645	79-34-5	1,1,2,2-Tetrachloroethane	N001	0.2	ug/L	U	F	0.2		valid
SW018	SL	10/13/2009	09102645	79-00-5	1,1,2-Trichloroethane	N001	0.32	ug/L	U	F	0.32		valid
SW018	SL	10/13/2009	09102645	75-35-4	1,1-Dichloroethene	N001	0.14	ug/L	U	F	0.14		valid
SW018	SL	10/13/2009	09102645	120-82-1	1,2,4-Trichlorobenzene	N001	0.32	ug/L	U	F	0.32		valid
SW018	SL	10/13/2009	09102645	96-12-8	1,2-Dibromo-3-chloropropane	N001	0.81	ug/L	U	F	0.81		valid
SW018	SL	10/13/2009	09102645	106-93-4	1,2-Dibromoethane	N001	0.18	ug/L	U	F	0.18		valid
SW018	SL	10/13/2009	09102645	95-50-1	1,2-Dichlorobenzene	N001	0.13	ug/L	U	F	0.13		valid

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS
SW018	SL	10/13/2009	09102645	107-06-2	1,2-Dichloroethane	N001	0.13	ug/L	U	F	0.13		valid
SW018	SL	10/13/2009	09102645	78-87-5	1,2-Dichloropropane	N001	0.13	ug/L	U	F	0.13		valid
SW018	SL	10/13/2009	09102645	541-73-1	1,3-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
SW018	SL	10/13/2009	09102645	106-46-7	1,4-Dichlorobenzene	N001	0.16	ug/L	U	F	0.16		valid
SW018	SL	10/13/2009	09102645	71-43-2	Benzene	N001	0.16	ug/L	U	F	0.16		valid
SW018	SL	10/13/2009	09102645	75-27-4	Bromodichloromethane	N001	0.17	ug/L	U	F	0.17		valid
SW018	SL	10/13/2009	09102645	75-25-2	Bromoform	N001	0.19	ug/L	U	F	0.19		valid
SW018	SL	10/13/2009	09102645	74-83-9	Bromomethane	N001	0.21	ug/L	U	F	0.21		valid
SW018	SL	10/13/2009	09102645	56-23-5	Carbon tetrachloride	N001	0.19	ug/L	U	F	0.19		valid
SW018	SL	10/13/2009	09102645	108-90-7	Chlorobenzene	N001	0.17	ug/L	U	F	0.17		valid
SW018	SL	10/13/2009	09102645	124-48-1	Chlorodibromomethane	N001	0.17	ug/L	U	F	0.17		valid
SW018	SL	10/13/2009	09102645	67-66-3	Chloroform	N001	0.16	ug/L	U	F	0.16		valid
SW018	SL	10/13/2009	09102645	74-87-3	Chloromethane	N001	0.3	ug/L	U	F	0.3		valid
SW018	SL	10/13/2009	09102645	156-59-2	cis-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
SW018	SL	10/13/2009	09102645	100-41-4	Ethylbenzene	N001	0.16	ug/L	U	F	0.16		valid
SW018	SL	10/13/2009	09102645	87-68-3	Hexachlorobutadiene	N001	0.12	ug/L	U	F	0.12		valid
SW018	SL	10/13/2009	09102645	75-09-2	Methylene chloride	N001	0.32	ug/L	U	F	0.32		valid
SW018	SL	10/13/2009	09102645	91-20-3	Naphthalene	N001	0.22	ug/L	U	F	0.22		valid
SW018	SL	10/13/2009	09102645	100-42-5	Styrene	N001	0.17	ug/L	U	F	0.17		valid
SW018	SL	10/13/2009	09102645	127-18-4	Tetrachloroethene	N001	0.2	ug/L	U	F	0.2		valid
SW018	SL	10/13/2009	09102645	108-88-3	Toluene	N001	0.17	ug/L	U	F	0.17		valid
SW018	SL	10/13/2009	09102645	1330-20-7	Total Xylenes	N001	0.19	ug/L	U	F	0.19		valid
SW018	SL	10/13/2009	09102645	156-60-5	trans-1,2-Dichloroethene	N001	0.15	ug/L	U	F	0.15		valid
SW018	SL	10/13/2009	09102645	10061-02-6	trans-1,3-dichloropropene	N001	0.19	ug/L	U	F	0.19		valid
SW018	SL	10/13/2009	09102645	79-01-6	Trichloroethene	N001	0.16	ug/L	U	F	0.16		valid
SW018	SL	10/13/2009	09102645	75-01-4	Vinyl chloride	N001	0.4	ug/L	U	F	0.4		valid
SW093	SL	10/6/2009	09112686	AM-241	Americium-241	N001	0.0183	pCi/L	U	F	0.0265	0.0126	valid
SW093	SL	10/6/2009	09112686	7440-41-7	Beryllium	N001	1	ug/L	U	F	1		valid
SW093	SL	10/6/2009	09112686	7440-43-9	Cadmium	0001	0.11	ug/L	U	F	0.11		valid
SW093	SL	10/6/2009	09112686	7440-47-3	Chromium	N001	2.91	ug/L	B	F	1		valid
SW093	SL	10/6/2009	09112686	HARDNESS	Hardness	N001	561	mg/L		F	2.5		valid
SW093	SL	10/6/2009	09112686	PU-239,240	Plutonium-239, 240	N001	0.0311	pCi/L		F	0.0158	0.0135	J
SW093	SL	10/6/2009	09112686	7440-22-4	Silver	0001	0.2	ug/L	U	F	0.2		valid
SW093	SL	10/6/2009	09112686	7440-61-1	Uranium	N001	8.12	ug/L		F	0.05		valid
SW093	SL	10/31/2009	09122742	AM-241	Americium-241	N001	0.0171	pCi/L	U	F	0.0328	0.0156	valid
SW093	SL	10/31/2009	09122742	7440-41-7	Beryllium	N001	1	ug/L	U	F	1		valid
SW093	SL	10/31/2009	09122742	7440-43-9	Cadmium	0001	0.11	ug/L	U	F	0.11		valid
SW093	SL	10/31/2009	09122742	7440-47-3	Chromium	N001	1	ug/L	U	F	1		valid
SW093	SL	10/31/2009	09122742	HARDNESS	Hardness	N001	411	mg/L		F	2		valid
SW093	SL	10/31/2009	09122742	PU-239,240	Plutonium-239, 240	N001	0.0114	pCi/L	U	F	0.0117	0.00657	valid
SW093	SL	10/31/2009	09122742	7440-22-4	Silver	0001	0.2	ug/L	U	F	0.2		valid
SW093	SL	10/31/2009	09122742	7440-61-1	Uranium	N001	5.5	ug/L		F	0.05		valid
SW093	SL	11/24/2009	10012800	AM-241	Americium-241	N001	-0.000381	pCi/L	U	F	0.015	0.00245	valid
SW093	SL	11/24/2009	10012800	7440-41-7	Beryllium	N001	1	ug/L	U	F	1		valid
SW093	SL	11/24/2009	10012800	7440-43-9	Cadmium	0001	0.11	ug/L	U	F	0.11		valid
SW093	SL	11/24/2009	10012800	7440-47-3	Chromium	N001	1.11	ug/L	B	F	1		valid
SW093	SL	11/24/2009	10012800	HARDNESS	Hardness	N001	933	mg/L		F	3.33		valid
SW093	SL	11/24/2009	10012800	PU-239,240	Plutonium-239, 240	N001	0.00392	pCi/L	U	F	0.0144	0.00769	valid
SW093	SL	11/24/2009	10012800	7440-22-4	Silver	0001	0.2	ug/L	U	F	0.2		valid
SW093	SL	11/24/2009	10012800	7440-61-1	Uranium	N001	23.4	ug/L		F	0.05		valid

EXPLANATION

SAMPLE_ID

N00x = Sample was not filtered.

LAB_QUALIFIERS

* Replicate analysis not within control limits.

LOCATION_CODE	LOCATION_TYPE	DATE SAMPLED	LAB REQUISITION NUMBER	CAS	ANALYTE	SAMPLE ID	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCER-TAINTY	DATA VALIDATION QUALIFIERS

000x = Sample was filtered.

WATER_UNIT_OF_MEASURE

mg/L; ppm = milligrams per liter
pCi/L = picocuries per liter
ug/L = micrograms per liter
C = degrees celsius
mS/cm = milliSiemens per centimeter
NTU = normal turbidity units
s.u. = standard pH units
uS/cm = microSiemens per centimeter
umhos/cm = microSiemens per centimeter

SAMPLE_TYPE

F = Field Sample
D = Duplicate

DATA_VALIDATION_QUALIFIERS

valid	Result is valid.
F	Low flow sampling method used.
G	Possible grout contamination, pH > 9.
J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.
Q	Qualitative result due to sampling technique
R	Unusable result.
U	Parameter analyzed for but was not detected.
X	Location is undefined.
999	Validation not complete

+	Correlation coefficient for MSA < 0.995.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

LOCATION_TYPE

SL	SURFACE LOCATION
TS	TREATMENT SYSTEM
WL	WELL

Appendix C: Landfill Inspection Forms - Fourth Quarter CY 2009

C.1 Original Landfill

ORIGINAL LANDFILL – MONITORING AND MAINTENANCE PROGRAM

INSPECTION FORM

INSPECTOR: J. McLaughlin DATE: 10/27/09 TIME: 0900 REVIEWED BY: Gary Smith

TEMPERATURE: 46°F WEATHER CONDITIONS: Overcast + windy REVIEW DATE: 11-3-09

METEOROLOGICAL STATION LOCATION: NREL Wind Site

SUBSIDENCE / CONSOLIDATION

REGION	EVIDENCE OF CRACKS?	EVIDENCE OF DEPRESSIONS?	EVIDENCE OF SINK HOLES?	EVIDENCE OF PONDING?	OTHER (DESCRIBE BELOW)
COVER – WEST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
COVER – EAST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
BUTTRESS FILL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
DIVERSION BERM 1	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
DIVERSION BERM 2	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
DIVERSION BERM 3	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
DIVERSION BERM 4	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
DIVERSION BERM 5	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
DIVERSION BERM 6	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
DIVERSION BERM 7	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–

Settlement Plates on Top of cover to be inspected for integrity.
During Year 1, they will be surveyed quarterly, and annually thereafter.

Integrity intact?
☐ Yes ☐ No

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

The berm #1 area continues to look good with no cracks observed. The small ponding area in berm #7 was repaired by site staff on 10/6/09.

SLOPE STABILITY

REGION	EVIDENCE OF ~~SEEPS~~? cracks	EVIDENCE OF BLOCK OR CIRCULAR FAILURE?	EVIDENCE OF SEEPS?	OTHER? (DESCRIBE BELOW)
COVER – WEST	☐ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No	–
COVER – EAST	☐ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No	–
BUTTRESS FILL SIDESLOPE	☐ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No	–
WEST PERIMETER CHANNEL SIDESLOPES	☐ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST PERIMETER CHANNEL SIDESLOPES	☐ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No	–
COVER SEEPS (IF PRESENT)	☐ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No	–
			~~☐ Yes ☐ No~~	
			~~☐ Yes ☐ No~~	

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

The Seep #4 area and WPC outfall have some surface expression, but were not flowing at the time of the inspection. Seep #7 was still dry. Seep #8 has a large area of surface flow and is producing ~ 1-2 gpm.

SOIL COVER

REGION	EVIDENCE OF SOIL DEPOSITION OR EROSION?	EVIDENCE OF EROSION RILLS/GULLIES?	EVIDENCE OF BURROWING ANIMALS?	OTHER (DESCRIBE BELOW)
COVER – WEST	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	–
COVER – EAST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
BUTTRESS FILL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
BUTTRESS FILL SIDESLOPE	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

There is a small hole in the top of berm #1 that is possibly an animal burrow of some kind. The hole has been marked with a flag and filled in. We will continue to monitor the hole in future inspections.

The quarterly vegetation survey will be completed in November 2009.

VEGETATION

REGION	CONDITION OF GRASS	UNWANTED VEGETATION PRESENT*?	PERCENTAGE OF GRASS VERSUS BARE GROUND?	PERCENTAGE OF UNWANTED VEGETATION?
COVER- WEST		☐ Yes ☐ No		
COVER - EAST		☐ Yes ☐ No		
DIVERSION BERM 1		☐ Yes ☐ No		
DIVERSION BERM 2		☐ Yes ☐ No		
DIVERSION BERM 3		☐ Yes ☐ No		
DIVERSION BERM 4		☐ Yes ☐ No		
DIVERSION BERM 5		☐ Yes ☐ No		
DIVERSION BERM 6		☐ Yes ☐ No		
DIVERSION BERM 7		☐ Yes ☐ No		
WEST PERIMETER CHANNEL		☐ Yes ☐ No		
EAST PERIMETER CHANNEL		☐ Yes ☐ No		
UPPER BUTTERESS FILL SIDESLOPE		☐ Yes ☐ No		
LOWER BUTTRESS FILL SIDESLPOE		☐ Yes ☐ No		

* Unwanted vegetation includes weeds and deep-rooting trees.

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

STORMWATER MANAGEMENT STRUCTURES

CHANNELS / LINING

STRUCTURE	EVIDENCE OF EXCESSIVE EROSION, GULLYING, SCOUR, OR UNDERMINING?	EVIDENCE OF SETTLEMENT/ SUBSIDENCE OR DEPRESSIONS?	EVIDENCE OF BREACHING OR BANK FAILURE?	EVIDENCE OF BURROWING ANIMALS?	EVIDENCE OF SEDIMENT BUILD-UP OR OTHER BLOCKAGE?	EVIDENCE OF LINING DETERIORATION, HOLES, RIPS, OR SEPARATION?	EVIDENCE OF LINING DISPLACEMENT?
DIVERSION BERM 1	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 2	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 3	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 4	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 5	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 6	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 7	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
CHECK DAMS	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
WEST PERIMETER CHANNEL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
EAST PERIMETER CHANNEL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No

OTHER DEFICIENCIES?

None.

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

None.

STORMWATER MANAGEMENT STRUCTURES (CONTINUED)

OUTFALLS

CHECK EACH STRUCTURE FOR EXCESSIVE EROSION AND SEDIMENT DEPTH. IF SEDIMENT DEPTH IS COMPROMISING THE DESIGN CHARACTERISTICS, REMOVE SEDIMENT.

STRUCTURE	CONDITION / SEDIMENT DEPTH
DIVERSION BERM OUTFALL 1	Good condition / None.
DIVERSION BERM OUTFALL 2	
DIVERSION BERM OUTFALL 3	
DIVERSION BERM OUTFALL 4	
DIVERSION BERM OUTFALL 5	
DIVERSION BERM OUTFALL 6	
DIVERSION BERM OUTFALL 7	
WEST PERIMETER CHANNEL OUTFALL	
EAST PERIMETER CHANNEL OUTFALL	
FRENCH DRAIN OUTFALL (SID)	

OTHER DEFICIENCIES?

None.

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

None.

"RUN-ON" CONTROL

AREA	ADVERSELY AFFECTING OLF?			
NORTH OF THE ORIGINAL LANDFILL	☐ Yes	☒ No	COMMENT:	–
WEST OF THE WEST PERIMETER CHANNEL	☐ Yes	☒ No	COMMENT:	–
EAST OF THE EAST PERIMETER CHANNEL	☐ Yes	☒ No	COMMENT:	–
NORTH OF WOMAN CREEK	☐ Yes	☒ No	COMMENT:	–

MAINTENANCE REQUIRED

No maintenance required. We are currently building 9 sections of snow fence on the top (north side) of the OLF to help prevent snow from building up on the OLF cover.

INSTITUTIONAL CONTROLS

ITEM			
EVIDENCE OF EXCAVATION(S) OF COVER AND IMMEDIATE VICINITY OF COVER?	☐ Yes	☒ No	COMMENT: —
EVIDENCE OF CONSTRUCTION OF ROADS, TRAILS ON COVER OR BUILDINGS?	☐ Yes	☒ No	COMMENT: —
EVIDENCE OF UNAUTHORIZED ENTRY?	☐ Yes	☑ No	COMMENT: —
EVIDENCE OF DRILLING OF WELLS OR USE OF GROUNDWATER?	☐ Yes	☑ No	COMMENT: —
DAMAGE OR REMOVAL OF ANY SIGNAGE OR GROUNDWATER MONITORING WELLS?	☐ Yes	☑ No	COMMENT: —

OTHER DEFICIENCIES/PHOTO LOG

None.

ACTION ITEMS

DEFICIENCY	DATE NOTED	ACTION	DATE COMPLETED	COMMENTS
ponding in berm #7 needs further repair	9/28/09	Re-grade trough and remove high spot	10/6/09	N/A
Small burrow found in berm #1	10/27/09	Fill burrow and mark w/flag	10/27/09	We will continue to monitor burrow.

INSPECTOR SIGNATURE: [signature] DATE: 10/27/09

REVIEWER SIGNATURE: [signature] DATE: 11-3-09

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ORIGINAL LANDFILL – MONITORING AND MAINTENANCE PROGRAM

INSPECTION FORM

INSPECTOR: J McLaughlin DATE: 11/30/09 TIME: 0830 REVIEWED BY: Guy Squill

TEMPERATURE: 45 °F WEATHER CONDITIONS: cloudy REVIEW DATE: 12-3-09

METEOROLOGICAL STATION LOCATION: NREL Wind Site

SUBSIDENCE / CONSOLIDATION

REGION	EVIDENCE OF CRACKS?	EVIDENCE OF DEPRESSIONS?	EVIDENCE OF SINK HOLES?	EVIDENCE OF PONDING?	OTHER (DESCRIBE BELOW)
COVER – WEST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	-
COVER – EAST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	-
BUTTRESS FILL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	-
DIVERSION BERM 1	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	-
DIVERSION BERM 2	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	-
DIVERSION BERM 3	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	-
DIVERSION BERM 4	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	-
DIVERSION BERM 5	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	-
DIVERSION BERM 6	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	-
DIVERSION BERM 7	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	-

Settlement Plates on Top of cover to be inspected for integrity.
During Year 1, they will be surveyed quarterly, and annually thereafter.

Integrity intact?
☒ Yes ☐ No

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

The berm #1 area still looks good. There is a new location ~175' east of the end of berm #7 that shows evidence of ponding. It is ~15' east of the ponding location that was repaired on 9/28/09. The new ponding area will be repaired by site staff ASAP.

SLOPE STABILITY

REGION	EVIDENCE OF ~~SEEPS~~? cracks?	EVIDENCE OF BLOCK OR CIRCULAR FAILURE?	EVIDENCE OF SEEPS?	OTHER? (DESCRIBE BELOW)
COVER – WEST	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	–
COVER – EAST	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	–
BUTTRESS FILL SIDESLOPE	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
WEST PERIMETER CHANNEL SIDESLOPES	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST PERIMETER CHANNEL SIDESLOPES	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
COVER SEEPS (IF PRESENT)	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	–
			~~☐ Yes ☐ No~~	
			~~☐ Yes ☐ No~~	

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

The seep #4 and WPC outfall showed surface expression, but were not flowing. The seep #7 area showed some surface expression below berm #3. Seep #8 is flowing at ~ 1-2 gpm.

SOIL COVER

REGION	EVIDENCE OF SOIL DEPOSITION OR EROSION?	EVIDENCE OF EROSION RILLS/GULLIES?	EVIDENCE OF BURROWING ANIMALS?	OTHER (DESCRIBE BELOW)
COVER – WEST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
COVER – EAST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
BUTTRESS FILL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
BUTTRESS FILL SIDESLOPE	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

None.

OLF Vegetation Survey

VEGETATION

Jay K Nelson 12/1/09

REGION	CONDITION OF GRASS	UNWANTED VEGETATION PRESENT*?	PERCENTAGE OF GRASS VERSUS BARE GROUND?	PERCENTAGE OF UNWANTED VEGETATION?	
COVER- WEST	none to good	☒ Yes ☐ No	0-100%	CEDI, VETHI, CIARI, SNEN, SAAM,	<1%
COVER - EAST	none to good	☒ Yes ☐ No	0-100%	VETHI, SNEN, SAAM, CEDI, VEBL,	<1%
DIVERSION BERM 1	none to good	☒ Yes ☐ No	0-95%	VETHI, CEDI,	<1%
DIVERSION BERM 2	Sparse to good	☒ Yes ☐ No	5-95%	CEDI, VETHI,	<1%
DIVERSION BERM 3	Sparse to good	☒ Yes ☐ No	5-100%	CEDI, VETHI,	<1%
DIVERSION BERM 4	none to good	☒ Yes ☐ No	0-75%	CEDI, VETHI	<1%
DIVERSION BERM 5	Sparse to good	☒ Yes ☐ No	5-80%	VETHI, VEBL, CEDI,	<1%
DIVERSION BERM 6	Sparse to good	☒ Yes ☐ No	5-95%	VETHI,	<1%
DIVERSION BERM 7	Sparse to good	☒ Yes ☐ No	5-80%	CEDI, VETHI	<1%
WEST PERIMETER CHANNEL	none to moderate	☒ Yes ☐ No	0-50%	CANUI, VETHI,	<1%
EAST PERIMETER CHANNEL	none to good	☒ Yes ☐ No	0-75%	VETHI,	<1%
UPPER BUTTERESS FILL SIDESLOPE ~~Flat~~ area	Sparse to moderate	☒ Yes ☐ No	5-80%	VETHI, CEDI,	<1%
LOWER BUTTRESS FILL SIDESLPOE slope	Sparse to good	☒ Yes ☐ No	5-75%	VETHI,	<1%

* Unwanted vegetation includes weeds and deep-rooting trees.

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

Quite a few CEDI rosettes this fall.

Jay K Nelson 12/1/09

STORMWATER MANAGEMENT STRUCTURES

CHANNELS / LINING

STRUCTURE	EVIDENCE OF EXCESSIVE EROSION, GULLYING, SCOUR, OR UNDERMINING?	EVIDENCE OF SETTLEMENT/ SUBSIDENCE OR DEPRESSIONS?	EVIDENCE OF BREACHING OR BANK FAILURE?	EVIDENCE OF BURROWING ANIMALS?	EVIDENCE OF SEDIMENT BUILD-UP OR OTHER BLOCKAGE?	EVIDENCE OF LINING DETERIORATION, HOLES, RIPS, OR SEPARATION?	EVIDENCE OF LINING DISPLACEMENT?
DIVERSION BERM 1	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 2	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 3	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 4	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 5	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 6	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 7	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
CHECK DAMS	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
WEST PERIMETER CHANNEL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
EAST PERIMETER CHANNEL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No

OTHER DEFICIENCIES?

None.

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

None.

STORMWATER MANAGEMENT STRUCTURES (CONTINUED)

OUTFALLS

CHECK EACH STRUCTURE FOR EXCESSIVE EROSION AND SEDIMENT DEPTH. IF SEDIMENT DEPTH IS COMPROMISING THE DESIGN CHARACTERISTICS, REMOVE SEDIMENT.

STRUCTURE	CONDITION / SEDIMENT DEPTH
DIVERSION BERM OUTFALL 1	Good condition / None.
DIVERSION BERM OUTFALL 2	"
DIVERSION BERM OUTFALL 3	"
DIVERSION BERM OUTFALL 4	"
DIVERSION BERM OUTFALL 5	"
DIVERSION BERM OUTFALL 6	"
DIVERSION BERM OUTFALL 7	"
WEST PERIMETER CHANNEL OUTFALL	"
EAST PERIMETER CHANNEL OUTFALL	"
FRENCH DRAIN OUTFALL (SID)	"

OTHER DEFICIENCIES?

None.

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

None.

"RUN-ON" CONTROL

AREA	ADVERSELY AFFECTING OLF?			
NORTH OF THE ORIGINAL LANDFILL	☐ Yes	☒ No	COMMENT:	–
WEST OF THE WEST PERIMETER CHANNEL	☐ Yes	☒ No	COMMENT:	–
EAST OF THE EAST PERIMETER CHANNEL	☐ Yes	☒ No	COMMENT:	–
NORTH OF WOMAN CREEK	☐ Yes	☒ No	COMMENT:	–

MAINTENANCE REQUIRED

The new snow fence that was installed along the top of the OLF is functioning as designed and preventing snow from building up on the OLF cover.

INSTITUTIONAL CONTROLS

ITEM			
EVIDENCE OF EXCAVATION(S) OF COVER AND IMMEDIATE VICINITY OF COVER?	☐ Yes	☒ No	COMMENT: —
EVIDENCE OF CONSTRUCTION OF ROADS, TRAILS ON COVER OR BUILDINGS?	☐ Yes	☒ No	COMMENT: —
EVIDENCE OF UNAUTHORIZED ENTRY?	☐ Yes	☒ No	COMMENT: —
EVIDENCE OF DRILLING OF WELLS OR USE OF GROUNDWATER?	☐ Yes	☒ No	COMMENT: —
DAMAGE OR REMOVAL OF ANY SIGNAGE OR GROUNDWATER MONITORING WELLS?	☐ Yes	☒ No	COMMENT: —

OTHER DEFICIENCIES/PHOTO LOG

None.

ACTION ITEMS

DEFICIENCY	DATE NOTED	ACTION	DATE COMPLETED	COMMENTS
There is an area ~175' east of the end of berm #7 that shows evidence of ponding.	11/30/09	Re-grade trough to allow continuous flow of water	-	Repairs will be completed ASAP

JAM

INSPECTOR SIGNATURE: [signature] DATE: 11/30/09

REVIEWER SIGNATURE: [signature] DATE: 12-3-09

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ORIGINAL LANDFILL – MONITORING AND MAINTENANCE PROGRAM

INSPECTION FORM

INSPECTOR: J. McLaughlin DATE: 12/30/09 TIME: 0900 REVIEWED BY: Gary Squill

TEMPERATURE: 33 °F WEATHER CONDITIONS: overcast REVIEW DATE: 1-5-10

METEOROLOGICAL STATION LOCATION: NREL Wind Site

SUBSIDENCE / CONSOLIDATION

REGION	EVIDENCE OF CRACKS?	EVIDENCE OF DEPRESSIONS?	EVIDENCE OF SINK HOLES?	EVIDENCE OF PONDING?	OTHER (DESCRIBE BELOW)
COVER – WEST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	
COVER – EAST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	
BUTTRESS FILL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	
DIVERSION BERM 1	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	
DIVERSION BERM 2	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	
DIVERSION BERM 3	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	
DIVERSION BERM 4	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	
DIVERSION BERM 5	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	
DIVERSION BERM 6	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	
DIVERSION BERM 7	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	

Settlement Plates on Top of cover to be inspected for integrity.
During Year 1, they will be surveyed quarterly, and annually thereafter.

Integrity intact? ☒ Yes ☐ No

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

The berm #1 area is still in good shape. The ponding area in berm #7, noted in last months inspection, was repaired on 12/6/09. There was no new evidence of ponding at the time of this inspection.

SLOPE STABILITY

REGION	EVIDENCE OF ~~SEEPS~~ cracks?	EVIDENCE OF BLOCK OR CIRCULAR FAILURE?	EVIDENCE OF SEEPS?	OTHER? (DESCRIBE BELOW)
COVER – WEST	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	–
COVER – EAST	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	–
BUTTRESS FILL SIDESLOPE	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
WEST PERIMETER CHANNEL SIDESLOPES	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST PERIMETER CHANNEL SIDESLOPES	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
COVER SEEPS (IF PRESENT)	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	–
			☐ ~~Yes~~ ☐ ~~No~~	
			☐ ~~Yes~~ ☐ ~~No~~	

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

The area of Seep #7 approximately 10' SW of inclinometer 82608 was flowing at a rate of <.5 gpm. The surface flow isn't causing any erosion problems at this time. We will go ahead and install erosion controls to prevent problems in case higher flow rates are encountered. Seep #4 and the WPC drain outfall were flowing at ~ 1gpm. Seep #8 is flowing at ~ 2-3 gpm.

SOIL COVER

REGION	EVIDENCE OF SOIL DEPOSITION OR EROSION?	EVIDENCE OF EROSION RILLS/GULLIES?	EVIDENCE OF BURROWING ANIMALS?	OTHER (DESCRIBE BELOW)
COVER – WEST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	—
COVER – EAST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	—
BUTTRESS FILL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	—
BUTTRESS FILL SIDESLOPE	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	—

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

None.

The quarterly vegetation inspection was completed in November.

VEGETATION

REGION	CONDITION OF GRASS	UNWANTED VEGETATION PRESENT*?	PERCENTAGE OF GRASS VERSUS BARE GROUND?	PERCENTAGE OF UNWANTED VEGETATION?
COVER- WEST		☐ Yes ☐ No		
COVER - EAST		☐ Yes ☐ No		
DIVERSION BERM 1		☐ Yes ☐ No		
DIVERSION BERM 2		☐ Yes ☐ No		
DIVERSION BERM 3		☐ Yes ☐ No		
DIVERSION BERM 4		☐ Yes ☐ No		
DIVERSION BERM 5		☐ Yes ☐ No		
DIVERSION BERM 6		☐ Yes ☐ No		
DIVERSION BERM 7		☐ Yes ☐ No		
WEST PERIMETER CHANNEL		☐ Yes ☐ No		
EAST PERIMETER CHANNEL		☐ Yes ☐ No		
UPPER BUTTERESS FILL SIDESLOPE		☐ Yes ☐ No		
LOWER BUTTRESS FILL SIDESLPOE		☐ Yes ☐ No		

* Unwanted vegetation includes weeds and deep-rooting trees.

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

STORMWATER MANAGEMENT STRUCTURES

CHANNELS / LINING

STRUCTURE	EVIDENCE OF EXCESSIVE EROSION, GULLYING, SCOUR, OR UNDERMINING?	EVIDENCE OF SETTLEMENT/ SUBSIDENCE OR DEPRESSIONS?	EVIDENCE OF BREACHING OR BANK FAILURE?	EVIDENCE OF BURROWING ANIMALS?	EVIDENCE OF SEDIMENT BUILD-UP OR OTHER BLOCKAGE?	EVIDENCE OF LINING DETERIORATION, HOLES, RIPS, OR SEPARATION?	EVIDENCE OF LINING DISPLACEMENT?
DIVERSION BERM 1	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 2	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 3	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 4	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 5	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 6	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
DIVERSION BERM 7	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
CHECK DAMS	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
WEST PERIMETER CHANNEL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
EAST PERIMETER CHANNEL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No

OTHER DEFICIENCIES?

None.

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

None.

STORMWATER MANAGEMENT STRUCTURES (CONTINUED)

OUTFALLS

CHECK EACH STRUCTURE FOR EXCESSIVE EROSION AND SEDIMENT DEPTH. IF SEDIMENT DEPTH IS COMPROMISING THE DESIGN CHARACTERISTICS, REMOVE SEDIMENT.

STRUCTURE	CONDITION / SEDIMENT DEPTH
DIVERSION BERM OUTFALL 1	Good condition / None
DIVERSION BERM OUTFALL 2	"
DIVERSION BERM OUTFALL 3	"
DIVERSION BERM OUTFALL 4	"
DIVERSION BERM OUTFALL 5	"
DIVERSION BERM OUTFALL 6	"
DIVERSION BERM OUTFALL 7	"
WEST PERIMETER CHANNEL OUTFALL	"
EAST PERIMETER CHANNEL OUTFALL	"
FRENCH DRAIN OUTFALL (SID)	"

OTHER DEFICIENCIES?

None.

MAINTENANCE REQUIRED / COMMENTS/PHOTO LOG

None.

"RUN-ON" CONTROL

AREA	ADVERSELY AFFECTING OLF?		
NORTH OF THE ORIGINAL LANDFILL	☐ Yes	☒ No	COMMENT: —
WEST OF THE WEST PERIMETER CHANNEL	☐ Yes	☒ No	COMMENT: —
EAST OF THE EAST PERIMETER CHANNEL	☐ Yes	☒ No	COMMENT: —
NORTH OF WOMAN CREEK	☐ Yes	☒ No	COMMENT: —

MAINTENANCE REQUIRED

None.

INSTITUTIONAL CONTROLS

ITEM			
EVIDENCE OF EXCAVATION(S) OF COVER AND IMMEDIATE VICINITY OF COVER?	☐ Yes	☒ No	COMMENT: —
EVIDENCE OF CONSTRUCTION OF ROADS, TRAILS ON COVER OR BUILDINGS?	☐ Yes	☒ No	COMMENT: —
EVIDENCE OF UNAUTHORIZED ENTRY?	☐ Yes	☒ No	COMMENT: —
EVIDENCE OF DRILLING OF WELLS OR USE OF GROUNDWATER?	☐ Yes	☒ No	COMMENT: —
DAMAGE OR REMOVAL OF ANY SIGNAGE OR GROUNDWATER MONITORING WELLS?	☐ Yes	☒ No	COMMENT: —

OTHER DEFICIENCIES/PHOTO LOG

None

ACTION ITEMS

DEFICIENCY	DATE NOTED	ACTION	DATE COMPLETED	COMMENTS
Ponding area in berm #7	11/30/09	Re-grade berm trough.	12/6/09	—
—	—	Annual Settlement Monument survey	12/15/09	—

INSPECTOR SIGNATURE: [signature] DATE: 12/30/09

REVIEWER SIGNATURE: [signature] DATE: 1-5-10

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C.2 Present Landfill

PRESENT LANDFILL – MONITORING AND MAINTENANCE PROGRAM

INSPECTION FORM

INSPECTOR: J. McLaughlin DATE: 11/30/09 TIME: 1100 REVIEWED BY: Cheryl Sydl

TEMPERATURE: 48°F WEATHER CONDITIONS: pt cloudy REVIEW DATE: 12-3-09

METEOROLOGICAL STATION LOCATION: NREL Wind Site

SUBSIDENCE/CONSOLIDATION

REGION	EVIDENCE OF CRACKS?	EVIDENCE OF DEPRESSIONS?	EVIDENCE OF SINK HOLES?	EVIDENCE OF PONDING?	OTHER (DESCRIBE BELOW)
TOP OF COVER – WEST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
TOP OF COVER – EAST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
COVER SIDESLOPE – NORTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
COVER SIDESLOPE – SOUTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST FACE SLOPE – NORTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST FACE SLOPE – SOUTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST FACE SLOPE – CENTRAL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST FACE SLOPE – NORTH SEEP*	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–

Settlement Plates and side-slope monitoring points to be inspected for integrity. During Year 1, they will be surveyed quarterly, and annually thereafter

Integrity intact? ☒ Yes ☐ No

MAINTENANCE REQUIRED/COMMENTS/PHOTO LOG

None.

* AREA OF SEEP IS OUTSIDE OF LANDFILL COVER AND EAST OF THE COVER ANCHOR TRENCH

SLOPE STABILITY

REGION	EVIDENCE OF CRACKS?	EVIDENCE OF BLOCK OR CIRCULAR FAILURE?	EVIDENCE OF SEEPS?	OTHER (DESCRIBE BELOW)
COVER SIDESLOPE – NORTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
COVER SIDESLOPE – SOUTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
PERIMETER CHANNEL OUTER SLOPE – NORTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
PERIMETER CHANNEL OUTER SLOPE – SOUTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST FACE SLOPE – NORTH	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	–
EAST FACE SLOPE – SOUTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST FACE SLOPE – CENTRAL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST FACE SLOPE – NORTH SEEP*	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	–

MAINTENANCE REQUIRED/COMMENTS/PHOTO LOG

Seep on north side of east face is saturated, but shows no surface expression. Note that seep is located outside landfill cover.

* AREA OF SEEP IS OUTSIDE OF LANDFILL COVER AND EAST OF THE COVER ANCHOR TRENCH

SOIL COVER

REGION	EVIDENCE OF SOIL DEPOSITION OR EROSION?	EVIDENCE OF EROSION RILLS/GULLIES?	EVIDENCE OF BURROWING ANIMALS?	OTHER (DESCRIBE BELOW)
TOP OF COVER – WEST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
TOP OF COVER – EAST	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
COVER SIDESLOPE – NORTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
COVER SIDESLOPE – SOUTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST FACE SLOPE – NORTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST FACE SLOPE – SOUTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
EAST FACE SLOPE – CENTRAL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
AREA WHERE EAST SLOPE CENTRAL MEETS EAST SLOPE NORTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
AREA WHERE EAST SLOPE CENTRAL MEETS EAST SLOPE SOUTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	–
	VENT CAPS IN PLACE & SECURE?	**STANDPIPES IN GOOD CONDITION?**	**BIRDS OR INSECTS IN VENT CAPS?**	
COVER – BAROMETRIC VENTS	☒ Yes ☐ No	☒ Yes ☐ No	☐ Yes ☒ No	-

MAINTENANCE REQUIRED/COMMENTS/PHOTO LOG

None.

PLF Vegetation Survey 12/1/09
Derek Nelson

VEGETATION

REGION	CONDITION OF GRASS	UNWANTED VEGETATION PRESENT*?	OTHER (DESCRIBE BELOW)	
TOP OF COVER – WEST	good	☒ Yes ☐ No	VETHI,	<1%
TOP OF COVER – EAST	moderate to good	☒ Yes ☐ No	CEDH, VETHI, LIDAI,	<1%
EAST FACE SLOPE – NORTH	Sparse to good	☒ Yes ☐ No	ULPUI, CIARI, VETHI, ROARI, CEDH,	<1%
EAST FACE SLOPE – SOUTH	sparse to good	☒ Yes ☐ No	CIARI, VETHI, SAEXI,	<1%
EAST FACE SLOPE – CENTRAL	sparse to good	☒ Yes ☐ No	HYPEI, SAEXI, CIARI, ULPUI, VETHI	<1%
COVER SIDESLOPE – NORTH	moderate to good	☒ Yes ☐ No	VETHI, CIARI, CEDH	<1%
COVER SIDESLOPE – SOUTH	Sparse to good	☒ Yes ☐ No	VETHI, ~~CEDH~~, CIARI	<1%
VEGETATION-LINED PERIMETER CHANNEL – NORTH	Sparse to good	☐ Yes ☒ No		
VEGETATION-LINED PERIMETER CHANNEL – SOUTH	sparse to good	☒ Yes ☐ No	VETHI	<1%

* Unwanted vegetation includes weeds and deep-rooting trees.

MAINTENANCE REQUIRED/COMMENTS/PHOTO LOG

Area looks good. Snow has matted down most of the vegetation already.

12/1/09

SEEP TREATMENT SYSTEM

REGION	EVIDENCE OF PLUGGING, OBSTRUCTIONS, OR EXCESS DEBRIS?	EVIDENCE OF CRACKS OR DETERIORATION?	OTHER (DESCRIBE BELOW)
GWIS INLET PIPES	☐ Yes ☒ No	☐ Yes ☒ No	–
STRIP DRAIN INLET PIPE	☐ Yes ☒ No	☐ Yes ☒ No	–
NORTH MANHOLE OUTLET PIPE	☐ Yes ☒ No	☐ Yes ☒ No	–
SOUTH MANHOLE OUTLET PIPE	☐ Yes ☒ No	☐ Yes ☒ No	–
TREATMENT UNIT	☐ Yes ☒ No	☐ Yes ☒ No	–
TREATMENT UNIT OUTLET PIPE	☐ Yes ☒ No	☐ Yes ☒ No	–
NORTH MANHOLE	☐ Yes ☒ No	☒ Yes ☐ No	There are some new hairline cracks visible in the cement surrounding the manholes.
SOUTH MANHOLE	☐ Yes ☒ No	☒ Yes ☐ No	
TREATMENT UNIT GRATING	NA	☐ Yes ☒ No	–

MAINTENANCE REQUIRED/COMMENTS/PHOTO LOG

The cracks are not affecting the integrity of the manholes. They will be filled with new cement by site staff ASAP.

STORMWATER MANAGEMENT STRUCTURES

CHANNELS/LINING

STRUCTURE	EVIDENCE OF EXCESSIVE EROSION, GULLYING, SCOUR, OR UNDERMINING?	EVIDENCE OF SETTLEMENT/ SUBSIDENCE OR DEPRESSIONS?	EVIDENCE OF BREACHING OR BANK FAILURE?	EVIDENCE OF BURROWING ANIMALS?	EVIDENCE OF SEDIMENT BUILD-UP OR OTHER BLOCKAGE?	EVIDENCE OF LINING DETERIORATION, HOLES, RIPS, OR SEPARATION?	EVIDENCE OF LINING DISPLACEMENT?
DIVERSION BERM	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
VEGETATION-LINED PERIMETER CHANNEL – NORTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
VEGETATION-LINED PERIMETER CHANNEL – SOUTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
RIPRAP-LINED PERIMETER CHANNEL	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
C350-LINED EAST FACE	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
EAST FACE RIPRAP CHANNEL – NORTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
EAST FACE RIPRAP CHANNEL – SOUTH	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	

OTHER DEFICIENCIES?

None.

MAINTENANCE REQUIRED/COMMENTS/PHOTO LOG

None.

STORMWATER MANAGEMENT STRUCTURES (CONTINUED)

OUTFALLS

CHECK EACH STRUCTURE FOR EXCESSIVE EROSION AND SEDIMENT DEPTH. IF SEDIMENT DEPTH IS COMPROMISING THE DESIGN CHARACTERISTICS, REMOVE SEDIMENT.

STRUCTURE	CONDITION/SEDIMENT DEPTH
DIVERSION BERM OUTFALL – NORTH	Good condition / < .5" of sediment
DIVERSION BERM OUTFALL – SOUTH	↓
CULVERT 1 OUTFALL	↓
CULVERT 2 OUTFALL	↓
SOUTHWEST CULVERT OUTFALL	↓

CULVERTS

CHECK EACH STRUCTURE FOR BLOCKAGE, SURROUNDING CONDITIONS, BREACHING, SEDIMENT BUILD-UP, AND INLET/OUTLET CONDITIONS.

STRUCTURE	CONDITION
CULVERT 1	Good condition
CULVERT 2	"
SOUTHWEST CULVERT	"

MAINTENANCE REQUIRED/PHOTO LOG

None.

"RUN-ON" EROSION CONTROL

AREA	ADVERSELY AFFECTING PLF?		
RUN-ON INTO PERIMETER CHANNEL – NORTH	☐ Yes	☒ No	COMMENT: N/A
RUN-ON INTO PERIMETER CHANNEL – SOUTH	☐ Yes	☒ No	COMMENT: N/A
NATURAL DRAINAGE FED BY CULVERT 1	☐ Yes	☒ No	COMMENT: N/A
NATURAL DRAINAGE FED BY NORTHEAST PERIMETER CHANNEL	☐ Yes	☒ No	COMMENT: N/A
NATURAL DRAINAGE FED BY RIPRAP	☐ Yes	☒ No	COMMENT: N/A

MAINTENANCE REQUIRED/PHOTO LOG

None.

INSTITUTIONAL CONTROLS

ITEM			
EVIDENCE OF EXCAVATION(S) OF COVER AND IMMEDIATE VICINITY OF COVER?	☐ Yes	☒ No	COMMENT: N/A
EVIDENCE OF CONSTRUCTION OF ROADS OR TRAILS ON COVER OR BUILDINGS?	☐ Yes	☒ No	COMMENT: N/A
EVIDENCE OF UNAUTHORIZED ENTRY?	☐ Yes	☒ No	COMMENT: N/A
EVIDENCE OF DRILLING OF WELLS OR USE OF GROUNDWATER?	☐ Yes	☒ No	COMMENT: N/A
DISRUPTION OR DAMAGE OF SEEP TREATMENT SYSTEM?	☐ Yes	☒ No	COMMENT: N/A
DAMAGE OR REMOVAL OF ANY SIGNAGE OR GROUNDWATER MONITORING WELLS?	☐ Yes	☒ No	COMMENT: N/A

OTHER DEFICIENCIES/PHOTO LOG

None.

ACTION ITEMS

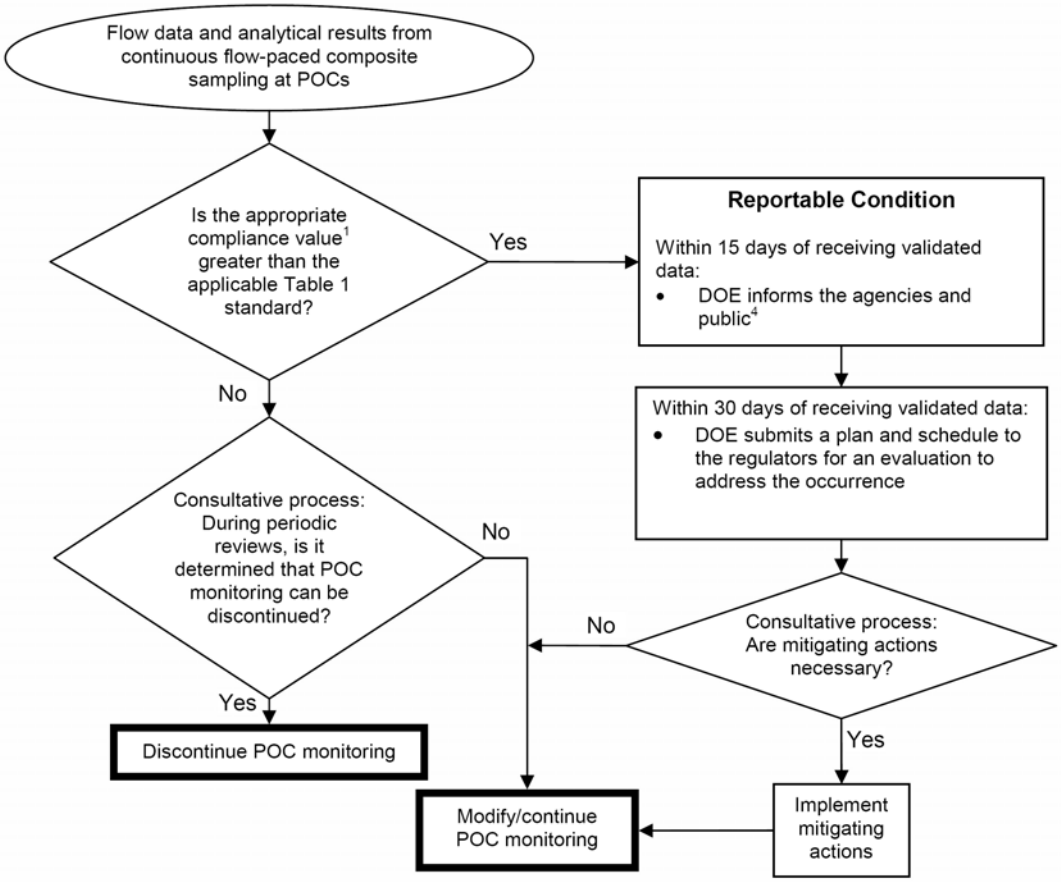
DEFICIENCY	DATE NOTED	ACTION	DATE COMPLETED	COMMENTS
small cracks in N+S manholes	11/30/09	Repair cracks	–	Repairs will be completed by site staff ASAP.

INSPECTOR SIGNATURE: [signature] DATE: 11/30/09

REVIEWER SIGNATURE: [signature] DATE: 12-3-09

Appendix D: Data Evaluation Flowcharts Reproduced from RFLMA and the RFSOG

D.1 Points of Compliance



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

[1] Appropriate Compliance Values by locations and analytes (see Table 2 for reference)

- All Indiana Street POCs:
  - plutonium, americium, uranium → 30-day average[2]
- All Terminal Pond POCs:
  - plutonium, americium, uranium → 12-month rolling average[3]
- Walnut Creek at Indiana Street POCs:
  - nitrate → 85th percentile of 30-day averages[3] for previous calendar year
- Walnut Creek Terminal Pond POCs:
  - nitrate → 12-month rolling average[2]

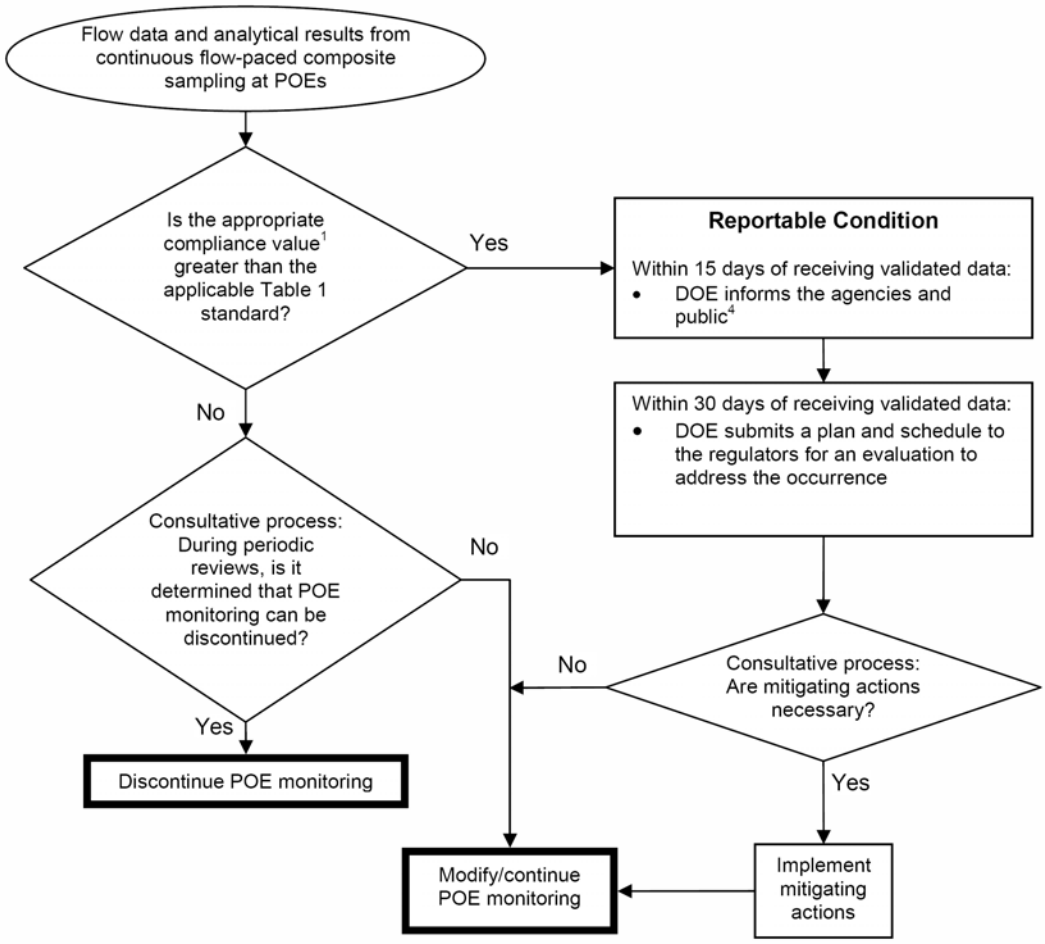
[2] The 30-day average for a particular day is calculated as a volume-weighted average of a "window" of time containing the previous 30 days with measurable flow. Each day has its own discharge volume (measured with a flow meter) and activity/concentration (from the sample carboy in place at the end of that day). Therefore, there are 365 30-day moving averages for a location that flows all year. At locations that have intermittent flows, 30-day averages are reported as averages of the previous 30 days of greater than zero flow. For days where no analytical result is available, either due to failed laboratory analysis or non-sufficient quantity (NSQ) for analysis, no 30-day average is reported.

[3] The 12-month rolling average for the last day of a particular month is calculated as a volume-weighted average of a "window" of time containing the previous 12 months. Each 12-month "window" includes daily discharge volumes (measured with a flow meter) and daily activities/concentrations (from the sample carboy in place at the end of that day). Therefore, there are twelve 12-month rolling averages for a given calendar year. Days with no flow or no analytical result, either due to failed laboratory analysis or NSQ for analysis, are not included in the average. When no flow has occurred in the previous 12 months, no 12-month rolling average is reported.

[4] Agencies: EPA, CDPHE, and USFWS
Public: Cities of Broomfield, Northglenn, Thornton, and Westminster; Rocky Flats Stewardship Council (RFSC)

Figure 5. Points of Compliance

D.2 Points of Evaluation



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

[1] Appropriate Compliance Values by analytes (see Table 2 for reference)
- plutonium, americium, uranium → 12-month rolling average[2]
- dissolved Cd and Ag, total Be and Cr → 85th percentile of 30-day averages[3] for previous calendar year

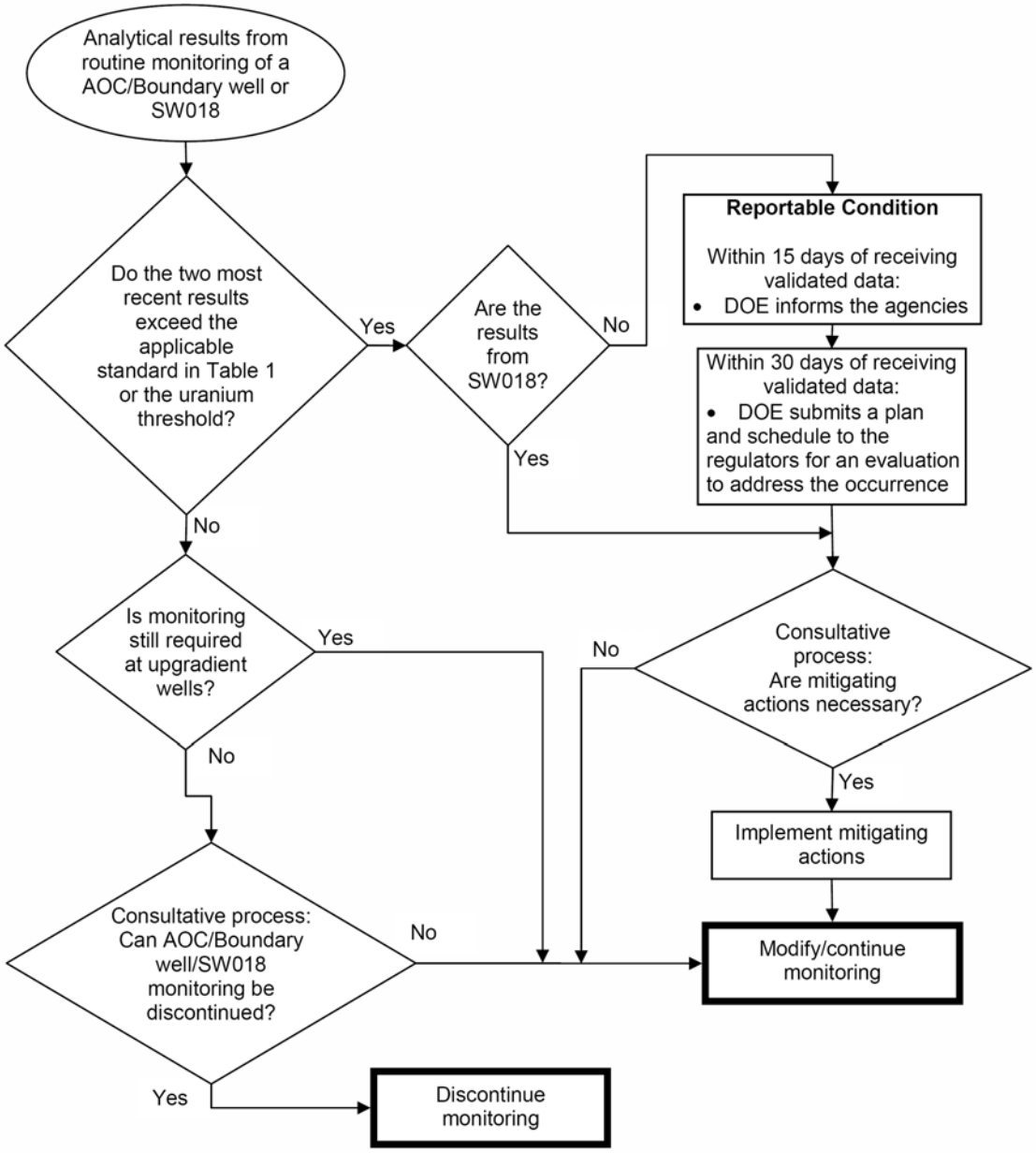
[2] The 30-day average for a particular day is calculated as a volume-weighted average of a "window" of time containing the previous 30-days with measurable flow. Each day has its own discharge volume (measured with a flow meter) and activity/concentration (from the sample carboy in place at the end of that day). Therefore, there are 365 30 day moving averages for a location that flows all year. At locations that have intermittent flows, 30-day averages are reported as averages of the previous 30 days of greater than zero flow. For days where no analytical result is available, either due to failed laboratory analysis or NSQ for analysis, no 30-day average is reported.

[3] The 12-month rolling average for the last day of a particular month is calculated as a volume-weighted average of a "window" of time containing the previous 12 months. Each 12-month "window" includes daily discharge volumes (measured with a flow meter) and daily activities/concentrations (from the sample carboy in place at the end of that day). Therefore, there are twelve 12-month rolling averages for a given calendar year. Days with no flow or no analytical result, either due to failed laboratory analysis or NSQ for analysis, are not included in the average. When no flow has occurred in the previous 12 months, no 12-month rolling average is reported.

[4] Agencies: EPA, CDPHE, and USFWS
Public: Cities of Broomfield, Northglenn, Thornton, and Westminster; Rocky Flats Stewardship Council (RFSC)

Figure 6. Points of Evaluation

D.3 Area of Concern Wells, Boundary Wells, and SW018

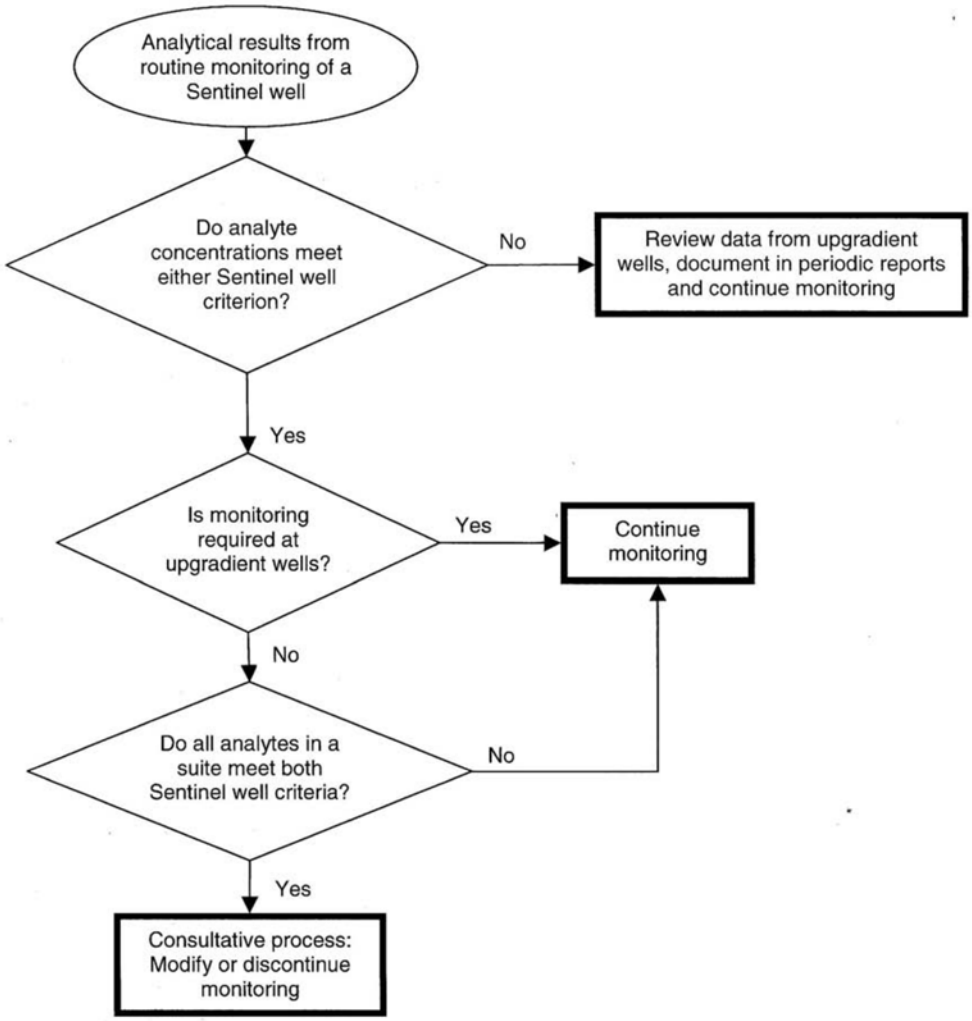


Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

- AOC wells and location SW018 are sampled twice each year; see Table 2.
- Boundary wells are sampled once each year; see Table 2. These wells are not part of the remedy, but are a component of operational monitoring.
- Decisions related to uranium in ground water are based upon a 16 ug/L threshold for Boundary wells (basis: the 11 pCi/L standard) and a 120 ug/L threshold for AOC wells (basis: a grand mean of results from Site-wide high-resolution uranium analyses performed in the late 1990s through mid-2000s), rather than the standard in Table 1.

Figure 7. Area of Concern Wells, Boundary Wells, and SW018

D.4 Sentinel Wells



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

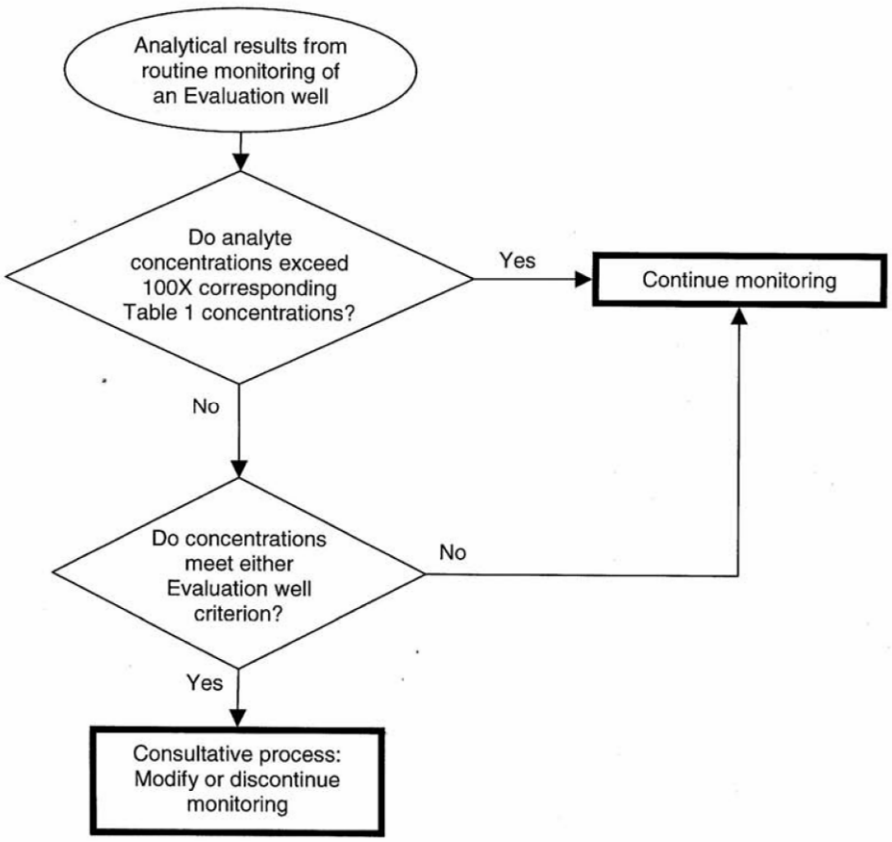
- Sentinel wells are sampled twice each year; see Table 2.
- Decisions related to uranium are based upon a 120 ug/L threshold for AOC wells (basis: a grand mean of results from Site-wide high-resolution uranium analyses performed in the late 1990s through mid-2000s), rather than the standard in Table 1.

Sentinel Well Criteria

1. The 85th percentile concentration of an analyte *is less than or equal to* the corresponding concentration in Table 1 or, for uranium, the 85th percentile concentration does not exceed 2x120 ug/L or the highest calendar year 2005 concentration, whichever is higher.
2. Analyte concentrations exhibit an indeterminate or statistically-significant *decreasing* trend at the 95% confidence level.

Figure 8. Sentinel Wells

D.5 Evaluation Wells



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

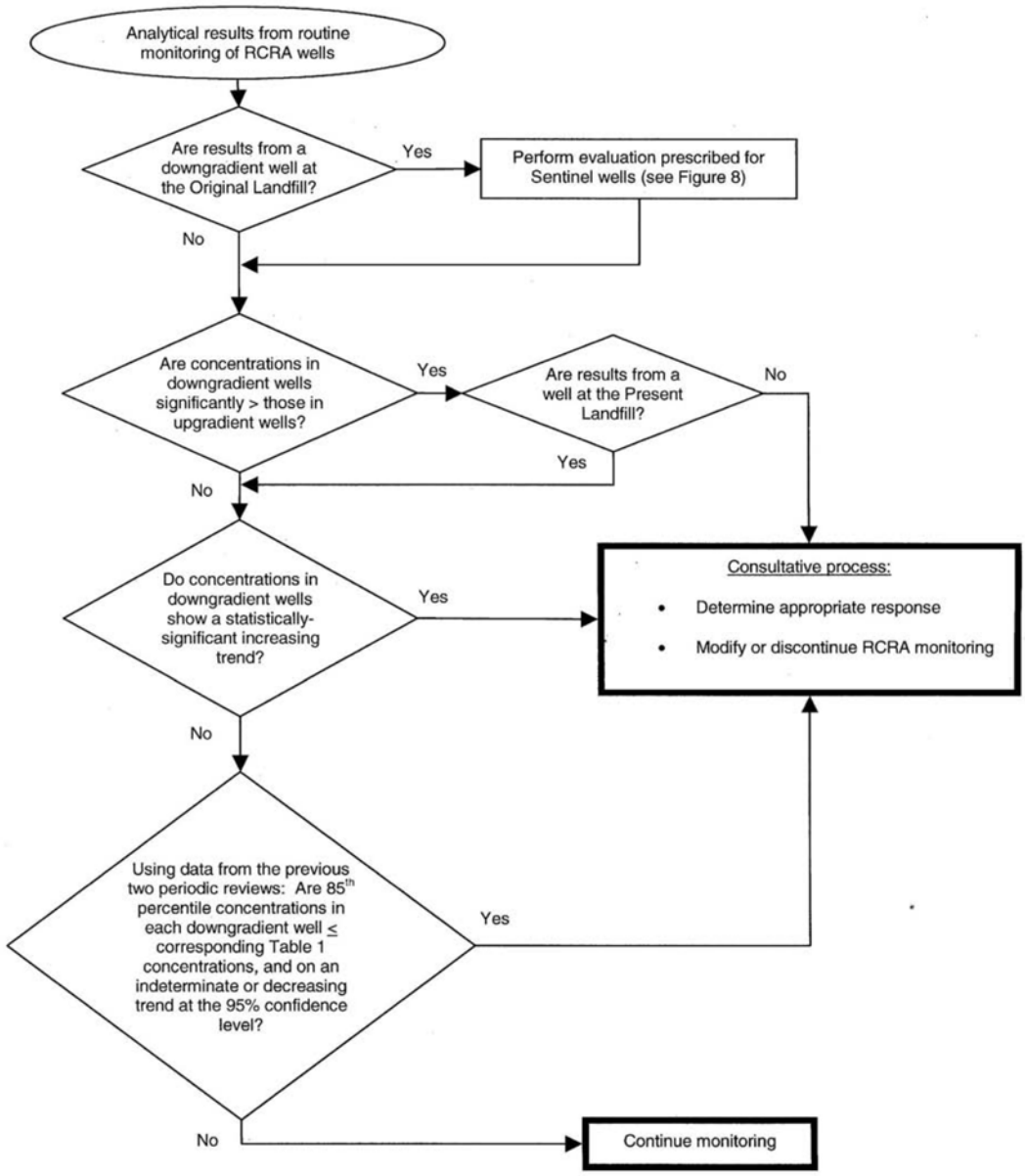
- Evaluation wells are listed in Table 2.

Evaluation Well Criteria:

1. The 85th percentile concentration of an analyte *is less than or equal to* the corresponding concentration in Table 1, or, for uranium, 240 ug/L or highest pre-CY05 concentration, whichever is higher.
2. Analyte concentrations exhibit an indeterminate or statistically-significant *decreasing* trend at the 95% confidence level.

Figure 9. Evaluation Wells

D.6 RCRA Wells



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.
RCRA wells are sampled quarterly; see Table 2.

Figure 10. RCRA Wells

D.7 Groundwater Treatment Systems

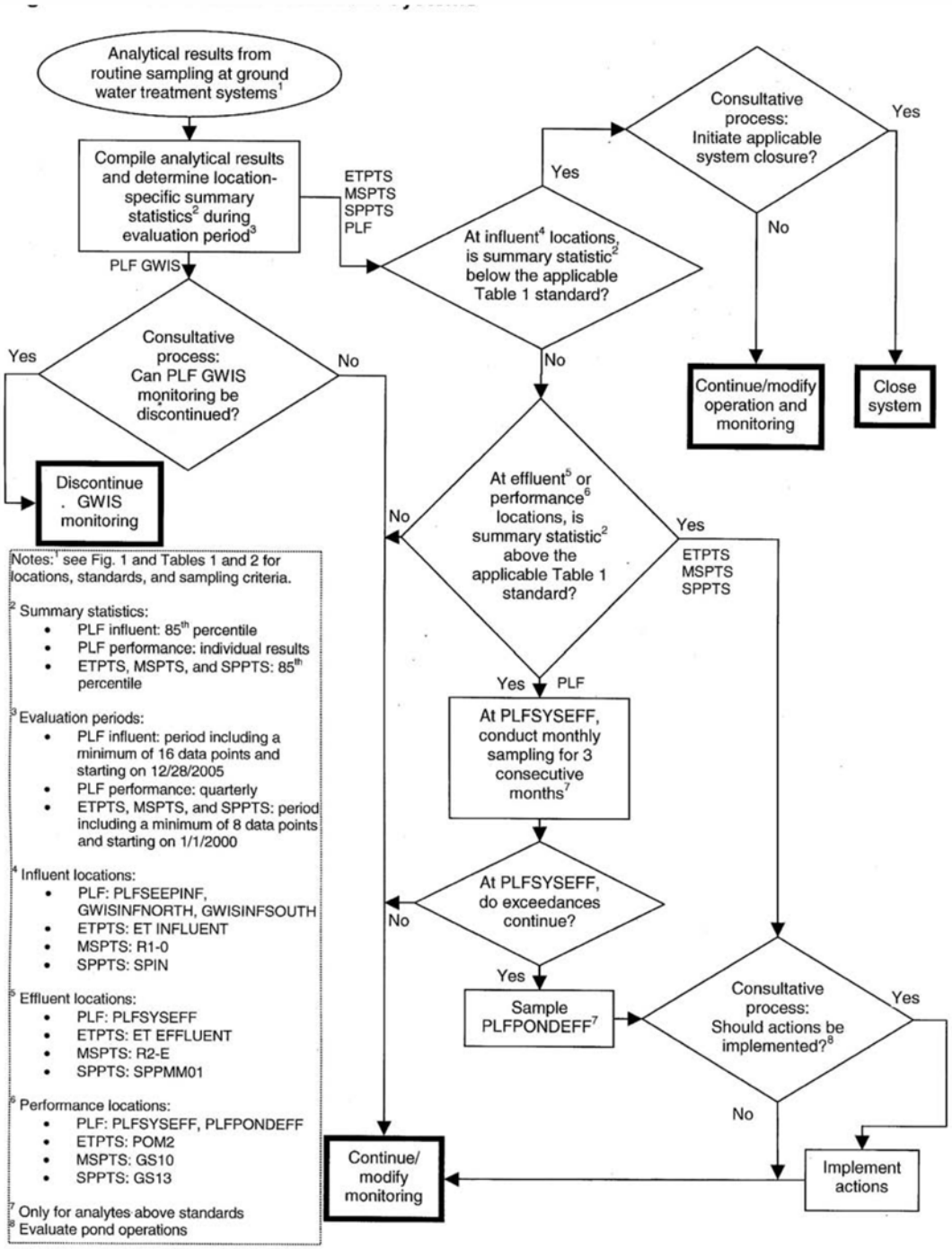


Figure 11. Groundwater Treatment Systems

D.8 Original Landfill Surface Water

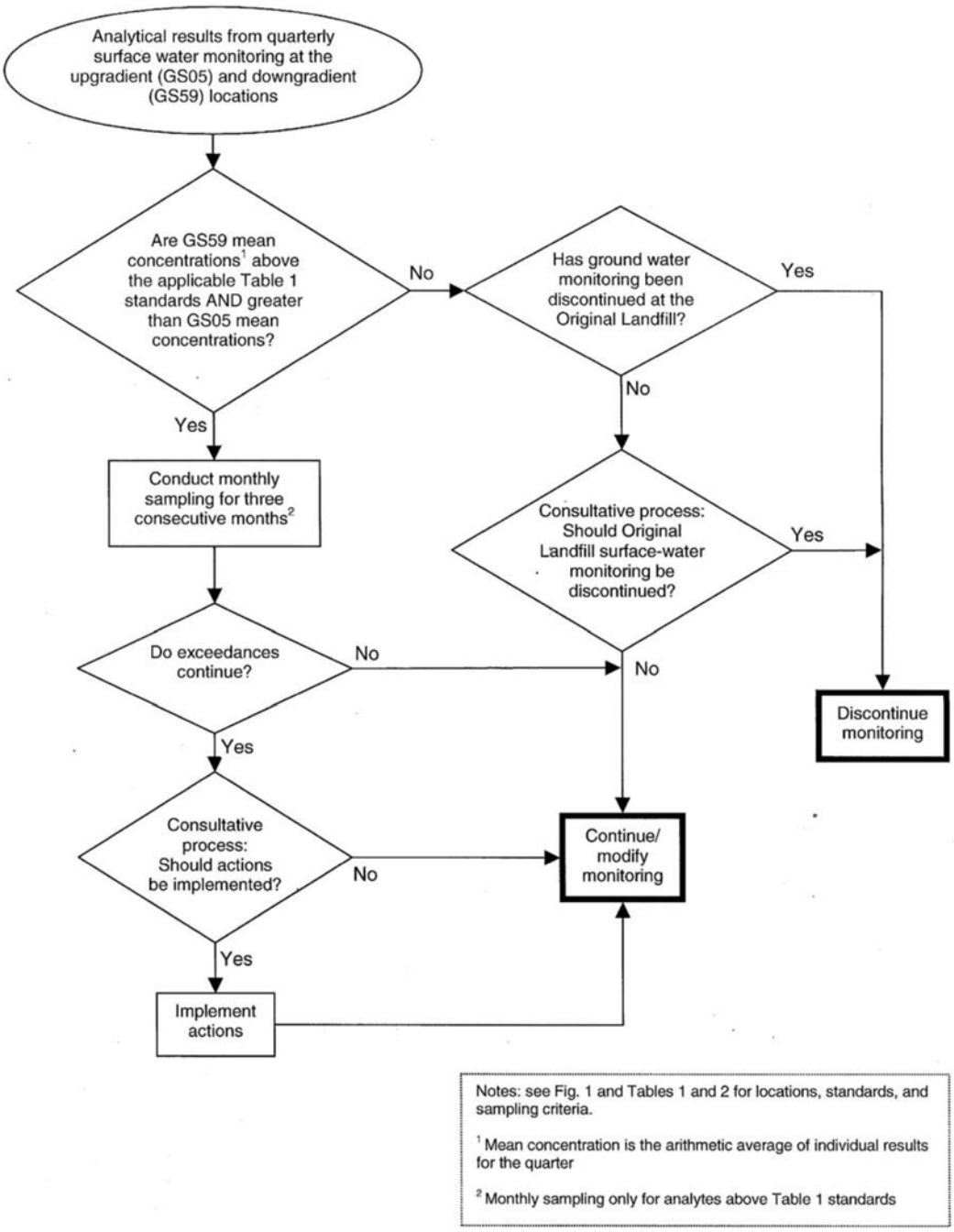


Figure 12. Original Landfill Surface Water

D.9 Pre-discharge Pond Sampling

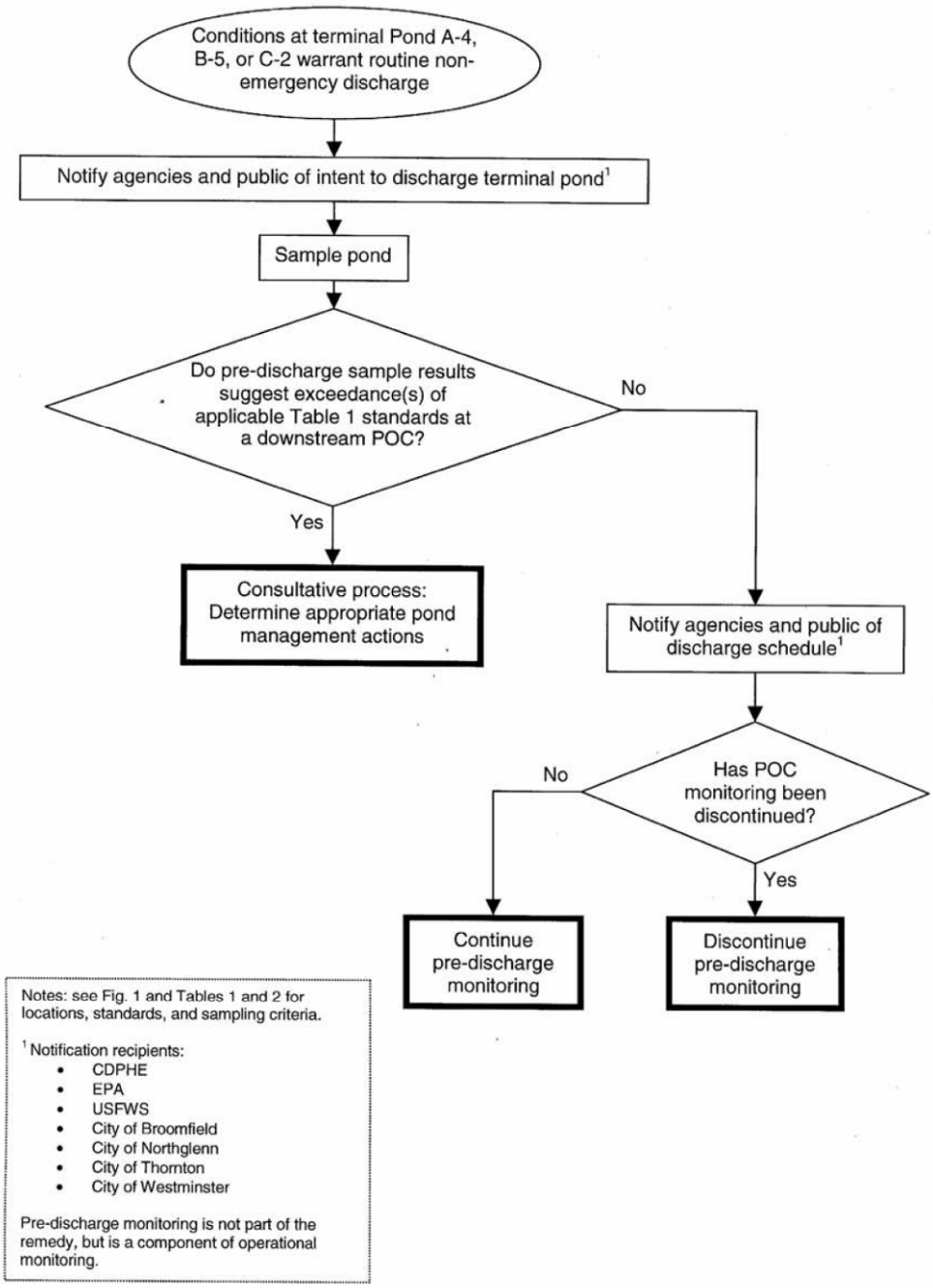


Figure 13. Pre-discharge Pond Sampling

D.10 Investigative Monitoring

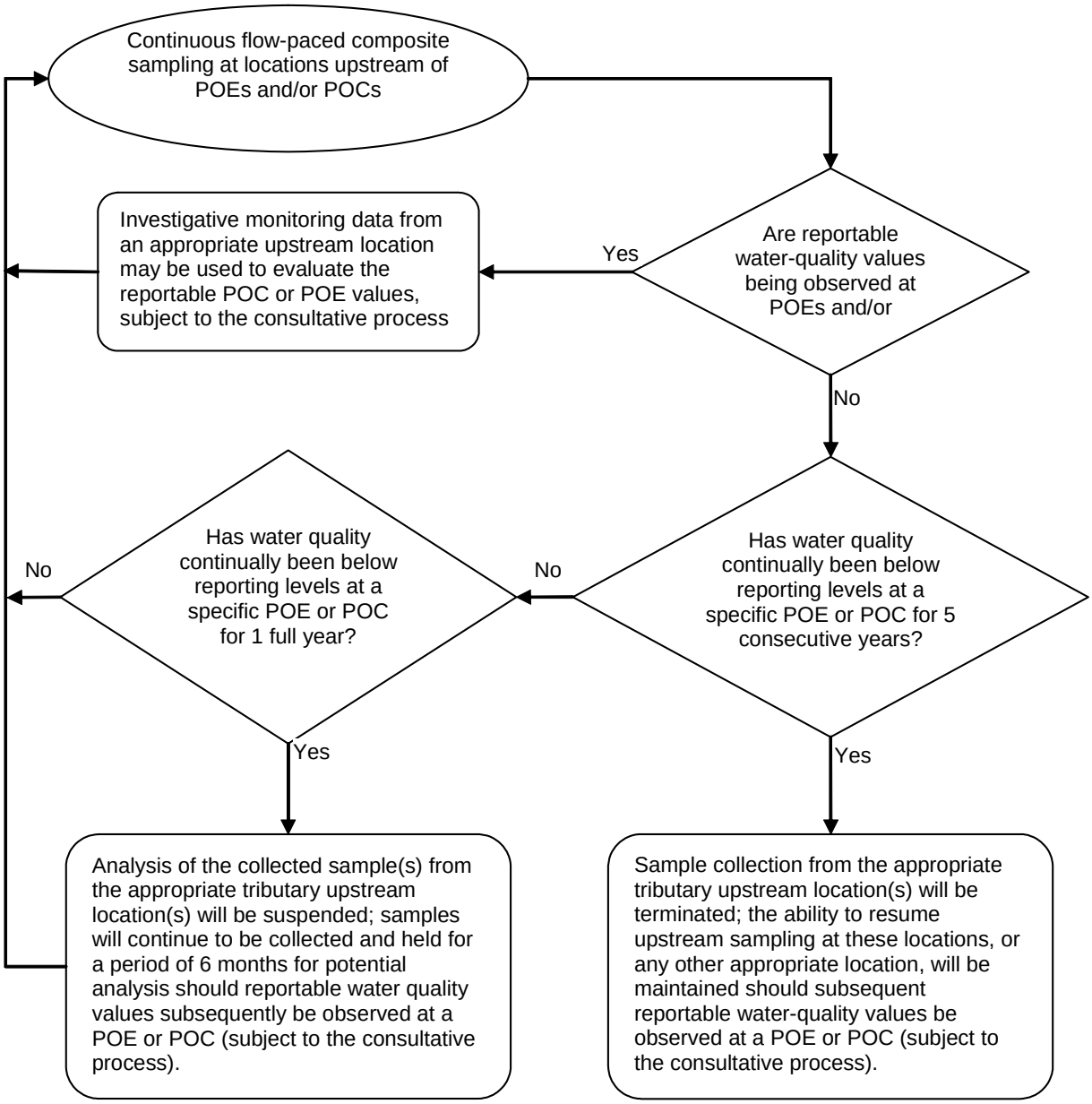


Figure 6-15. Investigative Monitoring Flowchart (from the RFSOG)

Appendix E

Technical Memorandum Regarding Instrumentation and Monitoring at the Rocky Flats OLF

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Technical Memorandum

To:	Mr. Rick DiSalvo	**From:**	Heather Trantham, Ph.D. PE, Thomas A. Chapel, PE
Company:	S. M. Stoller Corporation	**Date:**	April 15, 2010
Re:	Instrumentation and Monitoring, Rocky Flats OLF	**Tt Project #:**	114-181750

Introduction

This technical memorandum provides an evaluation of data collected from inclinometers at the Rocky Flats Original Landfill (OLF) between the time they were installed in April, 2008, through December 2009. Data from piezometers located on the outside of the inclinometer casings are also reviewed and evaluated for possible correlation with the inclinometer data. Relevant background information regarding the results of the geotechnical investigation during which the inclinometers were installed is also provided.

Background

According to information provided to Tetra Tech by S.M. Stoller (2007), the OLF was used between 1952 and 1968. During this time approximately 74,000 cy of sanitary waste and construction debris were reportedly disposed in the OLF. The remedial action selected to close the OLF included construction of a 2-foot-thick soil cover. The existing slopes were regraded prior to placement of the soil cover, and a buttress fill was constructed near the toe of the landfill. The remedial action also included installation of perimeter drainage channels and diversion berms to control surface water run-on and runoff around the landfill cover. Construction was completed in September 2005, with the final regulatory walk-down occurring on September 12, 2005.

Minor localized surface cracking, differential settlement, slumping and subsidence in drainage channels, and seeps that created saturated areas or direct surface flows on the cover or near the buttress toe were observed in 2006 and 2007, and triggered the need for a geotechnical investigation which was completed in June 2008 by Tetra Tech.

The geotechnical investigation by Tetra Tech included a geophysical investigation, seven exploratory borings, nine test pits, laboratory testing, inclinometer and piezometer installation, and slope stability analyses. Figure 1, Plan View of OLF site, shows the locations of the localized cracking, slumping and settling, seeps, test pits and the inclinometers.

The June 4, 2008 TetraTech OLF Geotechnical Investigation Report (TetraTech, 2008) (TetraTech Report) concluded that the slope failures that have occurred at the site are localized failures that are a result of movement of soil over one or more weak clay and organic soil layers within the native soil and bedrock. The weak planes are believed to be responsible for historic movement and slope instability that has been recognized in the OLF area. Landsliding and slope instability has been noted in previous reports and is visible on historic aerial photography. The Tetra Tech Report concluded that the risk of deep-seated slope failure has not been increased as a result of the OLF construction. In fact, the previous mitigative design and construction have improved the stability of the slope below the OLF. However, localized movements are likely to continue in the area when surface or ground water builds up and lubricates the weak layers. Working with S.M. Stoller and the DOE to identify a range of mitigation alternatives that would work within the framework of the approved OLF Monitoring and Maintenance Plan (M&M Plan), Tetra Tech presented alternatives to reduce water infiltration from surface cracks and drainage berms, and to facilitate natural drainage to the buttress and native soils. The recommendations are summarized below.

Improving surface drainage and reducing infiltration of surface water are considered the most feasible alternatives for increasing the slope stability and reducing the frequency and severity of continued slope movement. Any improvements that increase the drainage of surface water and reduce standing water or slow-flowing water on the OLF will increase the stability of the slopes because the infiltration into the subsurface will be decreased. We recommend monitoring the existing drainage conditions to ensure that standing water does not develop. Grading using hand tools, and occasional placement of local fill materials are suitable remedies for the localized distress that is likely to continue at the site. Additional means could be implemented that would reduce infiltration seasonally, such as construction of wind breaks or snow fences to reduce snow accumulation on the OLF. The introduction of plant species that would extract more water from the soil could be investigated.

Refer to the Tetra Tech Report for further details regarding the geotechnical investigation and resulting recommendations.

To implement recommendations in the TetraTech Report, S.M. Stoller constructed a drain extension for Seep 7, and modified the drainage features on the western side of the OLF as part of the OLF west perimeter channel filling and regrading work that was designed to improve stability in the vicinity of the observed localized cracking and slumping. S.M. Stoller also constructed snow fences north of the OLF, and has performed minor grading and filling of observe localized narrow surface cracks to mitigate water infiltration.

Instrumentation and Monitoring

Water level and inclinometer readings began on April 13, 2008. The piezometers are located near the base of each inclinometer tube, on the outside of the tube within the borehole. The piezometers were grouted in place, according to standard practice for this type of instrument, when the borehole was grouted as required to encase the inclinometer tube. The piezometers include automatic data loggers that were set to take readings that are converted to water levels using the manufacturers' calibration curves. Hourly data were logged from April 2008 through late December 2008. On December 22, 2008 S.M. Stoller switched to daily readings to increase data logger battery life. Daily readings have been collected since that time. The amount of deflection of the inclinometers was manually read approximately monthly – there is no automatic data logging

feature for the inclinometers. Inclinometer readings are obtained by inserting an approximately 32 inch long instrument into the inclinometer tube, and taking electronic readings of the exact orientation of the instrument at one foot intervals along the length of the tube. Wheels on the top and bottom of the instrument align the instrument in precise grooves along the length of the inside of the tube. Inclinometer readings are taken in two perpendicular directions created by the orientation of the grooves, relative to the A-axis and the B-axis of the inclinometer tube. Depending on the direction of the slope movement, some movement of the inclinometer tube may be seen in each axis, or all movement may be seen in one direction with no movement in the other direction. Because of the length and diameter of the instrument, inclinometer tube deflection can cause deformation that prevents the instrument from being inserted the full length of the tube. Also, deflection can reach a point causing the tube to break, also preventing insertion of the instrument beyond the point of the break. The data for the piezometers and inclinometers is included in Appendix A.

Piezometers 2, 4 and 5 began to show erratic readings in the summer of 2008. Piezometers 3 and 7 began to show erratic readings in November 2008 and January 2009, respectively. The readings were considered erratic because the fluctuations varied over half a foot or more within a one hour time period. Piezometer 1 is the only piezometer with readings that have remained reliable through 2009. Piezometer 5 has the longest stretches of unreliable readings. The other piezometers, 2, 3, 4, 6, and 7 have had periods of unreliability coupled with periods of reasonable readings. It is not clear whether the erratic and unreliable readings are the result of instrument failure, problems with response of the inclinometer to changing water levels, or other causes such as fluctuating water levels over time above and below the level of the piezometer.

The inclinometers were read on a regular basis beginning in April, 2008. Essentially no movement was observed for any of the inclinometers until April, 2009, following a period of heavy precipitation. The largest deflections were noted in inclinometers Tt-2, Tt-3 and Tt-4, on the western edge of the OLF. This was the area with the most pronounced differential settling, slumping and surface cracking in 2007.

Inclinometer Tt-2 was installed to a depth of 34 feet. Sometime after the August 19, 2009 reading, slope movement resulted in inclinometer tube deformation or breakage and the inclinometer could not be read below a depth of 25 feet on subsequent readings. Subsequent readings have been taken to a depth of 25 feet.

Inclinometer Tt-3 was installed to a depth of 38 feet. Slope movement at this location also resulted in inclinometer tube deformation or breakage, and the inclinometer could not be read below a depth of 33 feet on subsequent readings. Subsequent readings have been taken to a depth of 33 feet.

It is our opinion that monitoring of the inclinometers at the OLF should continue, in order to monitor the relative movement over time to the depths that can be measured. The deformed or broken casing likely indicates movement of the slope at or near the location of the break/obstruction. For the inclinometer in Tt-2, the depth at which the casing deformed or broke corresponds with the depth in the boring where soft clay was found. For the inclinometer in Tt-3, the casing is deformed or broken at a depth of 33 feet, which corresponds to a location in the subsurface where the geologic materials changed from sandy gravelly clay to claystone bedrock. The Tetra Tech Report

concluded that the slope failures were occurring in this weak clay layer that is below the landfill deposits, on top of or in the upper portions of the bedrock.

In general, there is a correlation between water in the subsurface and the movement that is occurring at the OLF. Some of the movement is likely related to recharge of the upper hydrostratigraphic unit that occurs well upgradient of the OLF, and some of the movement is due to an influx of water into the subsurface in the vicinity of the OLF. The relative influence of these two mechanisms on the movement that is occurring is not known. As a result, measures that are undertaken to decrease infiltration of surface water in the immediate vicinity of the OLF will not affect the up-gradient infiltration and therefore will not impact movement that results from the up-gradient infiltration.

Not each of the boreholes/piezometers/inclinometers show correlation between water levels measured and movement that has occurred. The inclinometers were read periodically, at intervals that differed from the interval that the piezometers' data were being automatically logged. The piezometer data were recorded at a much shorter interval (either hourly or daily, as described above), so as the piezometers recorded increases and decreases in the water level over short time periods and the inclinometers were read approximately monthly during these time periods, a correlation between the piezometer readings and inclinometer readings may not have been apparent.

The precipitation in the area was measured by S.M. Stoller using on-site devices during the period of record for these inclinometers and piezometers. S.M. Stoller has noted that some inaccuracy of the measurements is likely because during events when significant snowfall accumulates on the devices, some of the snow may blow or fall off the device instead of accumulating in the device. Graphs prepared by S.M. Stoller that show monthly and average precipitation are included in Attachment B. In general, the graphs show that during the period of record for these piezometers and inclinometers, precipitation at the site was highest between April and October and lower between November and March.

The locations of each borehole that was instrumented with piezometers and inclinometers is shown on Figure 1. The specifics of each borehole/piezometer/inclinometer are discussed below when significant changes were seen to occur. A lack of comment on a particular time interval indicates that the performance of the instrumentation during the intervening period was not interpreted as being significant. Graphs showing the water levels measured by piezometers and movement of each axis of the inclinometers are shown in Attachment A. In cases where unusually erratic and/or widely variable piezometer data resulted in a difficult to read graph, some of the data points were removed from the graphs to improve clarity. For completeness, data without these points removed are also presented in Attachment C.

Tt-1. There does not appear to be a relationship between piezometer readings and inclinometer readings for Tt-1. Tt-1 was intentionally placed outside of the current slide area. There is a very small increase in movement in the direction of the B-axis of the inclinometer.

Tt-2. The inclinometer readings for Tt-2 show movements starting in May 2008 and continuing until a peak of 1.4 inches on the A-axis was recorded on July 22, 2009. This followed a spike in the high water level on 6/12/09. There is a lag time between the increase in water level and the measured movement of approximately 4 to 6 weeks. This lag time is seen when analyzing the

correlations for the other boreholes as well. During the same period, there was movement in the B-axis direction.

Movement in the B-axis direction that was recorded on July 22, 2009 may be related to an increase in the water level, but the data are not conclusive. It is not clear from the piezometer data if the large increase in water level shown is accurate or if it is “noise” recorded as part of the erratic behavior. After the movement occurred, a small decreasing trend can be seen in the A-axis, and no additional movement is apparent in the B-axis direction.

Tt-3. Movement in the direction of the A-axis started in November 2008, and movement in the B-axis direction started in April 2009. The maximum movement in both the A- and B- axes seems to coincide with a spike in water level that occurred on June 13, 2009. It is likely that the precipitation that caused the maximum movement occurred prior to the water level spike seen at this time. We are unable to verify this due to the erratic piezometer behavior prior to the end of April 2009. After the peak movement occurred, the movement seems to decrease in the A-axis direction even though there is a large fluctuation in the water level as measured by the piezometer in October and November, 2009. Movement in the B-axis direction did not correlate with the large fluctuation in the water table seen in October and November, 2009.

Tt-4. The inclinometer readings in Tt-4 show movement in both axes starting in May 2009 and peaking in July 2009. The movement in both directions lagged behind a large increase in water level that occurred in the late spring and early summer of 2009.

Tt-5. The movement of the inclinometer casing in both axes correlated with an increase in water level as measured by the piezometer in Tt-5 at the beginning of June, 2009. The inclinometer movement leveled off during a period when the water level decreased according to the piezometer data in the middle of August, 2009. The piezometer in Tt-5 displayed erratic behavior from September to November of 2009, and it is not possible to draw conclusions between the water level measurements and the movement measured by the inclinometer during that time.

Tt-6. The general trend of the inclinometer data in the A-axis is an increase in movement starting in April 2009 that reached a maximum of 0.45 inches. A small increase in the water level was indicated in 2008 and early 2009 as measured by the fluctuation of the piezometer. No significant movement of the inclinometers was apparent during that time. A general increase in water level started in April 2009 and continued throughout the rest of the year. There was a corresponding increase in movement measured by the inclinometer during that time. Small movements occurred along the B-axis.

Tt-7. There has been a general trend for an increase in movement along the A- and B- axes. A large movement that occurred along both axes in April, 2009 followed a gap in piezometer data which were eliminated from the graph to improve the clarity of the figure. There was precipitation during this time and it is likely that there was a rise in the water table as a result of the precipitation The local precipitation data contained in Appendix B also indicates a large increase in precipitation during April 2009.The movement in the A-axis direction increased but then did not continue after June 2009. The movement in the B-axis direction reached a plateau in the summer of 2009, and then increased slightly.

Recommendations

The recommendations made in the original report (Tetra Tech, 2008) remain valid. The instrumentation indicates that instability is caused by one or more weak layers in the shallow subsurface, and movement is exacerbated by precipitation events and elevated water levels.

Slope stability modeling indicates the large scale, overall slope is stable. However, localized failures have occurred on the OLF under elevated water level conditions. A reduction in the water level alone is not considered adequate to ensure the long term stability of the slope. If the drainage/surface water repairs are made, localized failures will still be possible during or after large or prolonged precipitation events, or when movement results from water that is related to regional recharge of the upper hydrogeologic unit. Modeling showed that an increase in soil strength is also needed to increase the safety factor to typical long term levels. Additional instrumentation, while interesting from a scientific and engineering perspective, would likely not provide new or additional insight into opportunities to improve performance of the landfill cover. We believe that continued monitoring and maintenance provide an effective course of action so long as the on-going level of maintenance can be continued.

Limitations

The above opinions and recommendations are based on a reasonable degree of certainty. This report has been prepared based upon a review of climate, weather and design documents, field investigation and testing, geotechnical engineering analyses, site visits, and our experience. The conclusions represent our best judgment based on the information available. Should additional information become available we should be allowed to review that information and modify our conclusions accordingly.

References

Tetra Tech, Inc. 2008. Rocky Flats Original Landfill Geotechnical Investigation Report. Jefferson County, Colorado. June.

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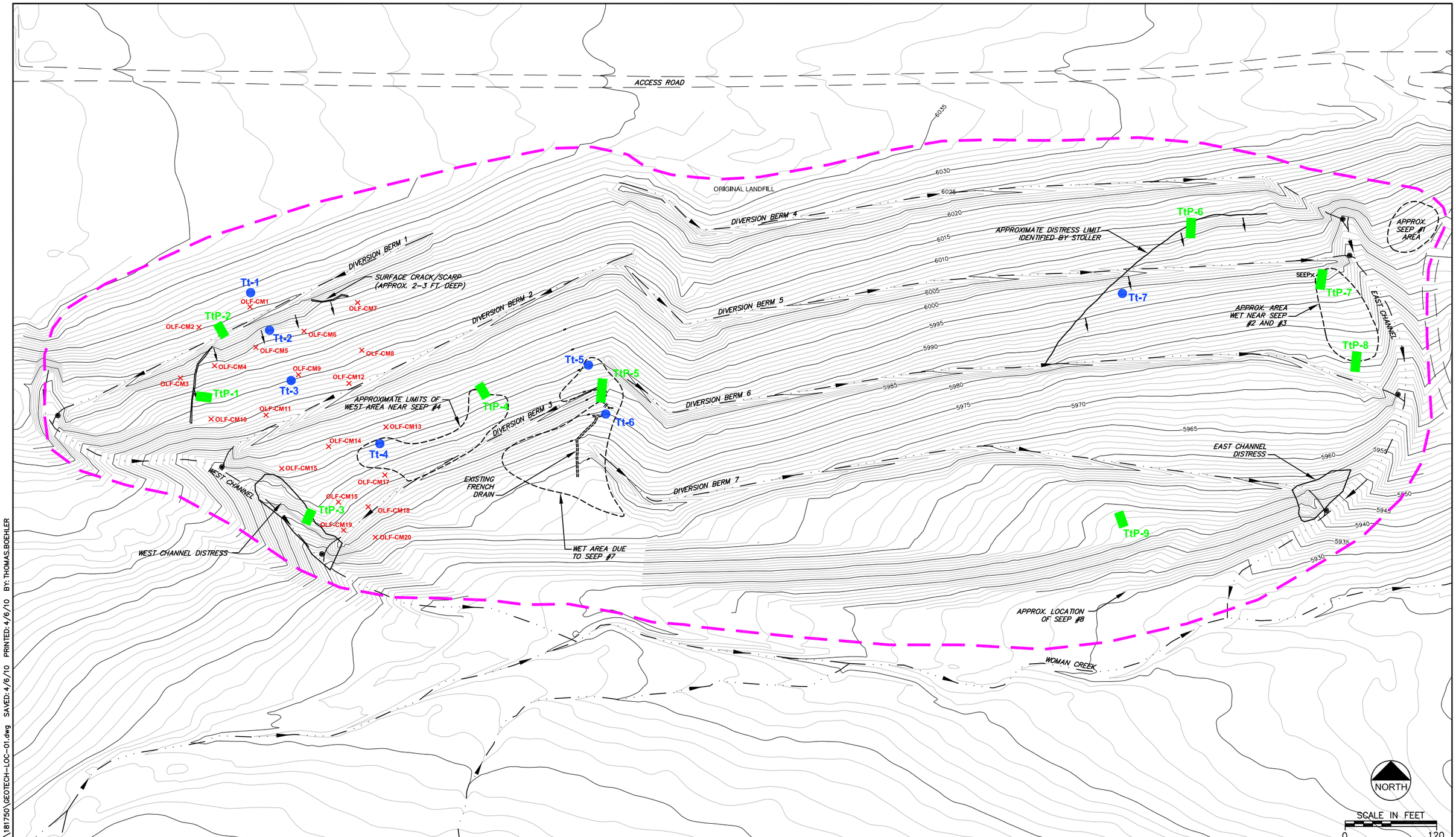

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Project No. 181750

April 2010

LEGEND:

- DITCH/CHANNEL/CREEK
- SLUMP OR SUBSIDENCE LINE AND DIRECTION
- ROAD
- SETTLEMENT MONUMENT (EXISTING)
- APPROXIMATE LIMITS OF GEOTECHNICAL INVESTIGATION
- TEST PIT LOCATION
- TEST BORING AND INCLINOMETER LOCATION

Figure 1
Plan View of OLF Site

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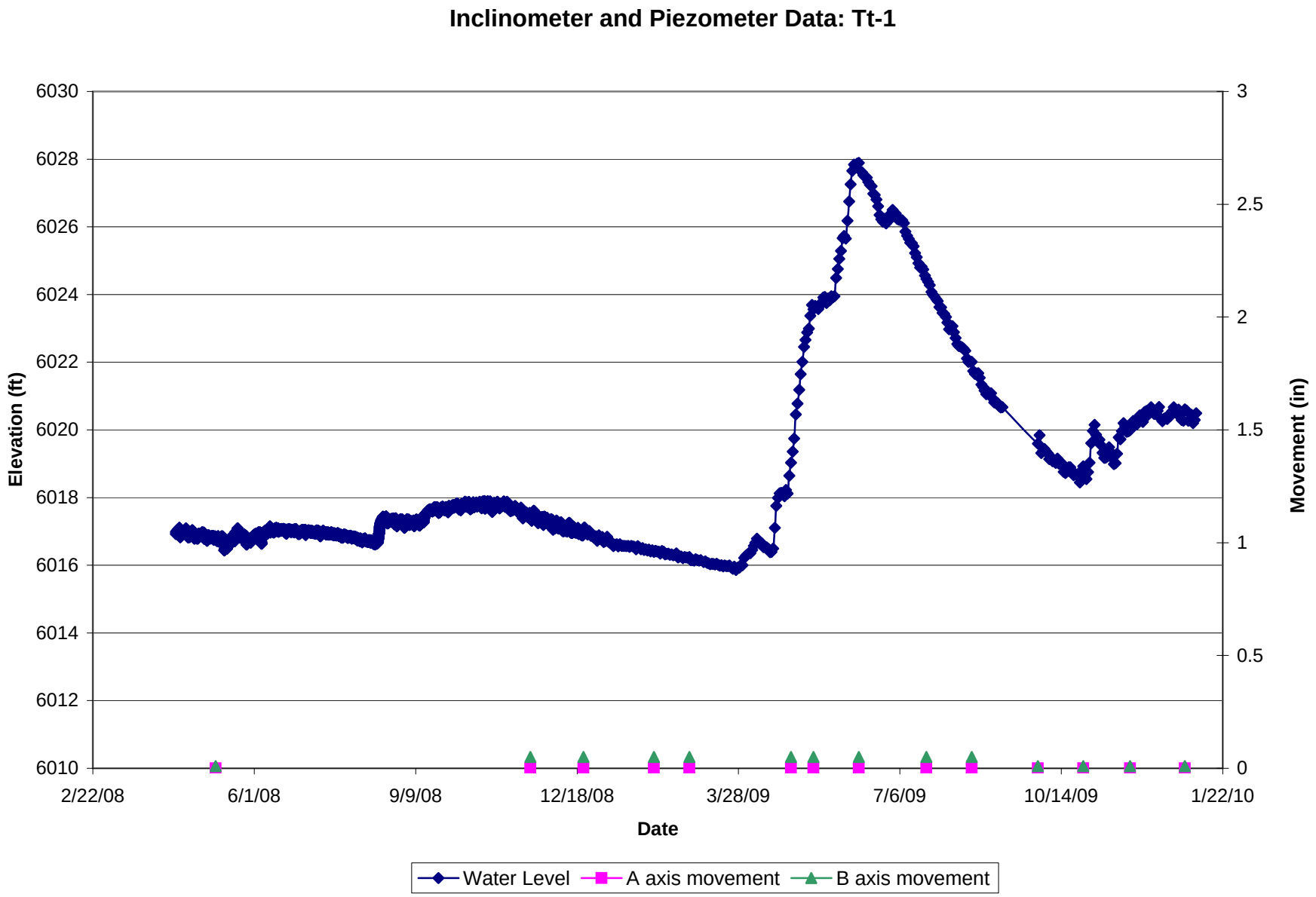
Attachment A
Inclinometer and Piezometer Graphs



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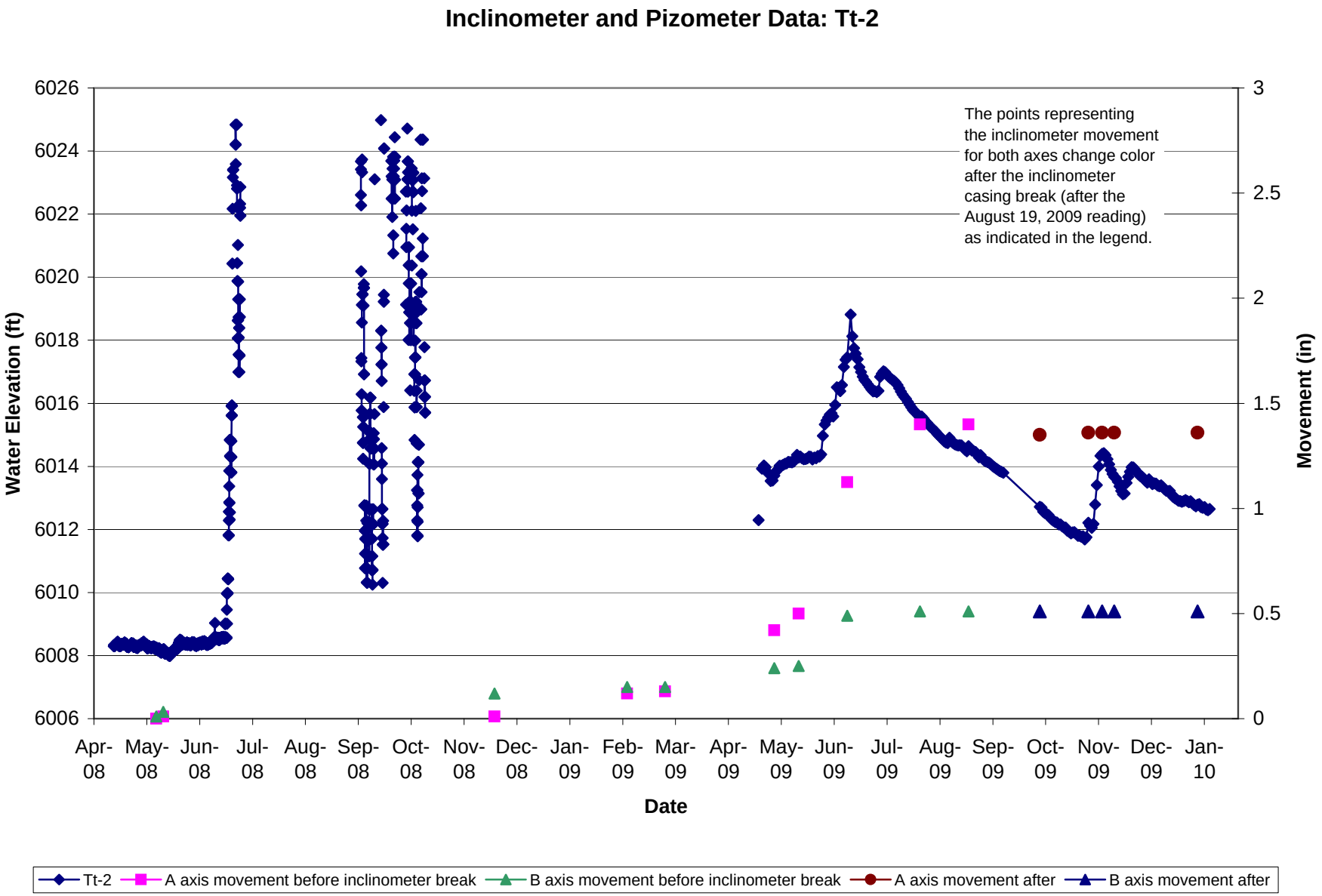

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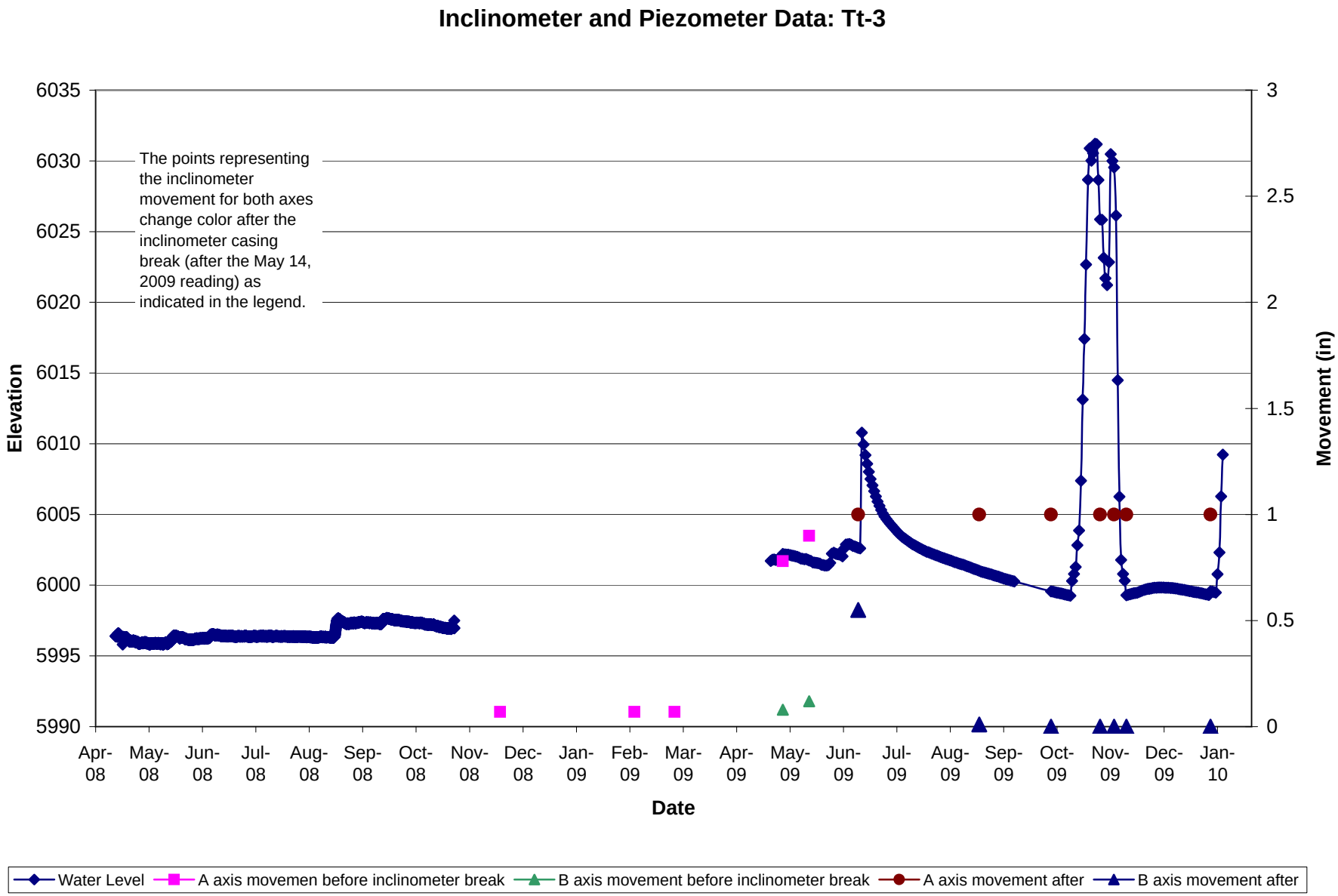

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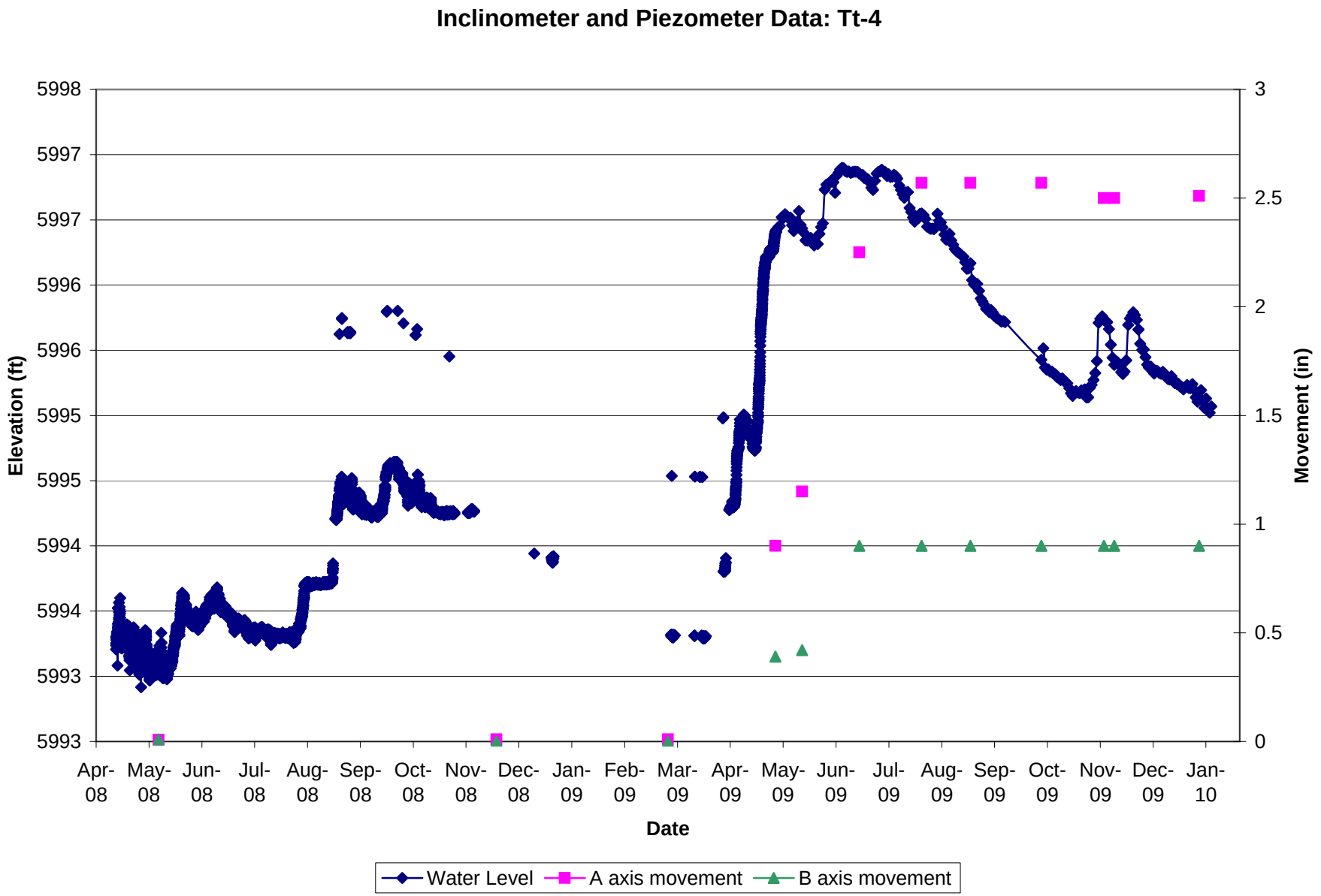

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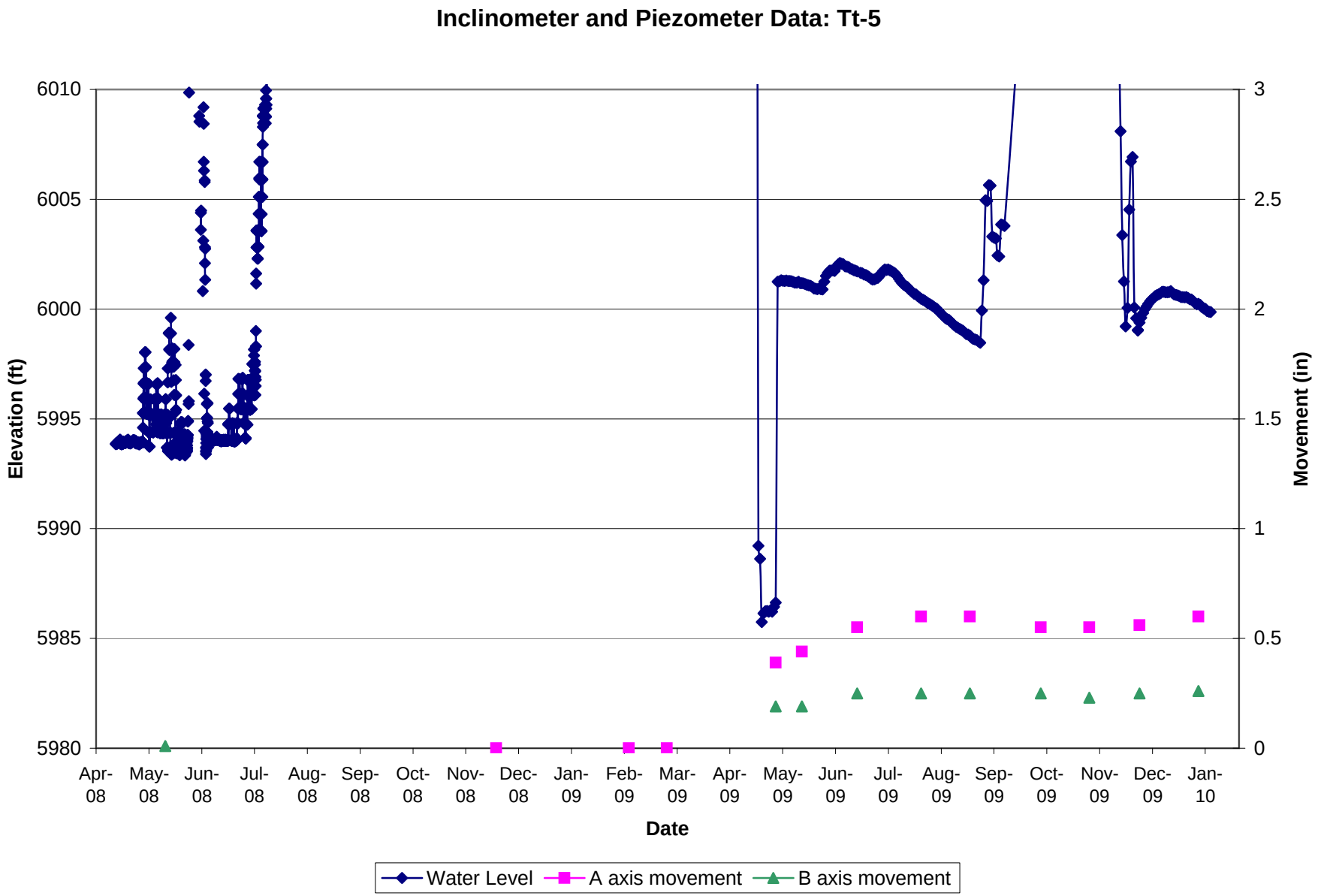

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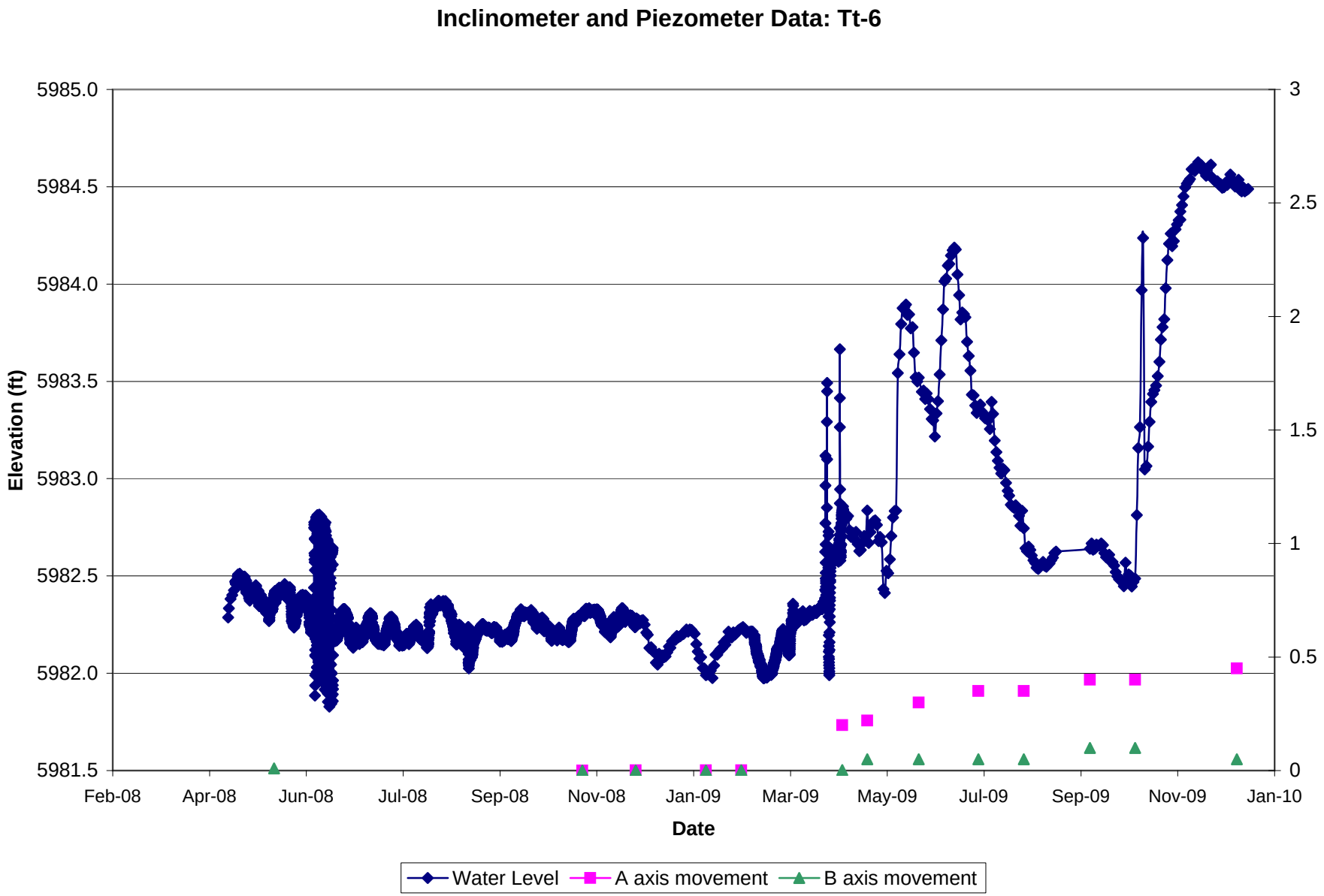
Inclinometer and Piezometer Data: Tt-6
5985.0
5984.5
5984.0
5983.5
5983.0
5982.5
5982.0
5981.5
Elevation (ft)
3
2.5
2
1.5
1
0.5
0
Feb-08
Apr-08
Jun-08
Jul-08
Sep-08
Nov-08
Jan-09
Mar-09
May-09
Jul-09
Sep-09
Nov-09
Jan-10
Date
Water Level
A axis movement
B axis movement

Figure A-6

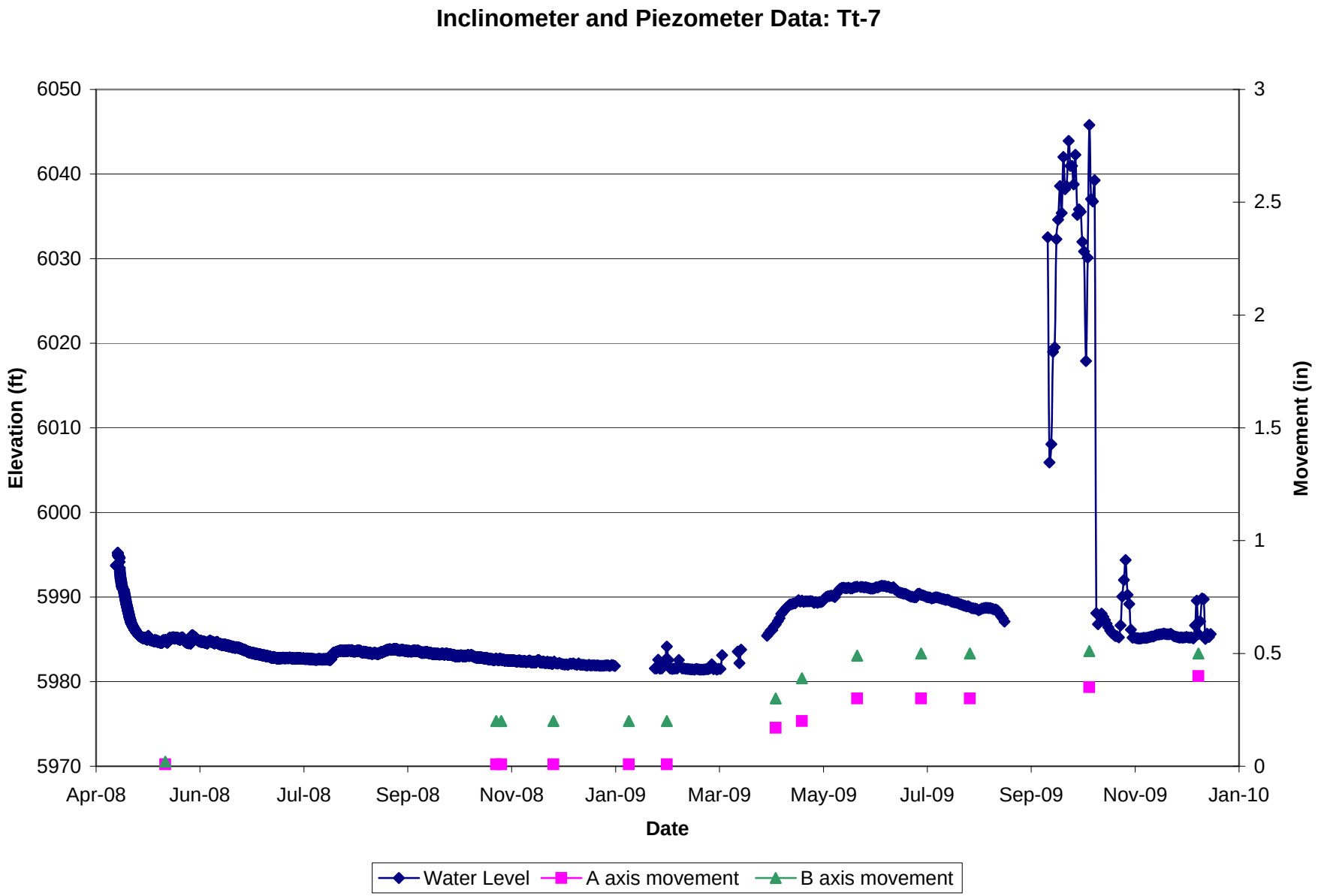

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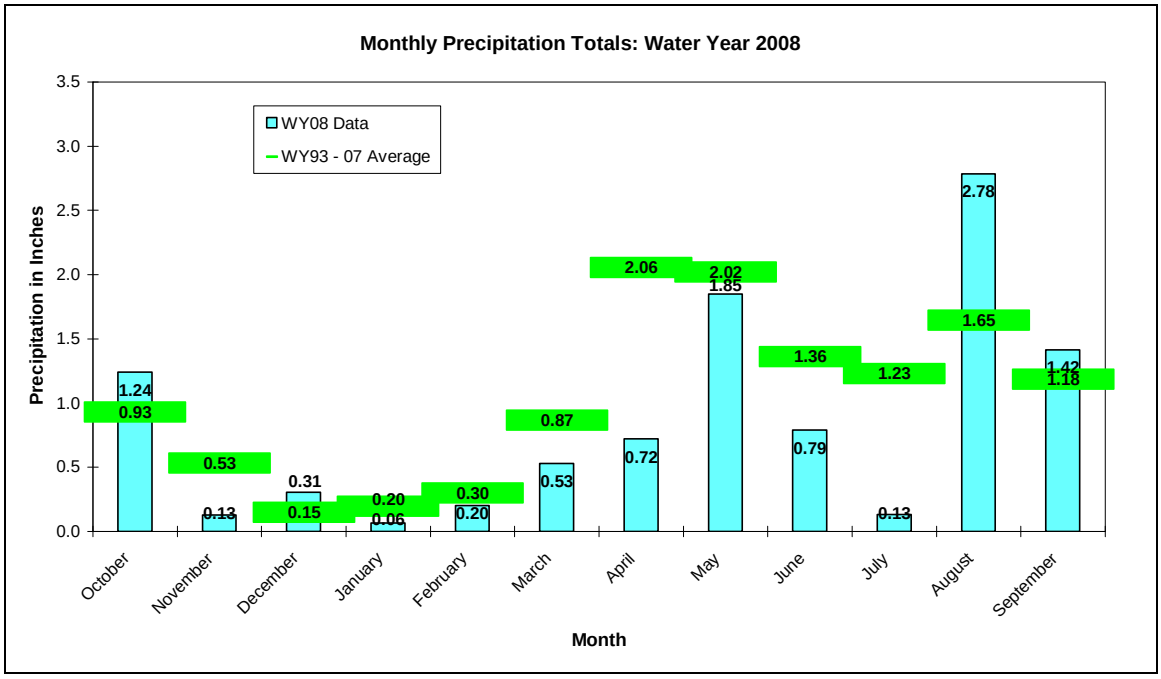
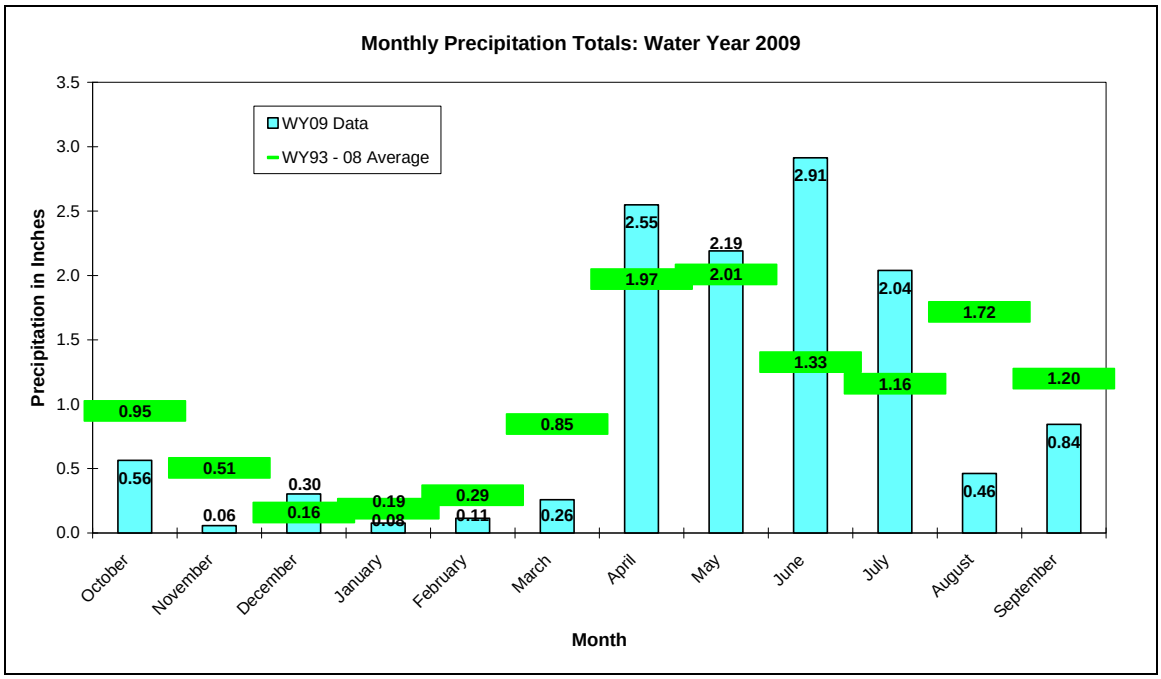
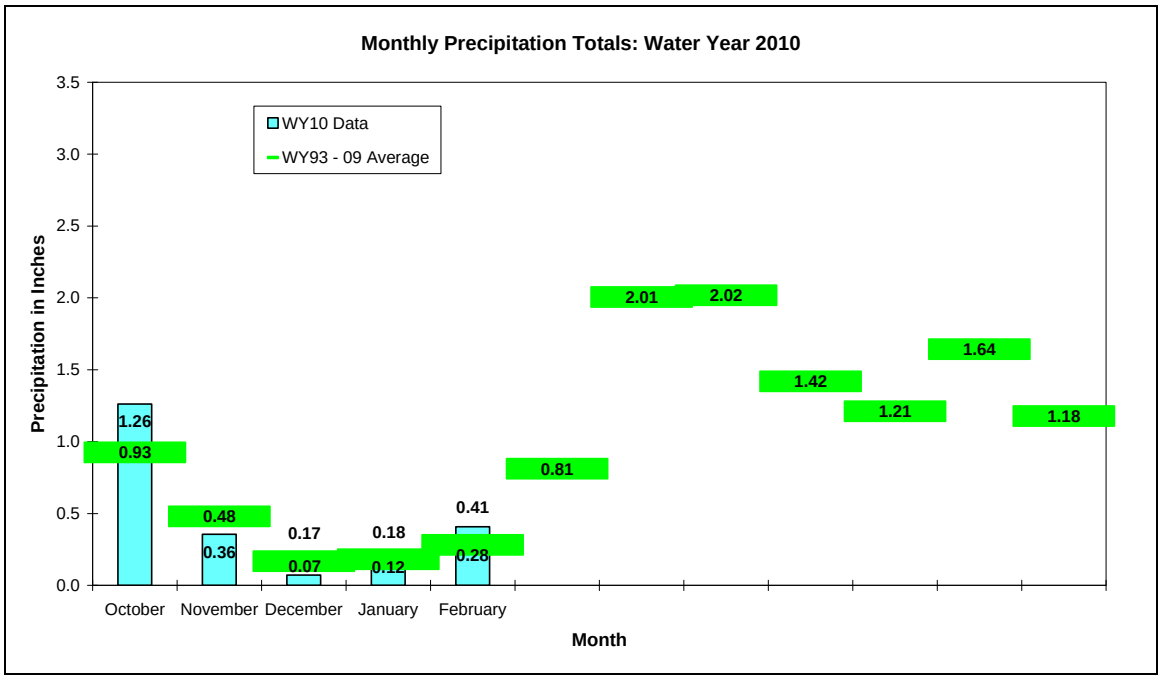
Figure A-7

Attachment B
Precipitation Data


Monthly Precipitation Totals: Water Year 2008
WY08 Data
WY93 - 07 Average
Precipitation in Inches
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1.24
0.93
0.13
0.53
0.31
0.15
0.20
0.06
0.30
0.20
0.53
0.87
0.72
2.06
1.85
2.02
0.79
1.36
0.13
1.23
2.78
1.65
1.42
1.18
October
November
December
January
February
March
April
May
June
July
August
September
Month


Monthly Precipitation Totals: Water Year 2009
WY09 Data
WY93 - 08 Average
Precipitation in Inches
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.95
0.56
0.51
0.06
0.30
0.16
0.19
0.08
0.29
0.11
0.85
0.26
2.55
1.97
2.19
2.01
2.91
1.33
2.04
1.16
1.72
0.46
1.20
0.84
October
November
December
January
February
March
April
May
June
July
August
September
Month


Monthly Precipitation Totals: Water Year 2010
WY10 Data
WY93 - 09 Average
Precipitation in Inches
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1.26
0.93
0.48
0.36
0.17
0.07
0.18
0.12
0.41
0.28
0.81
2.01
2.02
1.42
1.21
1.64
1.18
October
November
December
January
February
Month

Attachment C
Unfiltered Inclinometer and Piezometer Data

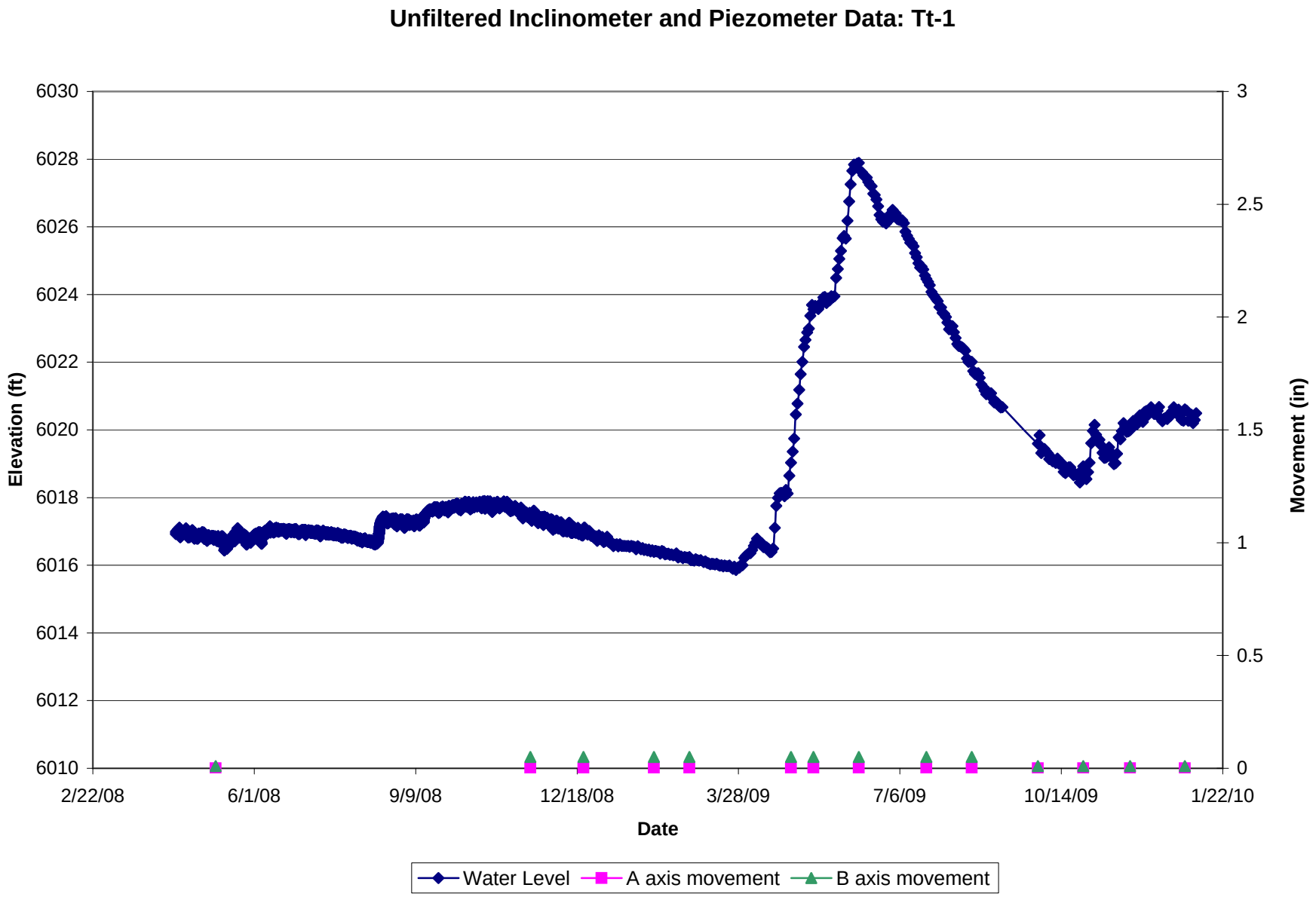


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Figure C-1

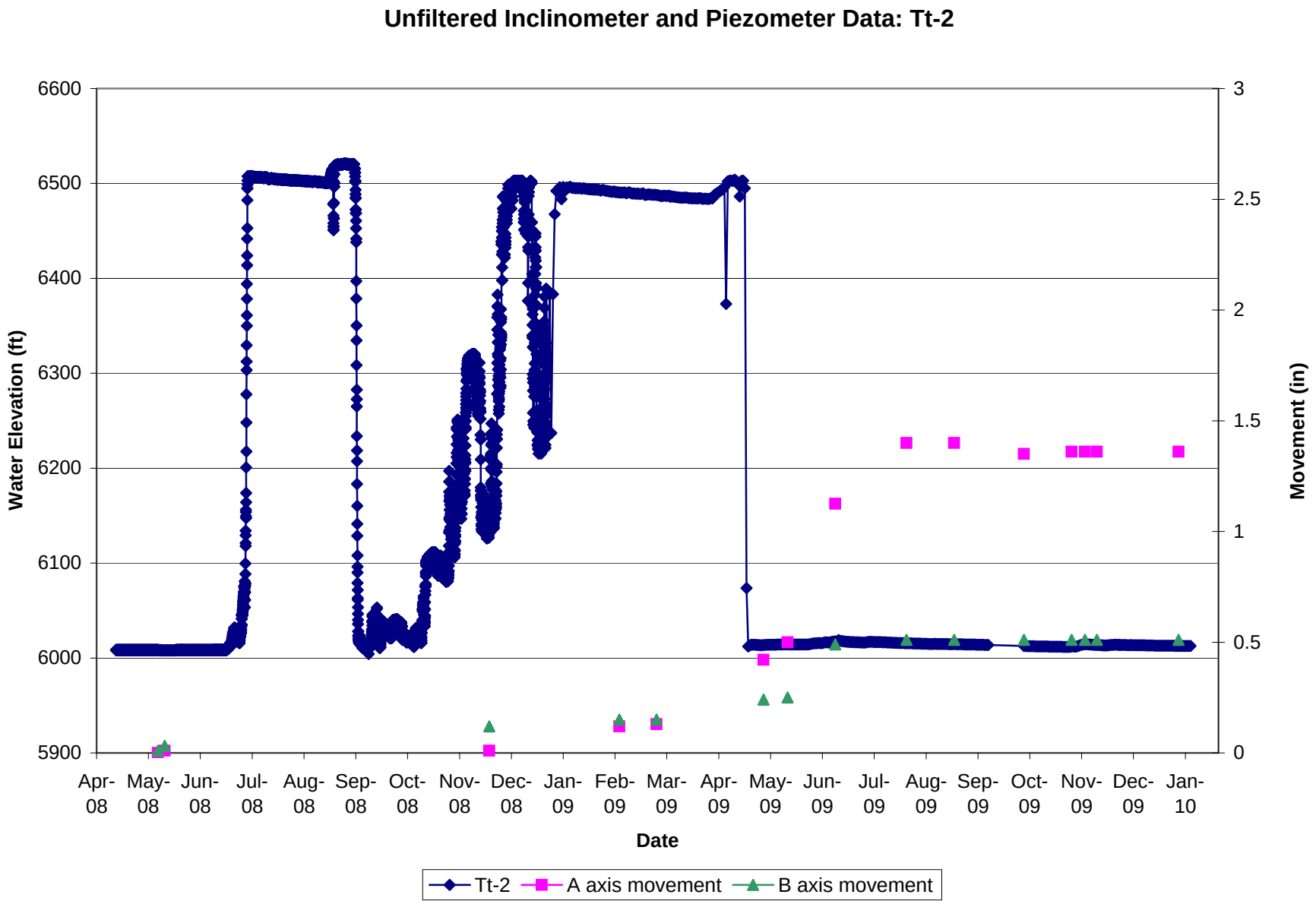

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Figure C-2

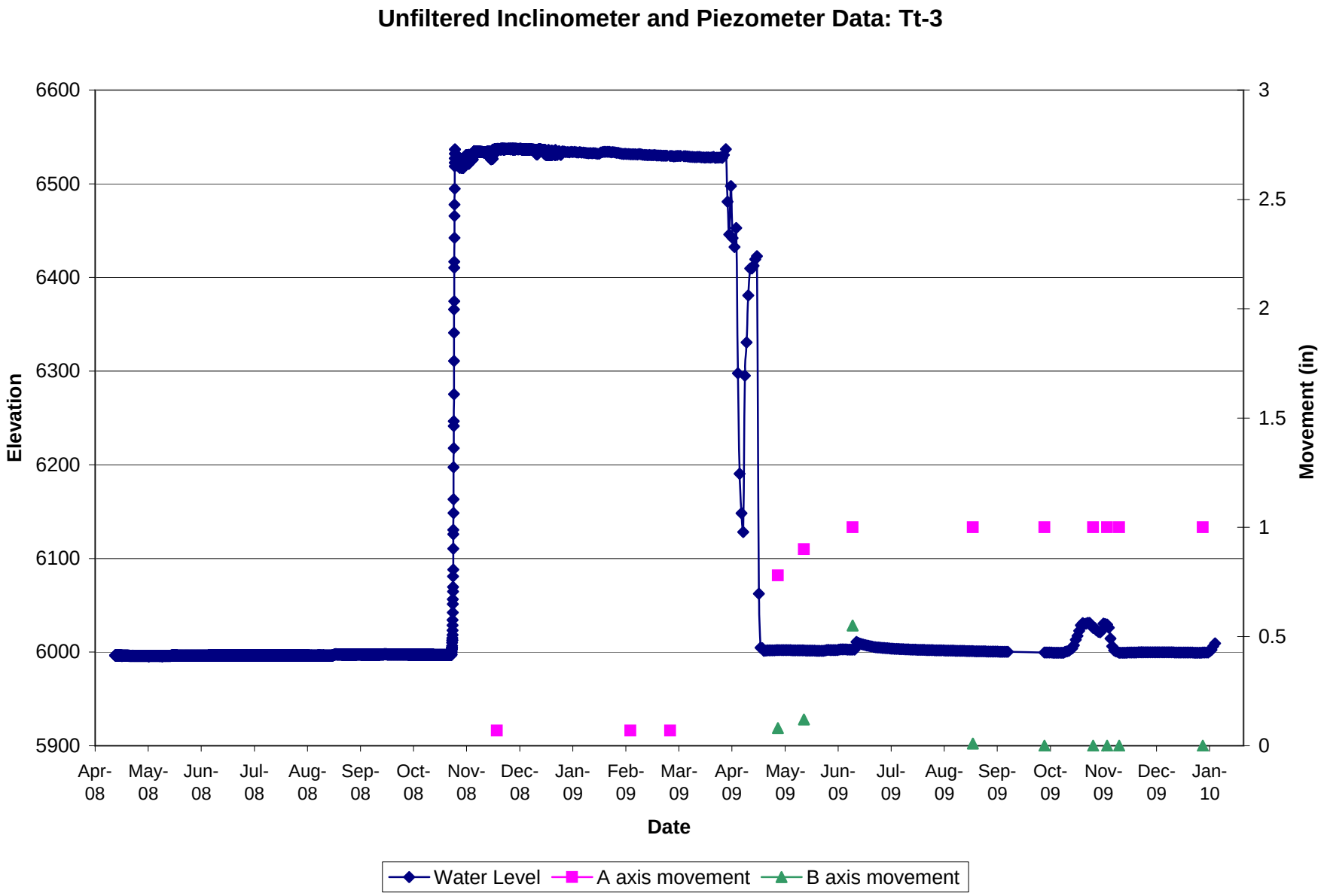

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Figure C-3

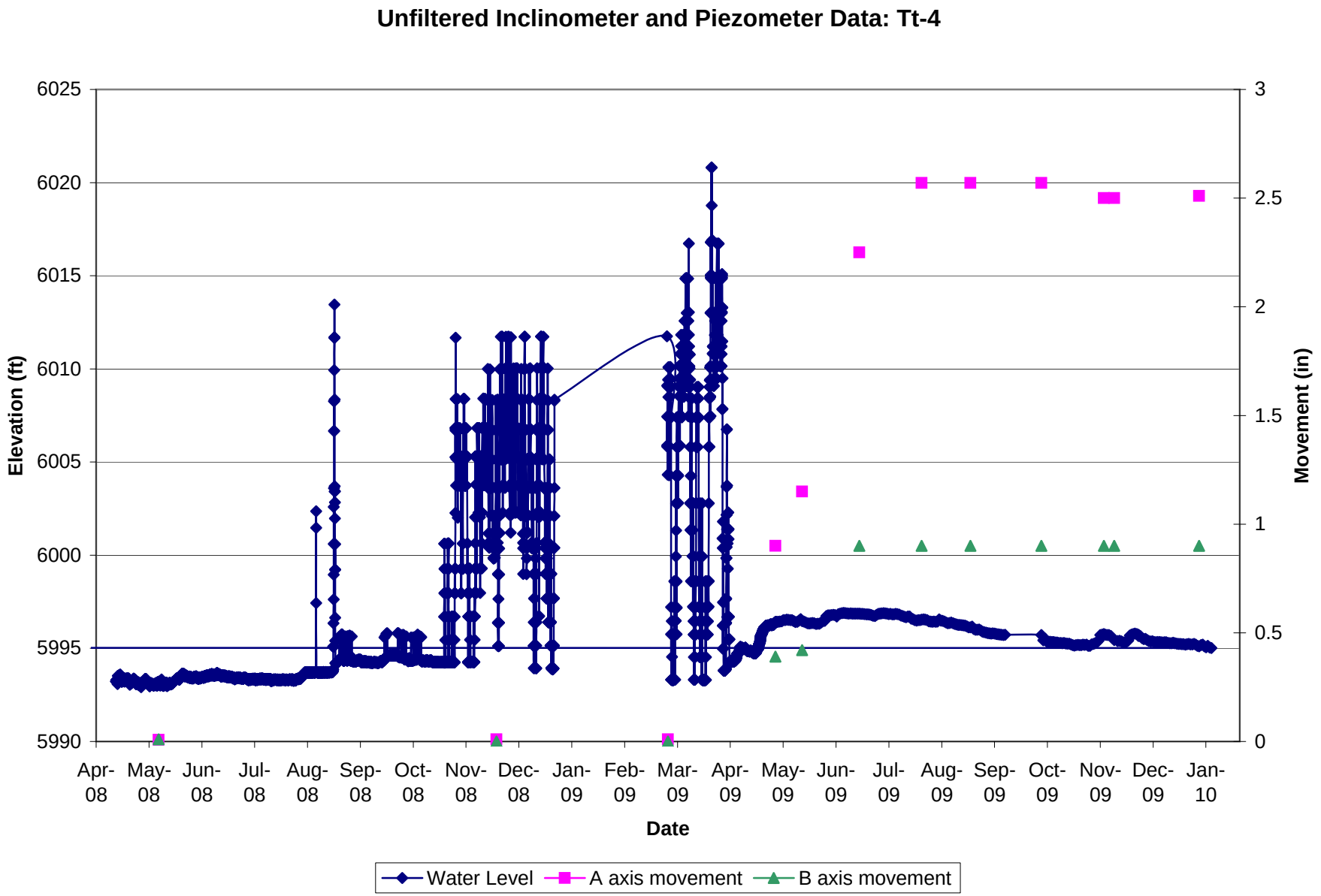

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Figure C-4

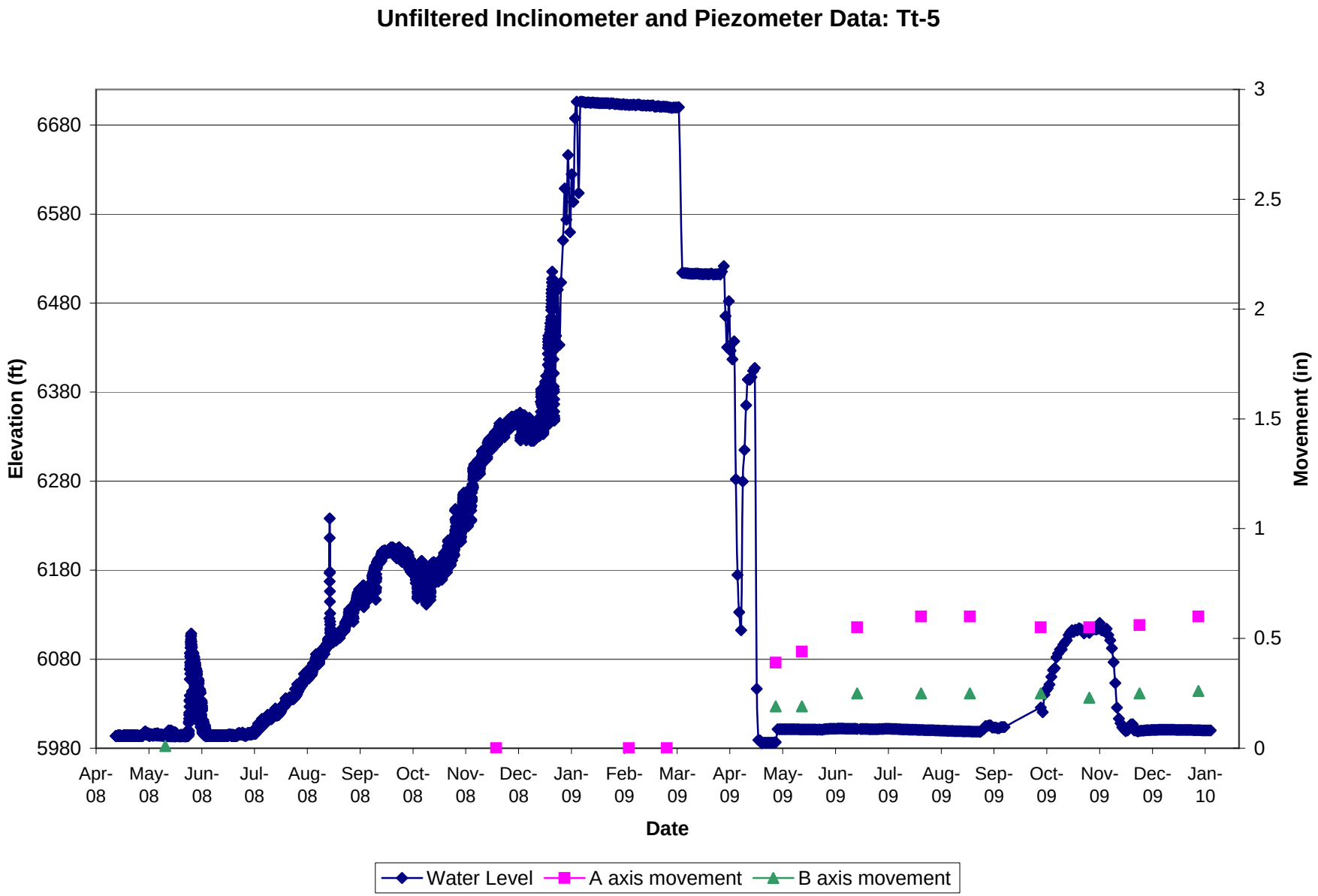

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Figure C-5

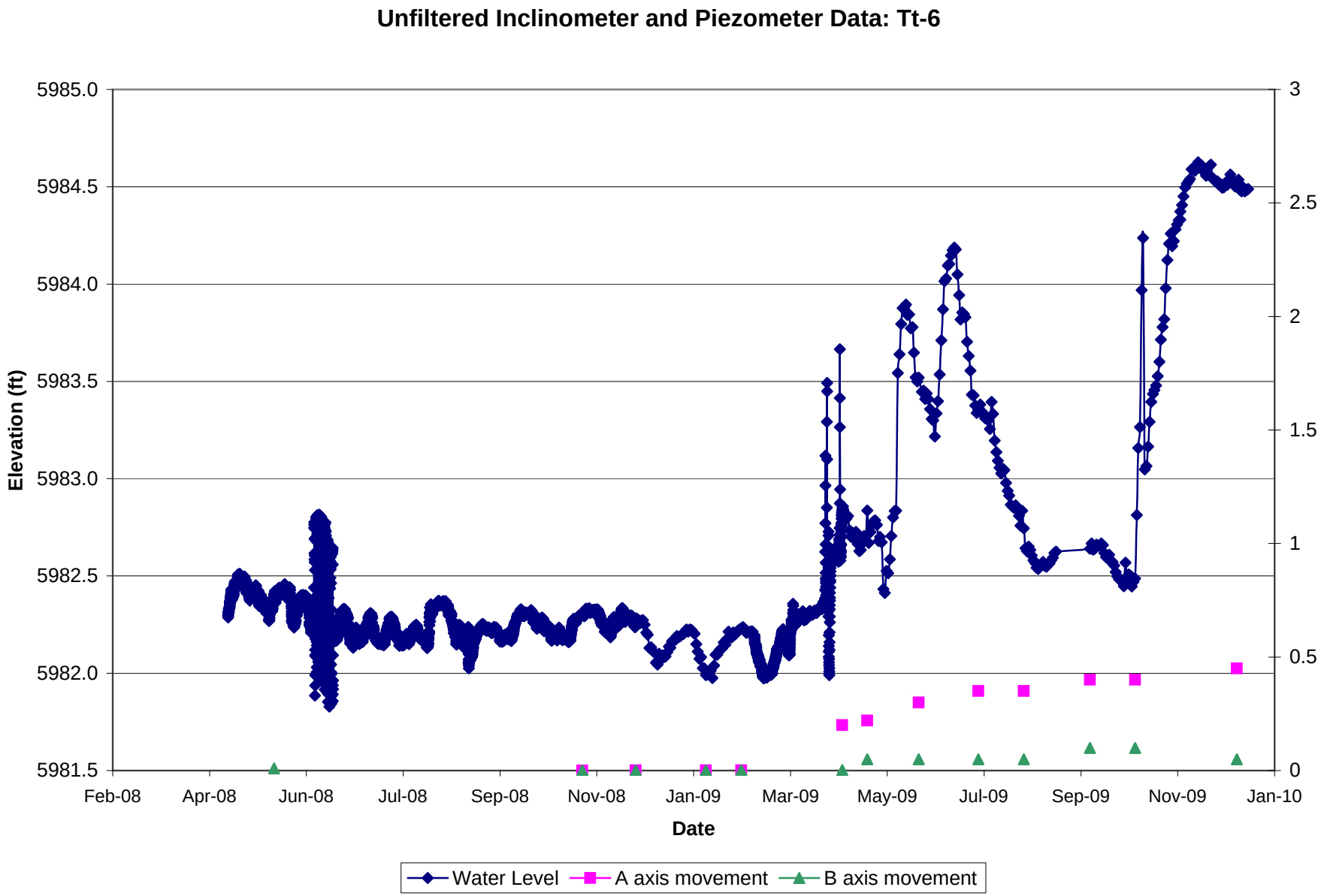

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Figure C-6

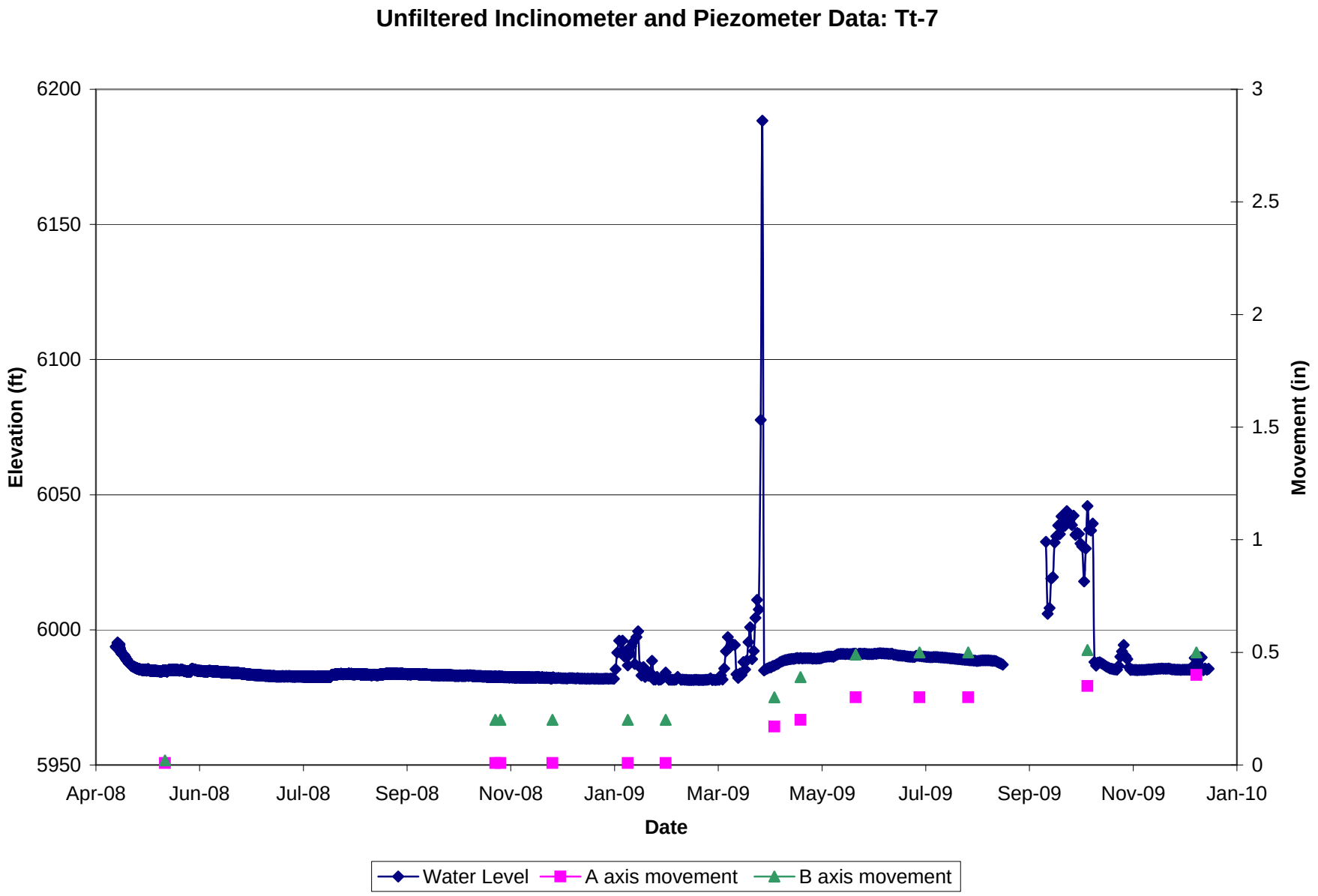

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Figure C-7

ROCKY FLATS SPPTS
GEOTECHNICAL INVESTIGATION REPORT

Jefferson County, Colorado

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October 8, 2009

TABLE OF CONTENTS

1.0 INTRODUCTION 1
2.0 CONDITIONS AT THE SPPTS 2
3.0 SPPTS CONSTRUCTION 4
4.0 GEOLOGY AND GROUNDWATER 5
5.0 FIELD INVESTIGATION 7
5.1 Site Visits 7
5.2 Exploratory Borings 7
6.0 LABORATORY TESTING 9
7.0 SUBSURFACE CONDITIONS 11
7.1 Aggregate Base Course 11
7.2 Man-Placed Clay Fill Material 11
7.3 Sandy Clay/Organic Layer 12
7.4 Sandy Gravel/Alluvium/Colluvium 12
7.5 Weathered Bedrock 13
7.6 Claystone Bedrock 13
7.7 Groundwater 13
8.0 CONCLUSIONS 15
9.0 RECOMMENDATIONS 17
9.1 Remove and Replace 17
9.2 Ground Improvement 17
9.3 Piles and Piers 18
10.0 FOUNDATION RECOMMENDATIONS 19
11.0 LIMITATIONS 21
12.0 REFERENCES 22

LIST OF TABLES

Table 1: Summary of Laboratory Test Results
Table 2: Consolidation Swell Test Results
Table 3: Water Level Measurements
Table 4: Factor of Safety for Uplift

LIST OF FIGURES

Figure 1: Rocky Flats Project Vicinity Map
Figure 2: Boring Locations
Figure 3: Cross Section Locations
Figure 4: Cross Section A-A
Figure 5: Cross Section B-B
Figure 6: Cross Section C-C

LIST OF APPENDICES

Appendix A: Borehole Logs
Appendix B: Laboratory Test Results
Appendix C: Geotechnical Calculations

1.0 INTRODUCTION

This report presents the results of a geotechnical investigation by Tetra Tech, Inc. to evaluate the recent, localized settlement at the Solar Ponds Plume Treatment System (SPPTS) located at the U.S. Department of Energy (DOE) Rocky Flats Site. Localized subsurface failures in the vicinity of the water storage sump at the treatment system resulted in sump leakage. The investigation was performed for S.M. Stoller Corporation (Stoller) as part of their DOE contract. Stoller is a Legacy Management contractor for the DOE and provides engineering, operations, and maintenance support from offices in Westminster and Grand Junction, Colorado.

The SPPTS and Rocky Flats are located 16 miles northwest of Denver in northern Jefferson County, Colorado. The general site location and the location of the SPPTS within Rocky Flats are shown on Figure 1.

This report includes a description of the existing site, facilities, and the distress that has occurred, discussion of the geologic and subsurface conditions, descriptions of Tetra Tech's field and laboratory investigations, analysis of the subsurface and geotechnical conditions, and recommendations for feasible mitigation alternatives for the SPPTS Phase II/III and IV facilities.

2.0 CONDITIONS AT THE SPPTS

The SPPTS is located on a north-facing hillside on the south side of North Walnut Creek and the North Walnut Creek Drainage. North Walnut Creek is an intermittent/perennial stream that flows from west to east through the area. Before construction of the SPPTS, extensive regrading had occurred in the area, according to Stoller personnel who have been involved in work at Rocky Flats for many years. The historical fill placement described by Stoller is consistent with geologic mapping by Shroba and Carrara (1996), which shows much of the area to be covered by "artificial fill."

The following history and historical description of site conditions were provided by Stoller. The natural stream channel may previously have been located as close as 20 feet north of the north edge of the original SPPTS treatment cells. During the late 1970s, the streambed was moved north to accommodate security upgrades, a 72-inch-diameter drain was installed to route water from areas west and southwest of the SPPTS to the new streambed, and the existing hillside at and around the SPPTS was constructed. A roughly two-mile network of French drains (the Interceptor Trench System, or ITS) was installed on this hillside to collect and route groundwater from the slope immediately north and east of the former Solar Evaporation Ponds to a sump and pump house (the Interceptor Trench Pump House, or ITPH) located in the North Walnut Creek valley bottom, from which the water was pumped to various locations over the subsequent years. The manner in which this work was performed, the construction practices that were used during backfilling of the previous stream channel, and the level of compaction during fill placement on the hillside are unknown. The ground surface in the area of the original SPPTS treatment cells, including the new Phase II and Phase III components, appears to have been raised by approximately 10 to 15 feet as a result of this work.

Additional disturbance occurred during construction of the original components of the SPPTS in 1999. Because of the depth of the treatment cell structure (approximately 28 feet, plus a 5-foot overexcavation and engineered fill) and associated groundwater intercept trench, a large excavation was required. That excavation likely included much of the ground on which the Phase II/III SPPTS facilities were later constructed. Stoller personnel who observed the construction of the trench have indicated that the excavation was quite large. However, the topographic surface that existed prior to construction of the SPPTS (i.e., after the first phase of regrades described above) was, in the immediate vicinity of the SPPTS, generally very similar to the current topography.

A third, less extensive but locally disruptive regrading effort occurred following installation of the SPPTS just prior to site closure in 2005, when the 72-inch drain was removed, the adjacent functional channel was constructed, and an estimated 2 to 3 feet of fill was placed over parts of the area generally west and northwest of the SPPTS concrete structure to provide a more even surface. The construction methods (in particular, compaction) and the condition of the fill, particularly that used to backfill the removed 72-inch drain, are not known. However, these regrading episodes included placement and compaction of deep fills that have significant potential to impact the Phase II and Phase III upgrades to the SPPTS. One early hypothesis explaining the settlement of the sump was that the backfilled drainage pipe excavation may have settled when loaded by the recently constructed Phase II and III SPPTS facilities, presumably due to inadequate compaction of the associated backfill. The nature and composition of the fill that was encountered in this investigation is described in Sections 4 and 5 of this report.

The current ground surface elevation at the SPPTS is approximately 5,900 feet above mean sea level. The SPPTS treatment facilities occupy approximately 6,000 square feet of land on the hillside above North Walnut Creek. The SPPTS, the approximate location and orientation of the previous 72-inch diameter drain pipe, and the locations of exploratory borings drilled as part of this investigation are shown on Figure 2.

3.0 SPPTS CONSTRUCTION

The SPPTS was constructed in 1999 to treat elevated levels of uranium and nitrate in subsurface water. It includes a groundwater interceptor trench that is approximately 1,100 feet long; an associated manhole; a two-cell, rectangular concrete treatment vault; and a discharge gallery. The groundwater collection trench is immediately upgradient from the treatment cells. The concrete structure that includes the two treatment cells is approximately 46 feet long by 20 feet wide by 28 feet deep, and is believed to have been constructed on native soils or bedrock and 5 feet of engineered fill. The system was upgraded via the addition of a collection well and pump in 2002.

The treatment system previously exhibited no obvious sign of significant physical distress, such as settling or subsidence (Stoller, 2009). However, shortly after Rocky Flats closed and was transferred to the Office of Legacy Management (LM), the concrete structure was excavated to determine the cause of reduced treatment that had been observed since mid-2005. It was found that several of the subsurface valves had malfunctioned, the penetrations through the concrete structure were not adequately sealed, and piping within the first cell had broken. No surface expression of these conditions was evident. Repairs were made and the system resumed normal operation.

Because of the costs and difficulty in performing these repairs, which were generally similar in magnitude to what would be required to change the treatment media, the decision was made to evaluate whether the system could be upgraded to allow maintenance actions to be performed more easily and inexpensively. In late 2008, the first of four phases of upgrades to the system was completed. The Phase I upgrades comprise additional collection and discharge infrastructure in the valley to the north and east.

In May 2009, construction of the Phase II/III upgrades to the SPPTS was completed. The planned (as opposed to as-built) Phase II/III SPPTS facilities layout is shown on Figure 2. Phase II includes a zero-valent iron (ZVI) cell, which is intended to be a long-term component of the treatment system, and Phase III is the pilot-scale nitrate treatment cells (Cells A and B). The Phase III components may be interim facilities or longer-term components of the ultimate treatment system, depending on system performance and various requirements. The SPIN vault supports the entire system, while the metering vault, carbon storage vault, water storage sump, and associated piping and electrical facilities support the Phase II and Phase III structures (Stoller, 2009). Phase IV will be a full-scale nitrate biotreatment facility and is scheduled to be designed and constructed in fiscal year (FY) 2010.

Operation of the Phase II/III SPPTS facilities was initiated on May 28, 2009. On July 4, parts of the system automatically shut down due to unexpected conditions, most notably a sudden drop in the water level in the water storage sump that was unrelated to groundwater availability. Investigations conducted by Stoller in early July revealed that leakage had occurred from the water storage sump, and that a cavity had developed in the shallow subsurface adjacent to the sump. It was found that the water storage sump had settled in an irregular manner, causing the watertight seal between sections of the pre-cast concrete structure to separate and leak.

A geotechnical investigation was designed to investigate the characteristics of the subsoils in accessible locations adjacent to the Phase II/III SPPTS facilities, recommend mitigative measures to reduce the risk of future, similar distress prior to Phase IV design and construction, and provide long-term fixes as necessary for Phase II and III components.

4.0 GEOLOGY AND GROUNDWATER

The geology of the SPPTS site was evaluated by reviewing geologic mapping and reports of the area, site visits by Tetra Tech staff, and by examination of cuttings, bulk samples, and split barrel samples recovered from six exploratory borings drilled at the site on July 27 through 29, 2009. Comprehensive geologic investigations of Rocky Flats and the surrounding area have been completed by others, including a report by EG&G Rocky Flats, Inc. titled *Geologic Characterization Report for the Rocky Flats Environmental Technology Site*, dated March 1995. Tetra Tech examined the EG&G report, a map by Shroba and Carrara titled *Surficial Geologic Map of the Rocky Flats Environmental Technology Site and Vicinity, Jefferson and Boulder Counties, Colorado*, dated 1996; and a map by Colton and Holligan titled *Photo Interpretive Map Showing Areas Underlain by Landslide Deposits and Areas Susceptible to Landsliding in the Louisville Quadrangle, Boulder and Jefferson Counties, Colorado*, dated 1977. Those documents were reviewed for detailed geologic information regarding the SPPTS site and the surrounding area. The following discussion of local geology is presented to provide background specific to the SPPTS site and this investigation.

The Rocky Flats Site is located in a structurally stable area (EG&G, 1995) between the Front Range of the Rocky Mountains to the west and the Denver Basin to the east. The surface of the area is a broad pediment that is covered by a thin mantle of silty topsoil over clay, sand, and gravel deposits of the Quaternary-age Rocky Flats Alluvium. More recent alluvial deposits exist locally and in stream channels and valleys. The Rocky Flats Alluvium is described as reddish-brown, poorly sorted, coarse clayey sand with varying concentrations of pebble and cobble clasts derived from erosion of the mountains to the west. In the vicinity of Rocky Flats, where it caps the flat pediment surface, the thickness is reported by EG&G to average 10 to 25 feet.

The Rocky Flats Alluvium rests unconformably on sedimentary bedrock, and generally provides for infiltration of surface water and recharge (EG&G, 1995). In the immediate vicinity of the SPPTS, infiltration is strongly affected by the extensive series of French drains that forms the ITS, as well as the SPPTS groundwater collection trench. The latter trench is known to extend into the claystone bedrock and intercepts segments of the ITS, receiving the water flowing within those segments. It is assumed that this trench is also effectively intercepting perched groundwater flow from upgradient sources such as the Rocky Flats Alluvium and colluvial and alluvial surface deposits. It is possible that some component of the general groundwater flow pattern to the west of the groundwater collection system has found a preferential pathway in the backfill for the removed 72-inch drainage pipeline. No evidence of such a scenario was encountered during the recent field investigation; however, a localized area adjacent to and south and west of the SPPTS had vegetation consistent with that frequently seen in areas of shallow groundwater. In addition, standing water associated with precipitation events was observed at the ground surface in this area through the wetter spring months of 2009, and a small wetland area fed by shallow groundwater has developed nearby to the west. (Note that seepage on the north-facing hillside southwest of the SPPTS is commonly observed during the spring months, and the heavier precipitation in 2009 led to wet conditions in the flat area west of the SPPTS.)

The bedrock geology consists of comparatively flat-lying claystone and sandstone deposits of the Upper Cretaceous Arapahoe and Laramie Formations. The Arapahoe Formation is a fluvial deposit that locally includes a discontinuous sandstone or pebble conglomerate layer at the base and greenish claystone and siltstone overbank deposits. The thickness has been mapped at 0 to 50 feet locally (EG&G, 1995).

The Upper Laramie Formation is described as a 300- to 500-foot-thick sequence of gray and yellowish-orange kaolinitic claystones with ironstone nodules, and dark-gray to black, carbonaceous claystones, discontinuous coal beds, and lenticular sandstones (EG&G, 1995). Compared to the Arapahoe Formation, the Laramie Formation generally contains more claystone, which tends to weather into clay. Conditions suggesting the presence of expansive clays have been encountered during historical development and reclamation at the Rocky Flats Site (Stoller, 2009).

Tetra Tech investigations at this site and at the Original Landfill (OLF) located south of the SPPTS (Tetra Tech, 2008), support the published literature and geologic mapping.

The hillside underlying the SPPTS is mapped by Colton and Holligan (1977) as a landslide deposit that consists of “masses of earth and rock that have moved downslope as earthflows and slumps.” (Note that the date of this reference suggests this description is of the “original” hillside that was present before the main regrading effort performed in the area in the late 1970s-1980, which relocated North Walnut Creek. Therefore, in addition to the methods of construction and compaction used to create this artificial hillside, the stability of the original materials beneath the regraded hillside is questionable.) Colton and Holligan (1977) explain that these landslide deposits have formed along the margins of gravel-capped mesas (such as those visible on the hillside north of the SPPTS) where springs and seeps have saturated the underlying clayey parts of the Laramie Formation. The landslide deposits have a history of sliding; it is not known if they are actively moving at this time or have ceased movement sometime in the past. However, no evidence of larger-scale, catastrophic slope instability or movement was observed at the SPPTS treatment cells. Further, no occurrences of slope instability or landsliding at the SPPTS have been reported by Stoller personnel familiar with the site and its history. Evidence of slope movement has been observed on the hillside immediately east of the SPPTS treatment cells, downstream and on north- and south-facing slopes near the SPPTS discharge gallery, and on a northeast-facing hillside underlain by the easternmost portion of the ITS. It is likely that the potential for landsliding and/or soil creep in the vicinity of the SPPTS has been reduced by the installation of the groundwater collection systems described above, but these indications of ongoing movement suggest these systems do not completely eliminate the potential for larger-scale slope movement.

5.0 FIELD INVESTIGATION

In an effort to evaluate the cause of the subsurface failure that caused the water storage sump to settle and leak in early July, Tetra Tech conducted field investigations that included site visits on July 16 and 27, and August 4, 2009. Six exploratory borings were drilled between July 27 through 29, 2009. During drilling, soil and bedrock samples were collected, cuttings were logged, and water levels were measured. Penetration resistance measurements were recorded during sampling. The elements of the field investigation are described in more detail below.

5.1 Site Visits

A Tetra Tech senior geotechnical engineer visited the SPPTS site on July 16, July 27, and August 4, 2009, to observe site characteristics, plan the geotechnical investigation, and observe backfill operations in the vicinity of the water storage sump. Stoller personnel provided required safety training and accompanied Tetra Tech staff while on site. Borings were drilled at accessible locations in the field, as close to the planned locations as practical. Several of the planned boring locations were revised slightly based on field conditions and to improve access for the drill rig. With one exception, the actual locations were surveyed by a Stoller subcontractor; the location of boring Tt-3 was not surveyed because this area was regraded during system repair efforts.

At the time of the field investigation, the water storage sump had been removed and an irregularly shaped excavation existed between the ZVI cell and the carbon storage vault. A slight depression in the ground surface was apparent immediately south of Cell B, although no cracking was apparent at the depression. Slight, irregular but generally linear-shaped swales were visible on the ground surface both east and north of the SPPTS treatment structures. These surface irregularities may be associated with fill settlement above existing pipelines, or with general fill settlement associated with one or more of the episodes of construction and/or historical grading operations that were described above, or may represent the as-built topography (i.e., having no relationship to any settlement).

5.2 Exploratory Borings

Six borings (Tt-1 through Tt-6) were drilled at the locations shown on Figure 2 on July 28 and July 29, 2009. At the time of drilling, the sump had been removed, leaving an approximately 10-foot-deep by 12-foot-wide excavation, sloped from the west. The objectives of the drilling program were to obtain comparatively high-quality and undisturbed samples for laboratory testing, determine depth to water, look for weak zones within the fill, and determine the depth to bedrock.

A track-mounted, CME 55 drill rig was used to drill the six borings. Depths ranged from 31 to 36 feet. Each hole was terminated in comparatively unweathered bedrock. Bulk samples were collected by filling a bag or bucket with auger cuttings from a certain depth interval in the hole. A “California-style” split-barrel sampler was driven into the substrata at depths of 2 and 5 feet, then at approximately 5-foot intervals to obtain brass liner samples for laboratory testing. The sampler was driven into the soil using a 140-pound weight repeatedly dropped 30 inches by an automatic “hammer” device on the drill rig. The number of blows required to drive the sampler 12 inches is recorded on the borehole logs (see Appendix A) as the penetration resistance value (N). After drilling, the boreholes were backfilled using the auger cuttings from the hole. In holes where water was encountered (three of the six borings), the water level was initially

measured, then the borehole was left open for up to one day to obtain a second water level measurement before backfilling.

Water was encountered in boring Tt-2 at 22 feet at the time of drilling. When checked 26 hours later, the level of water in the boring had risen to 20 feet below the ground surface. In boring Tt-4 water was encountered at 24 feet. Approximately 4 hours later water was measured at a depth of 25 feet. In boring Tt-6 water was encountered at a depth of 7 feet during drilling, and had risen to a depth of 6 feet when checked approximately 1.5 hours later. According to Stoller, this water level does not correspond to the water level in a “riser pipe” located adjacent to the concrete structure and about 10 feet southeast of Tt-6.

Tetra Tech personnel observed drilling and sampling operations, collected samples, and logged boring lithologies. The Tetra Tech geotechnical engineer was present at the SPPTS periodically during the operations to observe conditions and monitor the progress. Stoller personnel provided health and safety oversight during the drilling and sampling operations.

6.0 LABORATORY TESTING

During drilling, representative bulk samples of the soils encountered were collected by Tetra Tech. "California-style" split-barrel samples were also collected, examined, and logged by Tetra Tech as described above. Geotechnical laboratory testing was performed in Tetra Tech's Fort Collins, Colorado, and Billings, Montana, laboratories. Select samples were tested by Stewart Environmental Consultants, Inc. to determine the amount of water-soluble sulfates and the organic content of the soils. Appendix B provides the laboratory test results.

The bulk and split-barrel samples were arranged according to depth and relative location, and visually classified and compared. Suitable, representative samples of each material sampled were selected for testing of in-situ physical properties (natural water content and dry density) and index testing (particle size analyses, Atterberg limits, and Unified Soil Classification system (USCS). Samples were also described according to the Munsel Color Chart method.

Physical properties, in general, indicate the state of the soil in the ground and are useful for comparison of more dense versus less dense materials, saturated versus unsaturated conditions, and so forth. Index properties are used to classify soils into groups that tend to behave in similar ways, such as clays, sands, and gravels.

Strength testing is used in conjunction with N values (blow counts) to provide an estimate of the relative strength of the soils and the suitability of each for engineering purposes such as support of foundations, excavation slopes, and lateral earth pressures. Unconfined compressive strength tests, direct shear tests, and N values were used in this investigation to identify the bearing capacity and other design criteria needed to specify remedial foundation design methods for the SPPTS structures.

Consolidation/swell tests were conducted to determine the volume change behavior of samples of the fill and bedrock when they were wetted after application of a load similar to overburden pressure. This test can be used to determine short- and long-term settlement, consolidation, or swell behavior of the soils and bedrock.

In most cases, samples observed to be representative of specific soil types were selected and tested rather than performing similar tests on all the samples. In other cases, notably water-soluble sulfate concentration and total organic content, the samples that were tested represented the only samples in which evidence of the properties tested was visible. In some cases, such as the samples selected for consolidation/swell testing, direct shear testing, and unconfined compressive strength testing, engineering judgment was used to select suitable samples that would meet the requirements of the specific test procedure and would be least likely to give unreliable results.

Bulk samples of the SPPTS site fill soil and the aggregate base course were tested according to Standard Proctor methods so that the relative compaction of the in-place fill could be estimated. The results of laboratory testing are presented in Table 1. "Typical" ranges of test results for similar soils are also shown for comparison purposes.

Descriptions of the soils and their properties are provided in the following section of this report.

Table 1. Summary of Geotechnical Laboratory Test Results for Borehole Samples – Rocky Flats SPPTS

Boring No.	Sample Depth[1] (ft)	Sample Type[2]	Water Content (%)	Sat.[3] (%)	Dry Density (pcf)	Material Type	Munsell Color	USCS Soil Class	Atterberg Limits[4] LL/PL/PI (%)	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Total Organic Content (%)	Soluble Sulfates (ppm)	Max. Dry Unit Weight[5] (pcf)	Opt.[5] Water Content (%)	UCS[6] (psf)	Direct Shear[6] (C/Φ) (psf/deg.)	Consolidation/Swell Test[7] Inundation Pressure (psf)	Collapse or Swell (%)	Swell Pressure (psf)
Tt-1	2.75	CA	16.1	91	114.2	Clay Fill	2.5Y 5/2										537 / 21			
	5.75	CA	22.8	92	101.0	Clay Fill	2.5Y 4/4											500	1.6	3,325
	10.75	CA	15.5	70	105.3	Clay Fill	2.5Y 4/2									4,106				
	16.25	CA	21.4	95	104.7	Clay Fill	5Y 7/2											1,000	0.7	3,381
	21.25	CA	22.8	94	101.8	W. Claystone	2.5Y 5/4													
Tt-2	6.25	CA	15.4	71	106.4	Clay Fill	2.5Y 4/3													
	16.25	CA	23.1	80	94.7	Clay Fill	2.5Y 5/3										411 / 29			
	19 – 21	Bulk				Dark Clay	10YR 3/1	CL	47 / 16 / 31		63	5.5								
	21.25	CA	15.3	90	115.4	Dark Clay	10YR 3/2	CL	44 / 15 / 29	88	62							1,500	0.4	3,054
	26.25	CA	5.8	58	132.8	Sandy Gravel	10YR 5/3	GW-GM	Non-plastic	50	11									
	35.75	CA	14.5	98	120.2	Claystone	2.5Y 5/3	CH	52 / 17 / 35		99									
Tt-3	3.25	CA	18.2	89	108.5	Clay Fill	2.5Y 4/3													
	11.25	CA	18.5	94	109.9	Clay Fill	2.5Y 6/4	CH	58 / 19 / 39	100	96									
	35.75	CA	16.3	62	98.7	Claystone	2.5Y 4/1									5,544				
Tt-4	3.25	CA	13.9	81	115.3	Clay Fill	2.5Y 5/2						102							
	6.25	CA	18.6	86	106.3	Clay Fill	2.5Y 4/1									6,029				
	11.25	CA	19.5	88	105.6	Clay Fill	2.5Y 4/1	CH	59 / 20 / 39		99									
	21.25	CA				Clay Fill	7.5YR 4/4					4.0								
	31.25	CA	20.0	99	108.9	Claystone	2.5Y 4/1											2,000	2.5	12,675
Tt-5	3.25	CA	17.0	88	110.8	Clay Fill	10YR 5/2									4,404				
	5 – 15	Bulk				Clay Fill	2.5Y 5/3	CH	62 / 16 / 46	97	83			104.8	18.3					
	11.25	CA	21.2	84	100.2	Clay Fill	2.5Y 5/2													
	26.25	CA	21.9	97	104.6	W. Claystone	2.5Y 5/4						157							
Tt-6	2 – 5	Bulk				Base Course	7.5YR 4/3	SM	Non-plastic	66	17			134.0	8.2					
	6.25	CA	8.7	61	121.6	Base Course	10YR 3/6	SM	Non-plastic	70	20									
	11.25	CA	23.9	102	103.2	Clay Fill	2.5Y 4/3											500	0.6	2,074
	16.25	CA	20.9	96	106.1	Clay Fill										1,936				
	35.75	CA	14.8	88	115.9	Claystone	10YR 4/1													
Expected Range of Parameters			12 – 25	50-100	90 – 115	Clay	-	CL – CH	PI = 10- 60	70 – 100	50 – 100	≤ 5	< 1,000	100 – 115	16 – 20	1-8,000	0-1,000/14-30	-	0 – 12	0 - 36,000
Expected Range of Parameters			5 – 12	30-100	115 -130	Gravelly Sand	-	SM	Non-plastic	51 – 100	0 – 30	NA	< 1,000	120 – 135	7 – 9	-	-	-	-	-
Expected Range of Parameters			1 – 8	20-100	125 -140	Sandy Gravel	-	GW-GM	Non-plastic	0 – 50	0 – 30	NA	< 1,000	130 – 140	5 – 7	-	-	-	-	-

Notes:
1) Sample Depth is the distance from the ground surface to the middle of the sample tested. For the bulk samples, the Sample Depth is the depth range from which the cuttings sample was collected.
2) CA = California Split-Spoon Sample. Bulk = bucket or bag sample of auger cuttings.
3) Sat. = Saturation, in percent, the ratio of the volume of water in a sample to the volume of voids.
4) Atterberg Limits describe an index test used to group soils with similar properties. LL = Liquid Limit, the water content below which soil behaves as a plastic material. PL = Plastic Limit, the moisture content below which soil is non-plastic. PI is the Plasticity Index, the difference between LL and PL.
5) Maximum Dry Unit Weight and Optimum Water Content are obtained from the Standard Proctor compaction test according to ASTM D 698.
6) UCS = Unconfined Compressive Strength, measured in units of pounds per square feet (psf) and Direct Shear. Tests used to define the shear strength of a soil.
7) Consolidation/Swell Test. A one dimensional test in which a sample is loaded vertically to overburden or another load, then inundated and allowed to consolidate or swell.

7.0 SUBSURFACE CONDITIONS

The borings encountered man-placed fill, silty to gravelly sand, low- to high-plasticity clay fill, clay with variable concentrations of organic materials, weathered claystone, and comparatively unweathered claystone to the maximum depths explored. Water was encountered in three of the six borings at depths of 7 to 24 feet at the time of drilling. Graphical and descriptive logs of the borings are presented in Appendix A.

On the basis of field observations, physical examination of the samples, and laboratory analysis, the subsoils were classified into six groups as described below:

- Aggregate base course;
- Man-placed clay fill material;
- Sandy clay/organic layer;
- Sandy gravel/alluvium/colluvium;
- Weathered bedrock; and
- Claystone bedrock.

7.1 Aggregate Base Course

The aggregate base course material generally ranges between 2 and 7 feet thick. The material is moist, reddish-brown sand, gravel, and silt, and has a medium dense consistency. The base course is classified as silty sand with gravel having a maximum size of ¾ inches and a silt and clay content (percent passing the number 200 sieve) of 17 and 20 percent in the two samples tested. This material was placed and compacted around the Phase II/III SPPTS structures and used as an all-weather road surface in the surrounding areas. Although not encountered in borings or tested as part of this investigation, a clean sand was observed in excavations adjacent to the Phase II/III SPPTS structures. This material was used as bedding adjacent to piping.

7.2 Man-Placed Clay Fill Material

Below the aggregate base course in the borings was a layer of clay fill ranging in thickness from 17 to 27 feet. The clay fill was slightly moist to very moist, soft to very stiff with angular sand and gravel inclusions. The colors of the clay fill included mixtures of brown, gray, yellow, and black. This material was generally a variable mixture of clay, claystone fragments, sand, and gravel. Dry density ranged from 94.7 to 115.3 pounds per cubic foot (pcf) and water content ranged from 13.9 to 23.9 percent. Standard Penetration Tests (SPT) performed during sampling indicated N values that ranged from 5 blows per 12 inches to 53 blows per 12 inches. In Tt-1, Tt-6, and Tt-2, the clay fill material was less stiff than in the other borings, as indicated by the blow counts shown on the boring logs included in Appendix C. These results suggest that the material was placed in layers or lifts, and compactive effort was applied. However, the compaction appears to have been variable, such as would be expected from thick lifts, where compaction would be greater in the upper portion of the lift and would decrease towards the lower portion of the lift.

Mechanical particle size analyses run on three samples of the clay fill material indicated a range of silt- and clay-sized particles from 83 to 99 percent. The liquid limits ranged from 58 to 62, and the plasticity index ranged from 39 to 46. The three samples of the clay fill material were classified as high-plasticity clays (CH).

In several of the borings, the amount of angular sand and gravel encountered within the clay fill increased with depth. A sample of the clay fill from Tt-4 that had a mottled, dark-colored zone at 21 feet had a total organic content of 4 percent. This likely represents the previous ground surface that was reworked at the time of the original grading operation. Thin layers of soil with organic concentrations less than 5 percent are typically not problematic in this area from a settlement standpoint.

A sample of the clay fill was also tested for concentration of water-soluble sulfates due to a white precipitate that was noted in the sample. A concentration of 102 parts per million (ppm) was measured, and indicates a negligible risk of damage to concrete elements that are in contact with the site soils.

Consolidation/swell tests were conducted on samples of the clay fill from Tt-1 at 5.75 feet and 16.25 feet, and from Tt-6 at 11.25 feet. When inundated at overburden pressure, the samples swelled 0.6 to 1.6 percent. This amount of swell potential generally represents a low risk of damaging movement of structures with conventional foundation loads, but poses a greater risk for structures that have a comparatively large footprint and a low bearing pressure, such as the SPPTS structures. These results also indicate that at the intervals tested there was no significant risk of settlement, or that settlement/consolidation of these layers has already occurred.

7.3 Sandy Clay/Organic Layer

Under the man-placed clay fill material, only in Tt-2, a 5-foot-thick sandy clay layer with organics was observed. The sandy clay was very moist, very dark grayish brown, and stiff with a slight organic odor. Two samples of the sandy clay from Tt-2 were classified as low-plasticity clays (CL), had 62 and 63 percent silt and clay-sized material, liquid limits of 44 and 47, and a plasticity index of 29 and 31, respectively. A sample tested for total organic content had 5.5 percent organic material. A sample of the sandy clay with organics swelled 0.4 percent when wetted after application of a 1,500 pounds per square foot (psf) confining load, and had a measured swell pressure of 3,054 psf. This layer is likely natural sandy clay soil that existed below the man-placed fill. The organic odor, total organic content, and thickness of the layer suggest it may have been a previous ground surface, an area within the ancestral stream channel, a landslide deposit, or an area where soil containing organics was used as fill or backfill. Consolidation testing does not typically show the true settlement potential for soils such as these, because while the organic layers may compress slightly under load, they will also typically continue to decay over time, causing a decrease in volume and a large potential for settlement. The presence of a five foot thick organic containing clay layer in this boring layer also demonstrates a large amount of variability between boreholes. It is possible that a thin organic layer could have gone undetected while logging cuttings and in samples from discrete intervals in other borings, but it is very unlikely that evidence of a significant thickness of organic material would not have been found if it was present.

7.4 Sandy Gravel/Alluvium/Colluvium

Below the sandy clay and/or the clay fill in borings Tt-1 and Tt-2 was a 2- to 5-foot-thick sandy gravel layer. The sandy gravel was moist to wet, reddish brown, dense sand and gravel with clay lenses throughout. A sample of the sandy gravel from Tt-2 had 50 percent gravel, 39 percent sand, and 11 percent silt- and clay-sized particles. This material is likely natural alluvial/colluvial material.

7.5 Weathered Bedrock

Below the gravelly sand and/or the clay fill, a zone of weathered bedrock was encountered in the borings. The borings encountered weathered claystone ranging in thickness from 1.5 to 4.5 feet. The weathered claystone was moist to very moist, gray, very stiff, and generally included oxidation. A sample tested for water-soluble sulfate content had a concentration of 157 ppm, which is not considered problematic for concrete, according to the American Concrete Institute (ACI).

7.6 Claystone Bedrock

Comparatively less-weathered claystone was encountered below the weathered claystone zone in all of the borings, and continued to the maximum depth explored of 36 feet. The less-weathered claystone was slightly moist, gray, and hard with traces of lignite and oxidation. Claystone samples had dry densities of 98.7 to 120.2 pcf and water contents of 14.5 to 20.0 percent. A sample used in mechanical grain size analysis had 99 percent silt- and clay-sized particles (passing the number 200 sieve), a liquid limit of 52, and a plasticity index of 35. A sample of the claystone swelled 2.5 percent when inundated after application of a 2,000 psf pressure, and had a measured swell pressure of 12,675 psf. These results indicate a high swell potential that must be considered in the design of foundation elements. Table 2 summarizes the consolidation/swell test results.

Table 2. Consolidation Swell Test Results

Boring ID	Depth	Inundation Pressure	Percent Swell	Swell Pressure
	(ft bgs)	(psf)	(%)	(psf)
Tt-1	5.75	500	1.6	3,325
Tt-1	16.25	1,000	0.7	3,381
Tt-2	21.25	1,500	0.4	3,054
Tt-4	31.25	2,000	2.5	12,675
Tt-6	11.25	500	0.6	2,074

7.7 Groundwater

Water was encountered in boring Tt-2 at 22 feet at the time of drilling. When checked 26 hours later, the level of water in the borehole had risen to 20 feet below the ground surface. In boring Tt-4 water was encountered at 24 feet. Approximately 4 hours later water was measured at a depth of 25 feet. In boring Tt-6 water was encountered at a depth of 7 feet during drilling, and had risen to a depth of 6 feet when checked again approximately 1.5 hours later. The measured water levels are summarized below on Table 3.

Table 3. Water Level Measurements

Boring No.	During Drilling (estimate)		Follow-up Measurement			
	Water Elevation (ft above mean sea level)	Depth to Water[1] (ft)	Elapsed Time (hrs)	Water Elevation (ft above mean sea level)	Depth to Water[1] (ft)	Change in Water Level [2] (ft)
Tt-2	5878	22	26	5880	20	2
Tt-4	5874	24	4	5873	25	-1
Tt-6	5891	7	1.5	5892	6	1

(1) Depth measured from the ground surface.
(2) Positive number denotes an increase in water level.

8.0 CONCLUSIONS

The purpose of the geotechnical investigation at the SPPTS site was three-fold: (1) to explore potential causes of the settlement that occurred at the Phase II/III structures, (2) to identify mitigative measures that can be used to support interim and final SPPTS (Phase II/III facilities and Phase IV) facilities to reduce the likelihood of additional future settlement and distress, and (3) to provide a safe work area for personnel regularly accessing and monitoring the site.

The cause of the sudden settlement and failure of the collection sump at the SPPTS site in July 2009 is not clear cut. However, when the related conditions are considered, it is possible to identify a “most likely” series of events that resulted in the failure of the collection sump. As consolidation of the variable and thick fill occurred, some areas of the fill “bridged” over settling soils, resulting in the formation of voids at depth within the clay fill. As settlement continued and wetting of the soils occurred, voids became larger, until the more-competent lenses of clay fill that had “bridged” over the void collapsed into the void(s). This process of settlement, void formation, wetting, collapse, and settlement gradually progressed upwards through the 17 to 27 feet of fill. When the Phase II/III upgrades to the SPPTS were constructed, the actual weights imposed from the structures were slightly less than the weight of the soils that they displaced. This is due to the fact that the structures were either empty or filled with materials that weigh significantly less than the in-place soils. However, the construction process itself resulted in loads being applied to the soils, and wetting of the soils occurred due to surface drainage and natural wetting processes. These processes likely accelerated the progression of settlement upwards until the failure occurred. The failure at the SPPTS was a localized occurrence that was not evident in the widely spaced borings; however, it is likely that similar conditions exist in many areas of the fill. Because other areas have not been leveled and are not covered by a thick layer of comparatively strong aggregate base course, any settlement that reaches the ground surface is more likely to develop slowly and would be visible as a shallow depression in the ground surface. The following observations and conclusions support the causes of the distress that are described above:

- The investigation confirmed that the Phase II/III SPPTS structures were constructed partially or completely over a 17- to 27-foot-thick layer of man-placed clay fill. This was emplaced during re-grading performed as part of security upgrades and movement of the North Walnut Creek stream channel in the 1970s; backfilling that occurred as part of construction of the SPPTS treatment cells and groundwater intercept trench in 1999; and/or removal of a 72-inch drain culvert and subsequent recompaction of fill that occurred in 2005. It was not feasible to identify which fill originated with which of these events, nor which fill material presented the greatest weakness (least compaction).

- The density, water content, and other physical properties of the fill are variable. A comparison of in-place density of the fill with a maximum density (by standard Proctor methods) indicated a compaction generally 90 percent or greater. However, this is the density that exists now, after consolidation of the fill has occurred to some extent. Further, density of some of the samples may be misleading due to the rock content of the comparatively small brass liner samples. That is, a single rock fragment that was randomly sampled as part of a liner sample would increase the measured density of that sample, while the larger bulk sample used to determine the maximum density for the material according to Standard Proctor methods likely had a lesser concentration of rock fragments. Therefore, some of the actual, in-situ densities may be lower than those

indicated in the data shown on Table 1. The variability of the in-situ material is supported by the generally high water content and degree of saturation of the clay fill samples.

- SPT results (blow counts) are also variable, suggesting inconsistent compaction or thick lifts during construction (i.e., a high degree of compaction in the upper portion of each lift that decreases with depth in each lift). The lowest blow counts were seen in Tt-1 and Tt-6. The blow counts suggest that the clay fill has a bearing capacity adequate to support the SPPTS elements, but variable and localized conditions in the fill resulted in settlement of the overlying structure. Voids that were observed in the base course backfill around and under the collection sump are believed to be the result of a long-term settlement process related to one or more of the fill/backfill processes that occurred previous to the Phase II/III SPPTS construction. The construction activity and subsurface wetting associated with the Phase II/III facilities likely increased the rate at which settlement occurred in the fill as voids worked their way upwards in the fill.

- The presence of an organic layer that varies from 5 feet thick in Tt-2 to not present at all less than 30 feet away suggests a high degree of variability in the natural soils below the fill as well. It is possible that a thin organic layer could have gone undetected while logging cuttings and in samples from discrete intervals in other borings, but it is very unlikely that evidence of a significant thickness of organic material would not have been found if it existed. Settlement in soils with significant organic content can continue over many years, and it is difficult to predict the nature and extent of the settlement. Settlement of an organic layer at the original ground surface could have contributed to settlement and eventually the development of voids higher up in the fill.

- The free water level appears to generally be perched near the surface of the bedrock and/or within alluvial/colluvial materials, but below the man-placed fill. (This is not the case at borehole Tt-6, which is discussed separately below.) This is believed to be controlled by the presence of the groundwater collection system; however, groundwater flow could be occurring around the west end of the collection system and finding preferential pathways along the prior fill/backfill zones.

- Free water was measured 6 feet below the ground surface in Tt-6. The source of the water is most likely leakage from the water storage sump and surface drainage that flowed down the adjacent hill on the north side of the access road. When the surface water encounters the comparatively permeable aggregate base course, a percentage of it percolates into the base course and through the sand bedding until it encounters the much less permeable clay fill.

9.0 RECOMMENDATIONS

Foundation recommendations are needed that will provide a stable bearing condition for elements of the Phase II/III and Phase IV SPPTS facilities. Further, the ground surface surrounding the Phase II/III and IV SPPTS facilities must be protected in the event of additional settlement. The Phase II/III structures are generally lightly loaded. A maximum allowable soil bearing pressure of 1,200 psf should be used for design of any foundation that will bear on the clay fill. This compares with an estimated actual bearing pressure of 700 psf for the previous sump.

Prior to and during the investigation at this site, alternatives that were considered included:

- Removal and replacement of fill and subgrade below and adjacent to the Phase II/III SPPTS structures. This alternative would require removal of the existing structures, excavation to within approximately 3 feet of the base of the fill, replacement and recompaction of the fill in thin lifts, and reconstruction of the SPPTS facilities;
- Methods of ground improvement such as compaction grouting or low-mobility grout injection;
- Conventional concrete piers;
- Piles or micro-piles; and
- Helical piers.

These methods are discussed in more detail below.

9.1 Remove and Replace

This alternative involves reconstructing the facilities according to the design, recognizing that occasional operational pauses may be needed to make similar repairs if and when failures occur. If the Phase II/III SPPTS facilities will be used on an interim basis only, and the separate water storage sump is a critical component of these facilities, this may be the most cost-effective approach, because it is possible that no additional failures will occur within the next several-month period. A variation on this alternative is removal and replacement of fill below the Phase II/III structures. Removal and replacement of these facilities and the underlying fill to some depth would be costly, inconvenient for the operation of the system, and may not solve the problem unless all of the fill were removed to a depth of 20 feet or more.

9.2 Ground Improvement

The performance of a shallow foundation could be improved, and the risk of distress could be reduced by a ground improvement program. This process would involve injection of a cementitious material in a three-dimensional grid system that would encompass the SPPTS Phase II/III area and extend from the ground surface to the claystone bedrock. Compaction grouting or low-mobility grouting would improve the strength and stiffness of the fill material, but the highly plastic and low-permeability nature of the clay fill would decrease the ability of the grout to permeate evenly throughout the material. Further, the creation of a large and comparatively stiff mass of soil would tend to “dam” subsurface water flow, which could increase the risk of slope instability in this slide-prone area. This method also includes a higher degree of inherent risk because a clear and singular causative mechanism has not been identified. Although this method does not appear to be a feasible alternative for foundation support, it does have merit as a means of stiffening the subgrade and filling near-surface voids that could

present safety problems for workers. If this method is chosen in addition to a deep foundation system (to stabilize the shallow subsurface to support pedestrian traffic), the upper 5 feet of the clay fill should be treated by injection of a low-viscosity, cementitious grout injected into the soil on a grid approximately 5 feet by 5 feet square that extends to at least 10 feet beyond the outer edge of the structures. This is typically accomplished by drilling a small diameter hole to a depth of 5 feet and injecting grout as the drill steel is removed. Pressure and grout volume pumped are measured to achieve a degree of uniform grout placement.

9.3 Piles and Piers

A deep foundation alternative would bypass the fill material altogether so that the weight of each element of the SPPTS is borne by the bedrock below the fill at a depth of approximately 30 feet. Conventional concrete piers and micropiles would accomplish this goal; however, the variable nature of the fill and the intermittently encountered sand/gravel layer would complicate pier installation. Any foundation system for this site must consider the effects of possible settlement due to the variable, man-placed fill. It must also consider the potential effects of swelling soils and bedrock that exist at the site. Of the alternatives considered, helical piers (a.k.a. helical piles) are the preferred alternative for this site and this application. Design recommendations for helical piers are presented in the following section of this report.

10.0 FOUNDATION RECOMMENDATIONS

After consideration of several alternatives, helical piers appear to be the best and most cost-effective foundation type to stabilize the components of the treatment cells. Advantages of helical piers include the following:

- Helical piers can be installed without concern for groundwater conditions, unlike a spread footing or concrete pier, both of which require dewatering for placement and would take time to cure.
- The equipment used to install helical piers is typically smaller and more maneuverable than that used in the installation of other foundations. This is also an advantage when installing the piers close to existing structures.
- Helical piers installed in the claystone bedrock underlying the fill have a lower risk of movement due to the expansive nature of the site soils than a shallow foundation.
- Helical piers can be installed in a phased approach to coincide with phased construction of future SPPTS structures. In many cases, helical piers can be removed and reused if desired.

The helical piers recommended for this project are Magnum Helix Foundation piers, Magnum Piering, Inc. To size the helical pier, the weight of the water storage sump (or other component of interest) and the types of soil (both the soil that will support the helix at the base of the pier and the soil that will be penetrated during drilling) must be considered. The foundation pressure due to the storage sump is approximately 700 psf, based on its weight and size. The pier must penetrate the clay fill and claystone, and must resist potential uplift forces due to heave. Magnum Piering, Inc. has sizing recommendations for their piers in their technical reference manual based on Standard Penetration Resistance or blow count (N). Appendix C includes manufacturer's descriptions of their product and sizing recommendations for Magnum Helical piers based on site soil conditions. For this application, the sizing of the pier will be governed by the pier's capacity to penetrate the bedrock because the blow counts for the clay fill are so low.

In order to determine the minimum allowable blade area to resist uplift, the Magnum Piering, Inc. Technical Reference Manual presents a paper entitled, "Summary of Earth Retaining Methods Utilizing Helical Anchors" by Howard A. Perko, March 4, 1999. The paper states that the pull out or uplift capacity is a combination of shear along the cylinder of soil between the blades and bearing capacity of the blade. The following equation is from the paper and was modified from Mitsch and Clemence (1985) and Clemence (1985).

$$(1) \qquad Q_u = 2\pi r L(c + \sigma_v \tan\phi) + A(1.3cN_c + \sigma_v N_q)$$

where Q_u is the pull out capacity, r is the radius of the blade on the helical pier, L is the length of soils that is mobilized between the blades, A is the area of the blade, c is the cohesion, σ_v is the vertical soil stress, and N_c and N_q are bearing capacity factors.

The results of the direct shear test performed on a sample taken from Tt-2 at a depth of 15 feet was used to determine the bearing capacity factors, N_c and N_q. The sample of clay fill from 15 feet below ground surface had a cohesion (c) of 411 psf and an angle of internal friction (φ) of 29°. Using φ = 29° the bearing capacity factors N_c and N_q were 32.5 and 20, respectively (Figure 14.13, Lambe and Whitman, 1969, p. 206). If the helical piers are advanced to a depth of 35 feet, the vertical stress (σ_v) is approximately 4,460.5 psf, assuming 20 feet of clay fill with an average total unit weight of 126.8 pcf over 15 feet of claystone with an average total unit

weight of 128.3 pcf. For 10- and 12-inch-diameter blades the areas are 0.54 and 0.79 feet, respectively.

Given that the structures in the treatment cells are lightly loaded, either a 10- or 12-inch-diameter Magnum helical pier can be used. Both the 10- and 12-inch-diameter piers are adequate to resist the uplift force from potentially swelling soils. Table 4 shows that the calculated factor of safety for uplift is 1.3 for the 10-inch-diameter pier and 1.9 for the 12-inch-diamter pier. The 12-inch-diameter pier with the double-cutting edge will have an advantage in cutting through areas of very hard bedrock.

Table 4. Factor of Safety for Uplift

Pier Blade Diameter	Pier Blade Area	Q_U	Q_A	Uplift Force[1]	Factor of Safety
(in)	(ft)	(lbs)	(lbs)	(lbs)	
10	0.54	518,721	172,907	131,947	1.3
12	0.79	758,870	252,956	131,947	1.9

Note: 1) Calculated based on the swell pressure from sample Tt-4 at 30 feet.

Helical piers should be installed to a minimum depth of 35 feet below the ground surface, and should have a minimum penetration of at least 5 feet into the claystone bedrock. It is assumed that the helical piers would be attached to the SPPTS facilities using a prefabricated bracket fastened to the lower-most segment of each tank or structure. Helical piers can be installed individually for each structure, in a phased approach, or all structures could be underpinned at one time. Installation of the helical piers is normally accomplished using construction equipment that has hydraulic capabilities determined from the soil properties provided on the attached boring logs and test results presented on Table 1.

11.0 LIMITATIONS

This investigation was conducted to ascertain a reasonable picture of subsurface conditions. Variations in the subsoils not indicated in our borings should be considered likely. This report was prepared from data provided by others, information developed during our field exploration, laboratory testing, engineering analysis and experience with similar conditions. Our calculations and recommendations were based on assumptions of ground conditions, interpretation of geologic conditions, and uncertainties that are unavoidable in geologic and geotechnical studies.

If any of the conditions change, or if information becomes available that would alter our assumptions or our calculations, we should be contacted to review the recommendations. We should review plans and specifications during the design, and we should observe the construction to confirm soils are as we anticipated from our borings. If helical piers are constructed, the geotechnical engineer or designated representative should observe the drilling process and document the installation torque. If grouting is performed, the geotechnical engineer or designated representative should observe the grout placement and document installation pressures and grout volume pumped. If subgrade soils are removed and recompacted, the placement and compaction of fill, backfill, subgrade and other fills that will be relied on for support of structural elements should be observed and tested by a qualified geotechnical engineer or their designated representative during construction.

We believe this investigation was conducted in a manner consistent with that level of skill and care ordinarily used by members of the profession currently practicing under similar conditions in the locality of this project. No warranty, express or implied, is made. If we can be of further service in discussing the contents of this report or in the analysis planned project from the geotechnical point of view, please call.

12.0 REFERENCES

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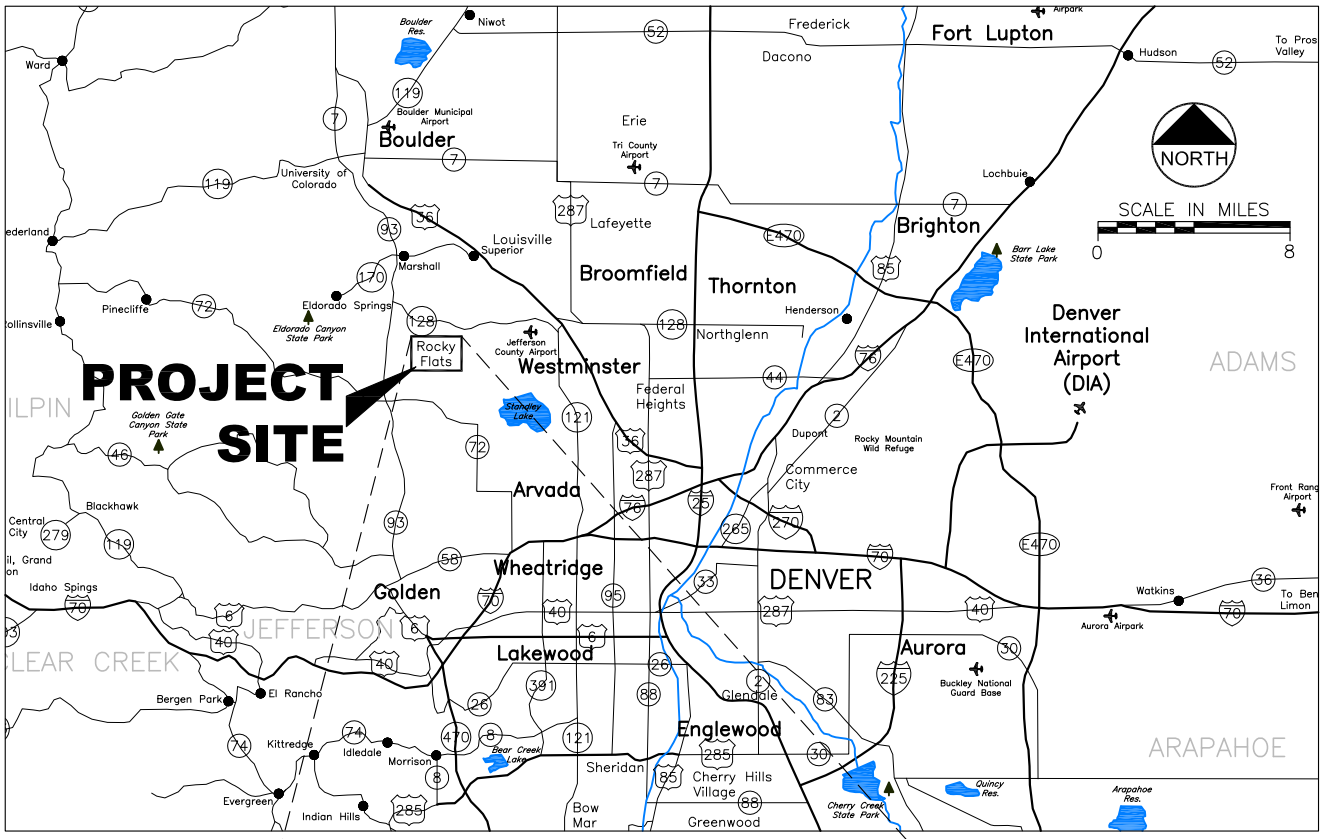
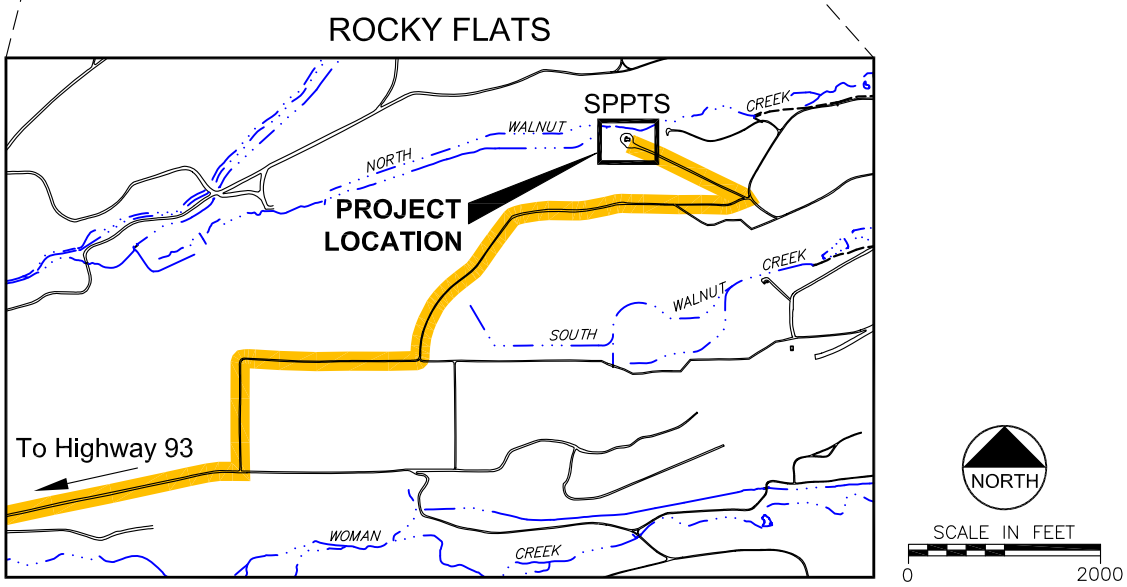
FIGURES





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Project No. 181919

October 2009

Figure 1
Rocky Flats Project Vicinity Map
SPPTS Geotechnical Investigation

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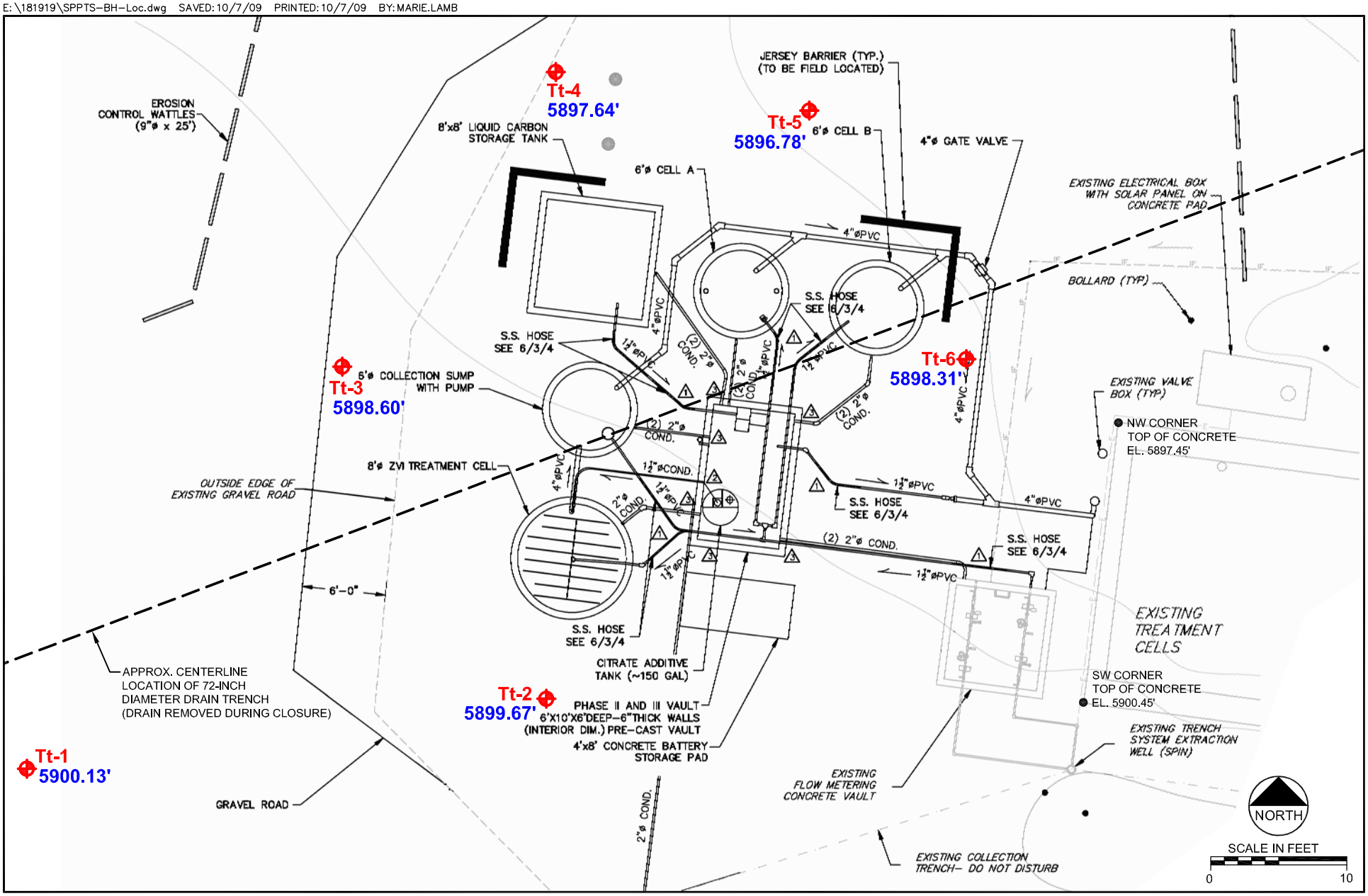

Project No. 181919

October 2009

LEGEND

BORING LOCATION WITH ELEVATION
(NO SURVEY DATA FOR Tt-3, APPROX. LOCATION AND ELEVATION)

BORING LOCATION FOR Tt-4 BEFORE HITTING REFUSAL

Figure 2
Boring Locations

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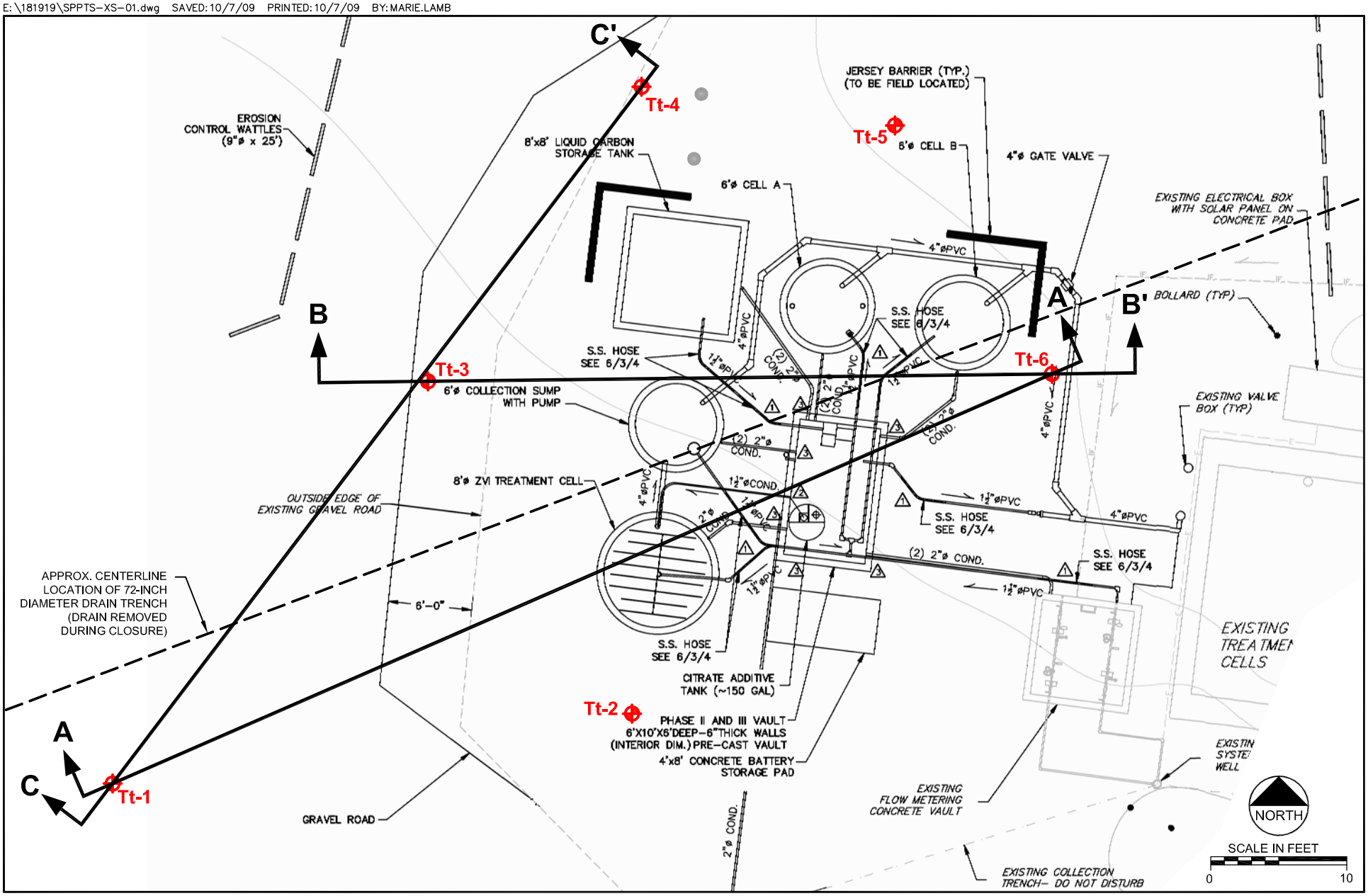

Project No. 181919

October 2009

LEGEND

- BORING LOCATION WITH ELEVATION (NO SURVEY DATA FOR Tt-3, APPROX. LOCATION)
- BORING LOCATION FOR Tt-4 BEFORE HITTING REFUSAL

Figure 3
Cross Section Locations
SPPTS Geotechnical Investigation

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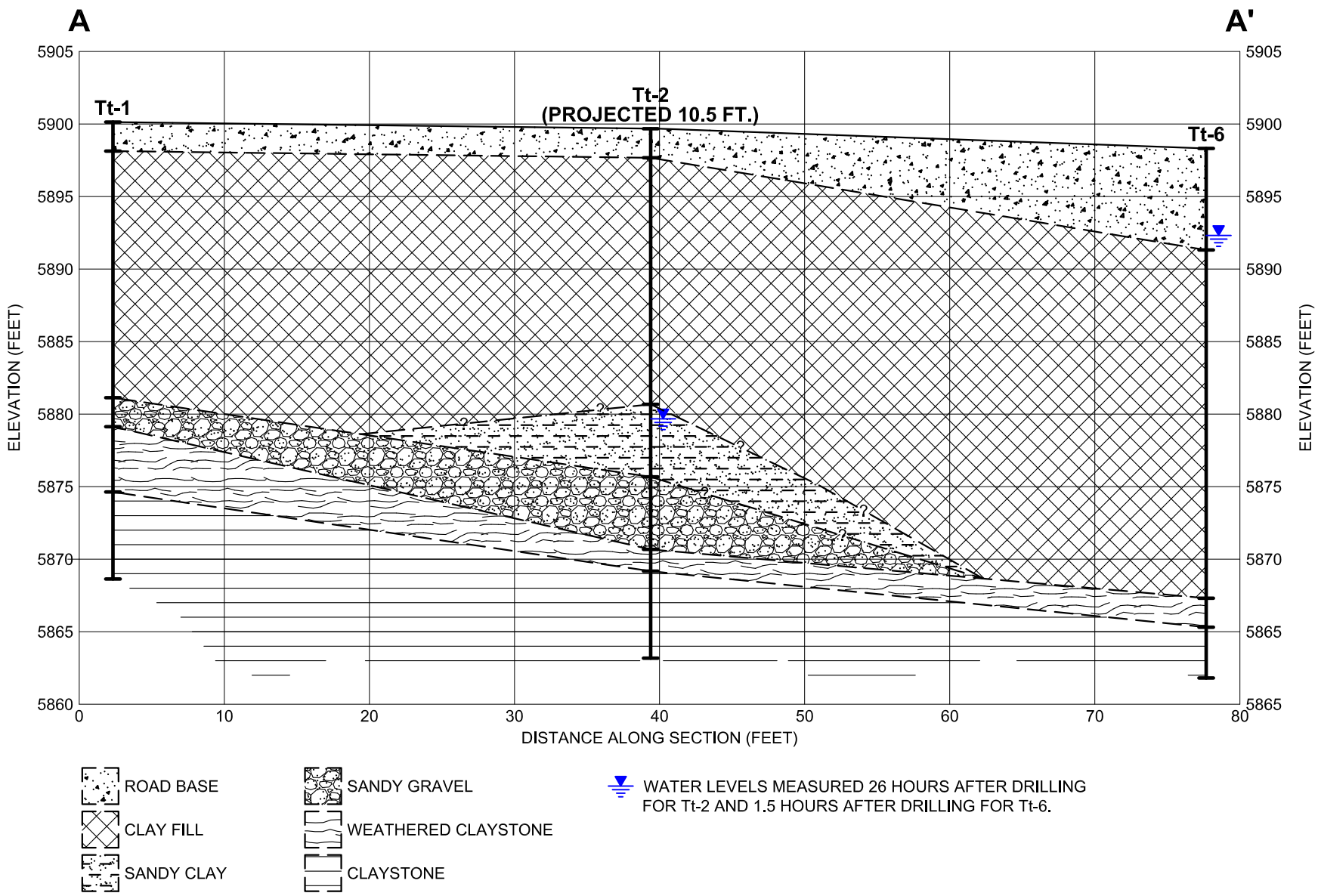

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Figure 4
Cross Section A-A'
SPPTS Geotechnical Investigation

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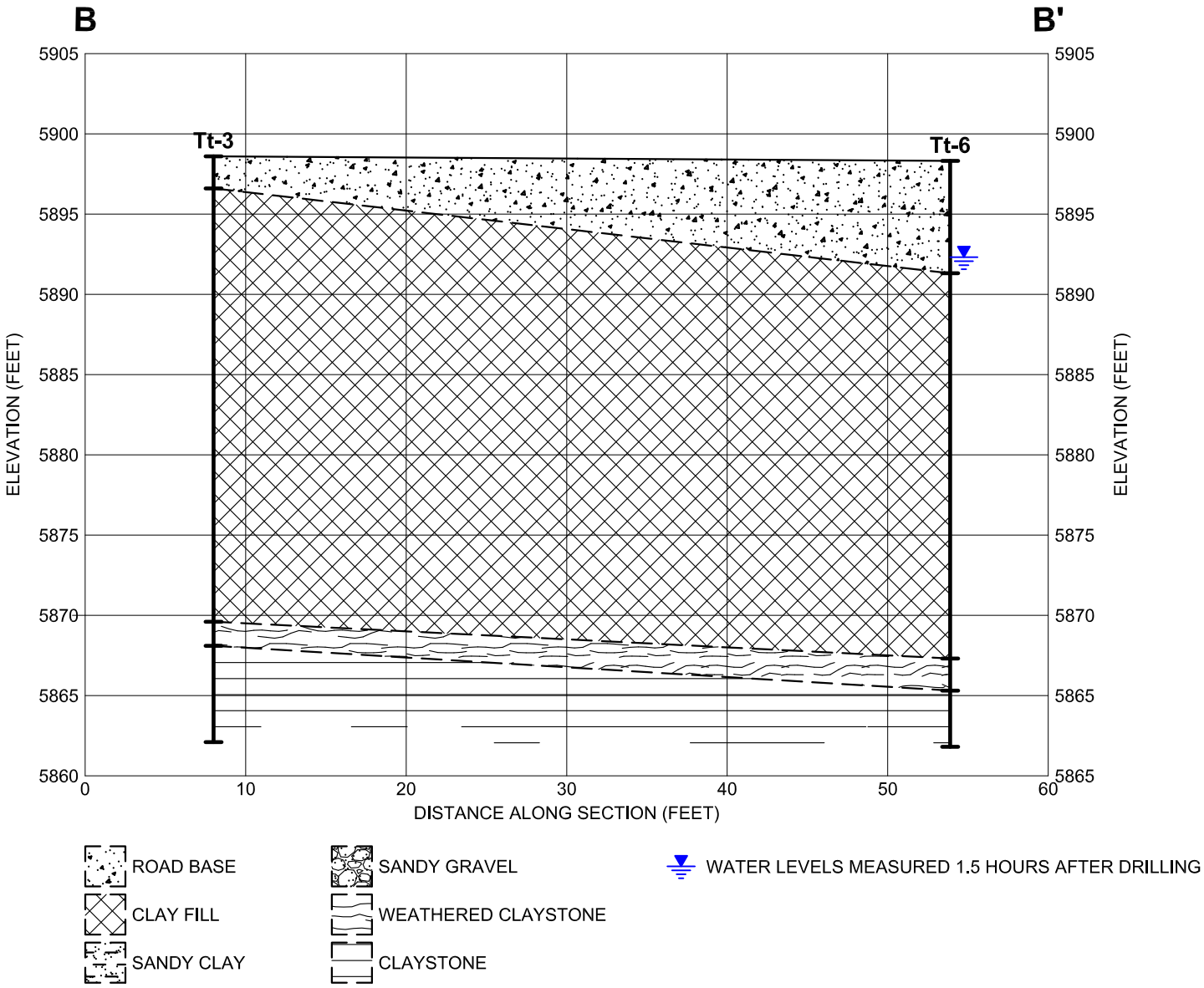

Project No. 181919

October 2009

Figure 5
Cross Section B-B'
SPPTS Geotechnical Investigation

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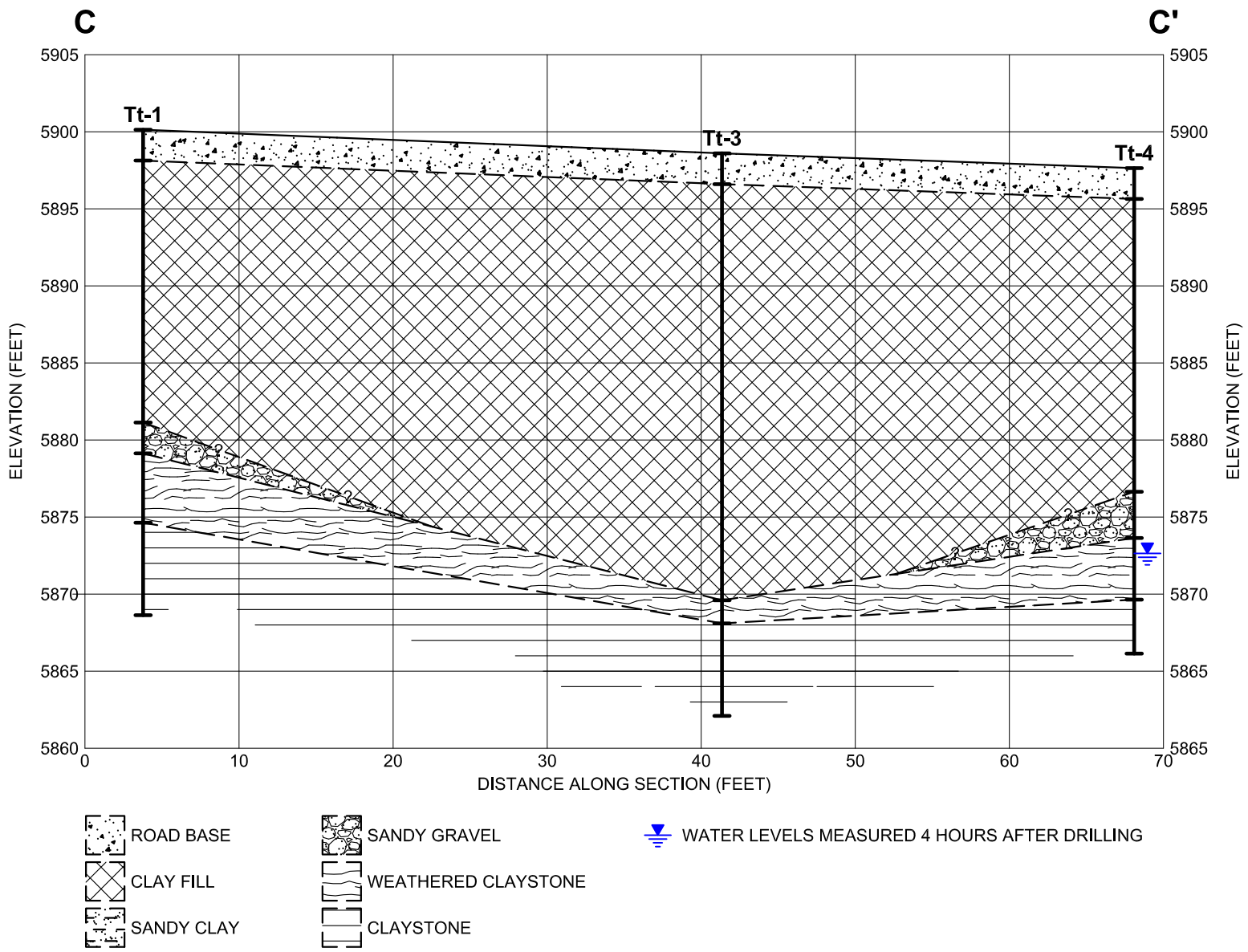


Project No. 181919

October 2009

Figure 6
Cross Section C-C'
SPPTS Geotechnical Investigation

APPENDIX A

BOREHOLE LOGS

BOREHOLE LOG

BOREHOLE NO.: **Tt-1**

PAGE: 1 OF 3

DATE: 7/28/09

PROJECT INFORMATION

PROJECT: SPPTS

PROJECT NO.: 181919

CLIENT: STOLLER

OWNER: D.O.E.

LOCATION: ROCKY FLATS

BOREHOLE LOCATION

LOCATED 17' SOUTH AND 76' WEST OF
SW CORNER OF EXISTING
TREATMENT CELL STRUCTURE
(SEE LOCATION MAP)

FIELD INFORMATION

DATE & TIME ARRIVED: 7/27/09 - 1:30PM (7/28/09 - 7:10AM)

BOREHOLE LOGGED BY: AAS

VISITORS: ---

WEATHER: SUNNY / CLOUDY, 70° F

DRILLING INFORMATION

DRILLING COMPANY: TETRA TECH, INC.

START TIME: 7/28/09 - 7:10AM

BORING DEPTH: 31.5' BORING DIA.: 4" O.D.

DRILLING METHOD: SOLID STEM AUGER WITH CME 55 TRACK RIG

SAMPLING METHOD: CA LINERS (2")

TIME DRILLING COMPLETE: 8:40AM

BOREHOLE COMPLETION / ABANDONMENT INFORMATION

START TIME: --- COMPLETE TIME: ---

INSTRUMENTATION: NONE BACKFILL: BACKFILL CUTTINGS

ELEVATION - TOP OF BORING: 5900.13' RELATIVE TO:

GROUNDWATER CONDITIONS

NO GROUNDWATER WAS ENCOUNTERED DURING DRILLING

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: 7/29/09 - 2:00PM TIME LEFT SITE: 7/29/09 - 2:30PM

NOTES:

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 2 OF 3

PROJECT NO.: 181919 **DATE:** 7/28/09

BOREHOLE NO.: Tt-1

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
							ELEVATION = 5900.13'
0							**ROADBASE (0 TO 2')** MOIST, SILT, SAND, GRAVEL.
1							
2	CA B A	5 8	13	12"			**CLAY FILL (2' TO 19')** MOIST TO VERY MOIST, BROWN AND GRAY, SOFT TO STIFF CLAY FILL WITH SAND AND GRAVEL.
3							
4							
5	CA B A	3 5	8	10"			
6							
7							
8							
9							
10	CA B A	2 3	5	9"			
11							
12							
13							
14							
15	CA B A	3 3 4	7	6"			
16							
17							
18							
19							APPROX. 19' TO 20' - DRILLER SAID "ROCKY" .
20							**SANDY GRAVEL (19' TO 21')** MOIST TO VERY MOIST, REDDISH BROWN, ANGULAR SAND AND GRAVEL, DENSE SANDY GRAVEL WITH CLAY (POSSIBLY THE ROCKY FLATS ALLUVIUM).

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 3 OF 3

PROJECT NO.: 181919 **DATE:** 7/28/09

BOREHOLE NO.: Tt-1

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
20							**SANDY GRAVEL (19' TO 21')** SEE DESCRIPTION ON PREVIOUS PAGE.
	CA B A	4 7 11	18	12"			
21							**WEATHERED CLAYSTONE (21' TO 25.5')** MOIST TO VERY MOIST, GRAY, VERY STIFF WEATHERED CLAYSTONE WITH WHITE PRECIPITATE.
22							
23							
24							
25							
	CA B A	9 22 34	56	14"			
26							**CLAYSTONE (25.5' TO E.O.B.)** SLIGHTLY MOIST, GRAY, HARD CLAYSTONE, SOME SILT AND PLANT FOSSILS, ORANGE OXIDATION.
27							
28							APPROX. 28' - DRILLER SAYS "STIFFER DRILLING".
29							
30							
	CA B A	22 37 55	92	16"			
31							E.O.B. = 31.5'
32							
33							
34							
35							
36							
37							
38							
39							
40							

BOREHOLE LOG

BOREHOLE NO.: **Tt-2**

PAGE: 1 OF 3

DATE: 7/28/09

PROJECT INFORMATION

PROJECT: SPPTS

PROJECT NO.: 181919

CLIENT: STOLLER

OWNER: D.O.E.

LOCATION: ROCKY FLATS

BOREHOLE LOCATION

LOCATED 5.5' SOUTH OF SOUTHERN EDGE OF ZVI TANK, AT CENTER LINE (SEE LOCATION MAP)

FIELD INFORMATION

DATE & TIME ARRIVED: 7/28/09 - 7:00AM

BOREHOLE LOGGED BY: AAS

VISITORS: ---

WEATHER: CLOUDY, 70° F

DRILLING INFORMATION

DRILLING COMPANY: TETRA TECH, INC.

START TIME: 8:55AM

BORING DEPTH: 36.0' BORING DIA.: 8.25" O.D.

DRILLING METHOD: CME 55 TRACK RIG, SOLID STEM AUGER AND HOLLOW STEM AUGER (SEE NOTES BELOW)

SAMPLING METHOD: CA 2" LINERS AND BULK (BUCKET) SAMPLE

TIME DRILLING COMPLETE: 12:00PM

BOREHOLE COMPLETION / ABANDONMENT INFORMATION

START TIME: --- COMPLETE TIME: ---

INSTRUMENTATION: NONE BACKFILL: CUTTINGS ON 7/29/09

ELEVATION - TOP OF BORING: 5899.67' RELATIVE TO:

GROUNDWATER CONDITIONS

GROUNDWATER WAS ENCOUNTERED AT 22' B.G.S. DURING DRILLING (MEASURED AT 20' AT 1:00PM, 7/29/09, ELAPSED TIME 26 HRS.)

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: 7/29/09 - 2:00PM TIME LEFT SITE: 7/29/09 - 2:30PM

NOTES: 10:30 TO 11:00 - SOLID STEM 4" O.D. AUGER REPLACED WITH HOLLOW STEM 8.25" O.D. AUGER SINCE HOLE WAS CAVING.

11:15AM - DRILLING AGAIN (AT 30').

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 2 OF 3

PROJECT NO.: 181919 **DATE:** 7/28/09

BOREHOLE NO.: Tt-2

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
							ELEVATION = 5899.67'
0							**ROADBASE (0 TO 2')** MOIST AT SURFACE.
1							
2							**CLAY FILL (2' TO 19')** MOIST TO VERY MOIST, BROWN AND GRAY, STIFF TO VERY STIFF CLAY FILL WITH ANGULAR SAND, GRAVEL.
3	CA B A	4 8 10	18	10"			
4							
5							
6	CA B A	7 8 10	18	10"			APPROX. 6' - DRILLER SAYS LIGHTER COLOR OF GRAY.
7							
8							
9							
10							
11	CA B A	4 9 9	18	12"			
12							
13							
14							
15							
16	CA B A	5 8 9	17	12"			
17							
18							
19					BKT 19-21'		**SANDY CLAY (19' TO 24')** VERY MOIST, DARK BROWN, STIFF SANDY CLAY WITH ORGANICS AND A SLIGHT ODOR (POSSIBLE OLD TOPSOIL).
20							

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 3 OF 3

PROJECT NO.: 181919 **DATE:** 7/28/09

BOREHOLE NO.: Tt-2

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
20					BKT 19-21'		**SANDY CLAY (19' TO 24')** SEE DESCRIPTION ON PREVIOUS PAGE.
21	CA B A	4 7 11	18	12"			
22							APPROX. 22' - GROUNDWATER ENCOUNTERED DURING DRILLING AT APPROX. 11:00AM. WATER LEVEL MEASUREMENT TAKEN APPROX. 26 HOURS LATER TO BE 20' BELOW GROUND SURFACE).
23							
24							**SANDY GRAVEL (24' TO 29')** WET, BROWN, ANGULAR SAND AND GRAVEL, DENSE SANDY GRAVEL WITH CLAY LENSES (POSSIBLY THE ROCKY FLATS ALLUVIUM).
25	CA B A	16 21 25	46	12"			
26							
27							
28							APPROX. 28' - SWITCHED TO HOLLOW STEM AUGER
29							**WEATHERED CLAYSTONE (29' TO 30.5')** MOIST, GRAY, VERY STIFF WEATHERED CLAYSTONE WITH OXIDATION.
30	CA B A	14 20 31	51	12"			**CLAYSTONE (30.5' TO E.O.B.)** SLIGHTLY MOIST, GRAY, HARD CLAYSTONE.
31							
32							
33							
34							
35	CA B A	24 50/5"	74/11"	10"			
36							E.O.B. = 36.0'
37							
38							
39							
40							

BOREHOLE LOG

BOREHOLE NO.: **Tt-3**

PAGE: 1 OF 3

DATE: 7/28/09

PROJECT INFORMATION

PROJECT: SPPTS

PROJECT NO.: 181919

CLIENT: STOLLER

OWNER: D.O.E.

LOCATION: ROCKY FLATS

BOREHOLE LOCATION

SEE LOCATION MAP

FIELD INFORMATION

DATE & TIME ARRIVED: 7/28/09 - 7:00AM

BOREHOLE LOGGED BY: AAS

VISITORS: ---

WEATHER: CLOUDY, 70° F

DRILLING INFORMATION

DRILLING COMPANY: TETRA TECH, INC.

START TIME: 12:35PM

BORING DEPTH: 36.0' BORING DIA.: 8.25" O.D.

DRILLING METHOD: CME 55 TRACK RIG, HSA

SAMPLING METHOD: CA 2" LINERS AND BULK (BAG) SAMPLE

TIME DRILLING COMPLETE: 3:00PM

BOREHOLE COMPLETION / ABANDONMENT INFORMATION

START TIME: --- COMPLETE TIME: ---

INSTRUMENTATION: NONE BACKFILL: CUTTINGS

ELEVATION - TOP OF BORING: 5898.60' RELATIVE TO:

GROUNDWATER CONDITIONS

NO GROUNDWATER WAS ENCOUNTERED DURING DRILLING

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: 7/29/09 - 2:00PM TIME LEFT SITE: 7/29/09 - 2:30PM

NOTES:

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 2 OF 3

PROJECT NO.: 181919 **DATE:** 7/28/09

BOREHOLE NO.: Tt-3

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
							ELEVATION = 5898.60'
0							**ROADBASE (0 TO 2')** MOIST AT SURFACE.
1							
2							**CLAY FILL (2' TO 29')** SLIGHTLY MOIST TO MOIST, BROWN AND GRAY, STIFF TO VERY STIFF CLAY FILL WITH SAND AND GRAVEL.
3	CA B A	4 6 7	13	12"			
4							
5							APPROX. 5' TO 15' - CONTAINS MOSTLY CLAYSTONE AND SLIGHTLY MOIST.
6	CA B A	8 11 13	24	12"			
7							
8							
9							
10							
11	CA B A	8 14 19	33	14"			
12							
13							
14							
15							
16	CA B A	7 11 13	24	14"			
17							
18							
19							
20							

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 3 OF 3

PROJECT NO.: 181919 **DATE:** 7/28/09

BOREHOLE NO.: Tt-3

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
20							**CLAY FILL (2' TO 29')** SLIGHTLY MOIST TO MOIST, BROWN AND GRAY, VERY STIFF CLAY FILL WITH CLAYSTONE, SAND,GRAVEL, ORANGE IRON OXIDATION.
21	CA B A	8 10 15	25	15"			
22							
23							
24							
25							FROM 25' DRIVE - NO RECOVERY, DRILLED TO 27' TO SAMPLE.
26	CA	18 15 24	39	N.R.			
27							27' - SAMPLE IS HEAVILY DISTURBED (RETAINED FOR OBSERVATION, NOT TESTING).
28	CA A	14 23 30	53	2"			
29							- ROCK AT BOTTOM OF HOLE.
30							**WEATHERED CLAYSTONE (29' TO 30.5')** MOIST, GRAYISH BROWN, VERY STIFF WEATHERED CLAYSTONE WITH IRON OXIDATION.
31	CA B A	10 20 34	54	10"			**CLAYSTONE (30.5' TO E.O.B.)** SLIGHTLY MOIST, GRAY, HARD CLAYSTONE.
32							
33					BAG 32-35'		32' TO 35' - BAG SAMPLE, 1 GAL. ZIPLOC.
34							
35	CA B A	18 50	68	8"			
36							E.O.B. = 36.0'
37							
38							
39							
40							

BOREHOLE LOG

BOREHOLE NO.: **Tt-4**

PAGE: 1 OF 3

DATE: 7/29/09

PROJECT INFORMATION

PROJECT: SPPTS

PROJECT NO.: 181919

CLIENT: STOLLER

OWNER: D.O.E.

LOCATION: ROCKY FLATS

BOREHOLE LOCATION

LOCATED 4.5' NORTH OF CENTER OF NORTH SIDE OF SQUARE-SHAPED (8'x8') LIQUID CARBON STORAGE TANK. (SEE LOCATION MAP)

FIELD INFORMATION

DATE & TIME ARRIVED: 7/29/09 - 6:45AM

BOREHOLE LOGGED BY: AAS

VISITORS: ---

WEATHER: PARTLY CLOUDY, 75° F

DRILLING INFORMATION

DRILLING COMPANY: TETRA TECH, INC.

START TIME: 7:05AM

BORING DEPTH: 31.5' BORING DIA.: 4" O.D.

DRILLING METHOD: CME 55 TRACK RIG, SOLID STEM AUGER (SSA)

SAMPLING METHOD: CA 2" LINERS

TIME DRILLING COMPLETE: 9:30AM

BOREHOLE COMPLETION / ABANDONMENT INFORMATION

START TIME: --- COMPLETE TIME: ---

INSTRUMENTATION: NONE BACKFILL: CUTTINGS

ELEVATION - TOP OF BORING: 5897.64' RELATIVE TO:

GROUNDWATER CONDITIONS

GROUNDWATER WAS ENCOUNTERED AT 24' B.G.S. DURING DRILLING (MEASURED AT 25' AT 1:00PM ON 7/29/09, ELAPSED TIME 4 HRS.)

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: 7/29/09 - 2:00PM TIME LEFT SITE: 7/29/09 - 2:30PM

NOTES: AT APPROX. 8:00AM, MOVED BORING LOCATION APPROX. 5' NORTH OF PREVIOUS Tt-4 BORING LOCATION.

AT APPROX. 8:20AM, MOVED BORING APPROX. 5' TO THE WEST AFTER HITTING REFUSAL AT BOULDER AT APPROX. 15' B.G.S.

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 2 OF 3

PROJECT NO.: 181919 **DATE:** 7/29/09

BOREHOLE NO.: Tt-4

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
							ELEVATION = 5897.64'
0							**ROADBASE (0 TO 2')** MOIST AT SURFACE.
1							
2							**CLAY FILL (2' TO 21')** SLIGHTLY MOIST TO MOIST, BROWN, STIFF TO VERY STIFF CLAY FILL WITH ANGULAR ARKOSIC SAND, GRAVEL, AND TRACE BOULDERS.
3	CA B A	4 6 10	16	16"			
4							
5							
6	CA B A	7 8 10	18	14"			
7							
8							
9							
10							APPROX. FROM 10' TO 12' - MOSTLY SLIGHTLY MOIST, GRAY, CLAYSTONE WITH LIGNITE.
11	CA B A	7 12 17	29	14"			
12							
13							
14							
15							APPROX. 15' - QUARTZ ROCK STUCK IN SHOE OF SAMPLE BARREL.
16	CA B A	7 16 31	47	9"			
17							
18							
19							
20							APPROX. 20' - DARK BROWN ORGANIC SOIL IN THE "B" SAMPLE AT 20'.

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 3 OF 3

PROJECT NO.: 181919 **DATE:** 7/29/09

BOREHOLE NO.: Tt-4

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
20	CA B A	10 50/4"	60/10"	9"			**CLAY FILL (2' TO 21')** SEE DESCRIPTION ON PREVIOUS PAGE. HOLE MOVED 5' TO THE NORTH (GRANITE BOULDER AT 21').
21							**SANDY GRAVEL (21' TO 24')** MOIST TO WET, REDDISH BROWN, DENSE SANDY GRAVEL WITH CLAY (POSSIBLY THE ROCKY FLATS ALLUVIUM).
22							
23							APPROX. 24' - GROUNDWATER ENCOUNTERED DURING DRILLING AT APPROX. 9:00AM. WATER LEVEL MEASUREMENT TAKEN APPROX. 4 HOURS LATER TO BE 25' BELOW GROUND SURFACE).
24							**WEATHERED CLAYSTONE (24' TO 28')** MOIST, GRAY, STIFF WEATHERED CLAYSTONE.
25	CA B A	8 5 9	14	14"			
26							
27							27' - SAMPLE IS HEAVILY DISTURBED (RETAINED FOR OBSERVATION, NOT TESTING).
28							**CLAYSTONE (28' TO E.O.B.)** SLIGHTLY MOIST, GRAY, HARD CLAYSTONE WITH TRACE LIGNITE, TRACE GYPSUM CRYSTAL, OXIDATION.
29							
30	CA B A	10 21 44	65	14"			
31							E.O.B. = 31.5'
32							
33							
34							
35							
36							
37							
38							
39							
40							

BOREHOLE LOG

BOREHOLE NO.: **Tt-5**

PAGE: 1 OF 3

DATE: 7/29/09

PROJECT INFORMATION

PROJECT: SPPTS

PROJECT NO.: 181919

CLIENT: STOLLER

OWNER: D.O.E.

LOCATION: ROCKY FLATS

BOREHOLE LOCATION

10' NORTH AND 12' EAST OFF NE CORNER OF SQUARE-SHAPED (LIQUID CARBON STORAGE TANK) (SEE LOCATION MAP)

FIELD INFORMATION

DATE & TIME ARRIVED: 7/29/09 - 6:45AM

BOREHOLE LOGGED BY: AAS

VISITORS: ---

WEATHER: CLOUDY, 65° F

DRILLING INFORMATION

DRILLING COMPANY: TETRA TECH, INC.

START TIME: 9:40AM

BORING DEPTH: 31.5' BORING DIA.: 4" O.D.

DRILLING METHOD: CME 55 TRACK RIG, SOLID STEM AUGER (SSA)

SAMPLING METHOD: CA 2" LINERS, BUCKET (BULK)

TIME DRILLING COMPLETE: 11:00AM

BOREHOLE COMPLETION / ABANDONMENT INFORMATION

START TIME: --- COMPLETE TIME: ---

INSTRUMENTATION: NONE BACKFILL: CUTTINGS

ELEVATION - TOP OF BORING: 5896.78' RELATIVE TO:

GROUNDWATER CONDITIONS

NO GROUNDWATER WAS ENCOUNTERED DURING DRILLING

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: 7/29/09 - 2:00PM TIME LEFT SITE: 7/29/09 - 2:30PM

NOTES:

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 2 OF 3

PROJECT NO.: 181919 **DATE:** 7/29/09

BOREHOLE NO.: Tt-5

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
							ELEVATION = 5896.78'
0							**ROADBASE (0 TO 2')** MOIST AT SURFACE.
1							
2							**CLAY FILL (2' TO 24')** SLIGHTLY MOIST TO MOIST, BROWN AND GRAY, STIFF TO VERY STIFF CLAY FILL WITH ANGULAR ARKOSIC SAND, GRAVEL, AND TRACE SMALL COBBLES.
3	CA B A	4 5 9	14	16"			
4							
5							APPROX. FROM 5' TO 15' - BULK (3 GAL. BUCKET) SAMPLE OF CLAY FILL.
6	CA B A	6 8 9	17	14"			
7					BKT 5'-15'		
8							
9							
10							
11	CA B A	9 13 15	28	10"			
12					BKT 5'-15'		
13							
14							
15							
16	CA B A	5 11 9	20	11"			
17							
18							
19							
20							

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 3 OF 3

PROJECT NO.: 181919 **DATE:** 7/29/09

BOREHOLE NO.: Tt-5

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
20							**CLAY FILL (2' TO 24')** SEE DESCRIPTION ON PREVIOUS PAGE.
	CA B A	17 25 16	41	15"			
21							
22							
23							
24							**WEATHERED CLAYSTONE (24' TO 27')** SLIGHTLY MOIST TO MOIST, DARK GRAY, VERY STIFF WEATHERED CLAYSTONE WITH WHITE CALCIUM CARBONATE PRECIPITATE.
25							
	CA B A	9 11 16	27	15"			
26							
27							**CLAYSTONE (27' TO E.O.B.)** SLIGHTLY MOIST, GRAY WITH YELLOWISH BROWN HARD CLAYSTONE.
28							
29							
30							
	CA B A	22 30 48	78	14"			
31							E.O.B. = 31.5'
32							
33							
34							
35							
36							
37							
38							
39							
40							

BOREHOLE LOG

BOREHOLE NO.: **Tt-6**

PAGE: 1 OF 3

DATE: 7/29/09

PROJECT INFORMATION

PROJECT: SPPTS

PROJECT NO.: 181919

CLIENT: STOLLER

OWNER: D.O.E.

LOCATION: ROCKY FLATS

BOREHOLE LOCATION

SEE LOCATION MAP

FIELD INFORMATION

DATE & TIME ARRIVED: 7/29/09 - 6:45AM

BOREHOLE LOGGED BY: AAS

VISITORS: ---

WEATHER: CLOUDY, 70° F

DRILLING INFORMATION

DRILLING COMPANY: TETRA TECH, INC.

START TIME: 11:30AM

BORING DEPTH: 36.25' BORING DIA.: 4" O.D.

DRILLING METHOD: CME 55 TRACK RIG, SOLID STEM AUGER (SSA)

SAMPLING METHOD: CA 2" LINERS, BULK (BAG) SAMPLE

TIME DRILLING COMPLETE: 1:10PM

BOREHOLE COMPLETION / ABANDONMENT INFORMATION

START TIME: --- COMPLETE TIME: ---

INSTRUMENTATION: NONE BACKFILL: CUTTINGS

ELEVATION - TOP OF BORING: 5898.31' RELATIVE TO:

GROUNDWATER CONDITIONS

GROUNDWATER WAS ENCOUNTERED AT 7' B.G.S. DURING DRILLING (MEASURED AT 6' AT 1:30PM ON 7/29/09, ELAPSED TIME 1.5 HRS)

FOLLOWING FIELD WORK

TIME OF CLEAN-UP COMPLETE: 7/29/09 - 2:00PM TIME LEFT SITE: 7/29/09 - 2:30PM

NOTES:

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 2 OF 3

PROJECT NO.: 181919 **DATE:** 7/29/09

BOREHOLE NO.: Tt-6

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
							ELEVATION = 5898.31'
0							**ROADBASE (0 TO 7')** SLIGHTLY MOIST TO WET, REDDISH BROWN, MEDIUM DENSE SAND AND GRAVEL.
1							
2							APPROX. 2' TO 5' - BAG SAMPLE (1 GAL. ZIPLOC).
3	CA B A	10 11 13	24	14"	BAG 2'-5'		
4							
5							
6	CA B A	9 5 6	11	12"			APPROX. 7' - GROUNDWATER ENCOUNTERED DURING DRILLING AT APPROX. 12:00PM. WATER LEVEL MEASUREMENT TAKEN APPROX. 1.5 HOURS LATER TO BE 6' BELOW GROUND SURFACE).
7							**CLAY FILL (7' TO 31')** VERY MOIST TO WET, BROWN AND GRAY, MEDIUM STIFF TO VERY STIFF CLAY FILL WITH CLAYSTONE FRAGMENTS, SAND, GRAVEL (ANGULAR), AND TRACE COBBLES.
8							
9							
10							APPROX. FROM 5' TO 15' - BULK (3 GAL. BUCKET) SAMPLE OF CLAY FILL.
11	CA A	3 4 4	8	6"			
12							
13							
14							
15							
16	CA B A	4 4 5	9	6"			
17							
18							
19							
20							

BOREHOLE LOG

PROJECT: RF.SPPTS **PAGE:** 3 OF 3

PROJECT NO.: 181919 **DATE:** 7/29/09

BOREHOLE NO.: Tt-6

DEPTH (FT)	DRIVE SAMPLES: SAMPLE TYPE	BLOWS (PER 6")	SPT (N) BL/12"	RECOV.	ADD'L SAMPLES	LITHOLOGY GRAPHIC	SOIL DESCRIPTION
20							**CLAY FILL (7' TO 31')** SEE DESCRIPTION ON PREVIOUS PAGE.
21	CA A	5 6 9	15	6"			APPROX. 20' - LESS SAND AND GRAVEL IN THE 20' DRIVE SAMPLE (MOSTLY CLAY).
22							
23							
24							APPROX. 24' TO 31' - INCREASE IN SAND AND GRAVEL FROM 24' TO 31'.
25	CA B A	22 18 25	43	15"			APPROX. 25' - IN THE CA SAMPLE OF THE 25' DRIVE, MOIST TO VERY MOIST, BROWN CLAY FILL, CONTAINS ANGULAR QUARTZ SAND, ROUNDED GRAVEL, AND IRON OXIDATION.
26							
27							
28							
29							
30	CA A	11 15 23	38	2"			APPROX. 30' - POOR SAMPLE (POSSIBLE LARGE GRAVEL OR COBBLE IN THE HOLE.
31							**WEATHERED CLAYSTONE (31' TO 33')** MOIST, GRAYISH BROWN, HARD WEATHERED CLAYSTONE WITH TRACE LIGNITE.
32							
33							**CLAYSTONE (33' TO E.O.B.)** SLIGHTLY MOIST, GRAY, HARD CLAYSTONE.
34							
35	CA B A	18 40 50/3"	90/9"	8"			
36							E.O.B. = 36.25'
37							
38							
39							
40							

APPENDIX B
LABORATORY RESULTS

In-Place Density and Moisture Content Test Results

In-Place Density and Moisture Content Test Form

Tetra Tech, Inc. (970) 223.9600

Project Information

Project Name	Rocky Flats-SPPTS
Project Number	181919A
Date	7/31/2009
Remarks	
Remarks	
Remarks	
Tested By	CK

Assumed Gs= 2.70

Laboratory Testing Determinations

Sample ID	Tt-1	Tt-1	Tt-1	Tt-1			
Sample Location	2'A	5'A	15'A	20'A			
Remarks	**Fill**	**Fill**	**Fill**				
Soil Description	Sandy Claystone, Clay lenses, tr. Gravel, Brown Grey	Clay, w/Gravel & Sand, olive	Sandy Clay, Claystone frag., tr. Gravel, Sandy lenses, Olive Grey	Silty Sandy Clay, tr. Gravel, CaCo3, Olive Rust			
Mass of soil + cylinder (g)	147.65	487.82	400.12	436.75			
Mass of cylinder (g)	0	106.89	109.52	119.61			
Drying Pan ID	10.00	kd8	6.00	12.00			
Mass of Drying Pan (g)	15.96	15.75	15.70	15.63			
Mass of Wet Soil + Pan (g)	165.70	320.40	304.05	395.90			
Mass of Dry Soil + Pan (g)	144.95	263.85	253.28	325.18			
Average Samp. Diam. (in)	1.930	1.930	1.937	1.927			
Average Samp. Height (in)	1.450	4.000	2.957	3.313			
Volume of cyl. (in^3)	4.24	11.70	8.71	9.66	0.00	0.00	0.00

Calculated Results

Moist Density (lb/ft^3)	**132.6**	**124.0**	**127.0**	**125.0**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Dry Density (lb/ft^3)	**114.2**	**101.0**	**104.7**	**101.8**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Moisture Content	**0.161**	**0.228**	**0.214**	**0.228**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Moisture Content (%)	**16.1**	**22.8**	**21.4**	**22.8**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Saturation (%)	**91%**	**92%**	**95%**	**94%**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**

P:\000-400\Moisture & description.xls

In-Place Density and Moisture Content Test Form

Tetra Tech, Inc. (970) 223.9600

Project Information

Project Name	Rocky Flats-SPPTS
Project Number	181919A
Date	7/31/2009
Remarks	
Remarks	
Remarks	
Tested By	CK

Assumed Gs= 2.70

Laboratory Testing Determinations

Sample ID	Tt-2	Tt-2	Tt-2	Tt-2	Tt-2		
Sample Location	5'A	15'A	20'A	25'A	35'A		
Remarks	**Fill**	**Fill**					
Soil Description	Sandy Clay, w/Gravel, Claystone frag., Olive	Silty Clay, Claystone Frag., tr. Gravel, Olive	Silty Clay, w/ Gravel, tr. Sand, Organic odor, Dk. Brown black	Clayey, Gravelly Sand, Brown	Silty Claystone, Olive, Grey		
Mass of soil + cylinder (g)	292.88	131.55	516.45	560.63	533.17		
Mass of cylinder (g)	119.64	0.00	109.80	120.07	107.65		
Drying Pan ID	3	9	8	111	108		
Mass of Drying Pan (g)	15.68	15.68	13.35	235.86	232.46		
Mass of Wet Soil + Pan (g)	379.83	146.96	200.44	480.12	475.58		
Mass of Dry Soil + Pan (g)	331.30	122.36	175.62	466.81	444.75		
Average Samp. Diam. (in)	1.919	1.935	1.925	1.950	1.936		
Average Samp. Height (in)	1.858	1.462	4.000	4.000	4.000		
Volume of cyl. (in^3)	5.37	4.30	11.64	11.95	11.77	0.00	0.00

Calculated Results

Moist Density (lb/ft^3)	**122.8**	**116.6**	**133.1**	**140.5**	**137.7**	**#DIV/0!**	**#DIV/0!**
Dry Density (lb/ft^3)	**106.4**	**94.7**	**115.4**	**132.8**	**120.2**	**#DIV/0!**	**#DIV/0!**
Moisture Content	**0.154**	**0.231**	**0.153**	**0.058**	**0.145**	**#DIV/0!**	**#DIV/0!**
Moisture Content (%)	**15.4**	**23.1**	**15.3**	**5.8**	**14.5**	**#DIV/0!**	**#DIV/0!**
Saturation (%)	**71%**	**80%**	**90%**	**58%**	**98%**	**#DIV/0!**	**#DIV/0!**

P:\000-400\Moisture & description.xls

In-Place Density and Moisture Content Test Form

Tetra Tech, Inc. (970) 223.9600

Project Information

Project Name	Rocky Flats-SPPTS
Project Number	181919A
Date	7/31/2009
Remarks	
Remarks	
Remarks	
Tested By	CK

Assumed Gs= 2.70

Laboratory Testing Determinations

Sample ID	Tt-3	Tt-3					
Sample Location	2'A	10'A					
Remarks	**Fill**	**Fill**					
Soil Description	Sandy Clay, Claystone Frag., Olive	Clay, tr. Sand, Olive Grey					
Mass of soil + cylinder (g)	507.26	518.77					
Mass of cylinder (g)	109.36	119.21					
Drying Pan ID	dc17	110					
Mass of Drying Pan (g)	13.31	233.72					
Mass of Wet Soil + Pan (g)	410.91	465.58					
Mass of Dry Soil + Pan (g)	349.58	429.36					
Average Samp. Diam. (in)	1.939	1.929					
Average Samp. Height (in)	4.000	4.000					
Volume of cyl. (in^3)	11.81	11.69	0.00	0.00	0.00	0.00	0.00

Calculated Results

Moist Density (lb/ft^3)	**128.3**	**130.2**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Dry Density (lb/ft^3)	**108.5**	**109.9**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Moisture Content	**0.182**	**0.185**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Moisture Content (%)	**18.2**	**18.5**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Saturation (%)	**89%**	**94%**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**

In-Place Density and Moisture Content Test Form

Tetra Tech, Inc. (970) 223.9600

Project Information

Project Name	Rocky Flats-SPPTS
Project Number	181919A
Date	7/31/2009
Remarks	
Remarks	
Remarks	
Tested By	CK

Assumed Gs= 2.70

Laboratory Testing Determinations

Sample ID	Tt-4	Tt-4	Tt-4				
Sample Location	2'A	10'A	30'A				
Remarks	**Fill**	**Fill**					
Soil Description	Silty Clay, Claystone Frag., Sandy Clay lenses, tr. Gravel, Olive	Silty Clay, Claystone Frag., Lignite Frag. Grey	Claystone, Gypsum Crystals, Lignite Frag., Grey Brown				
Mass of soil + cylinder (g)	521.47	445.27	518.48				
Mass of cylinder (g)	109.41	119.20	119.94				
Drying Pan ID	4	109	dc14				
Mass of Drying Pan (g)	15.73	240.08	13.43				
Mass of Wet Soil + Pan (g)	214.86	428.51	327.54				
Mass of Dry Soil + Pan (g)	190.56	397.82	275.13				
Average Samp. Diam. (in)	1.951	1.925	1.923				
Average Samp. Height (in)	4.000	3.385	4.000				
Volume of cyl. (in^3)	11.96	9.85	11.62	0.00	0.00	0.00	0.00

Calculated Results

Moist Density (lb/ft^3)	**131.3**	**126.1**	**130.7**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Dry Density (lb/ft^3)	**115.3**	**105.6**	**108.9**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Moisture Content	**0.139**	**0.195**	**0.200**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Moisture Content (%)	**13.9**	**19.5**	**20.0**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Saturation (%)	**81%**	**88%**	**99%**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**

P:\000-400\Moisture & description.xls

In-Place Density and Moisture Content Test Form

Tetra Tech, Inc. (970) 223.9600

Project Information

Project Name	Rocky Flats-SPPTS
Project Number	181919A
Date	7/31/2009
Remarks	
Remarks	
Remarks	
Tested By	CK

Assumed Gs= 2.70

Laboratory Testing Determinations

Sample ID	Tt-5	Tt-5					
Sample Location	10'A	25'B					
Remarks	**Fill**						
Soil Description	Silty Clay, Claystone Frag., Olive	Weathered Claystone, CaCo3, Olive					
Mass of soil + cylinder (g)	480.37	468.50					
Mass of cylinder (g)	104.72	115.66					
Drying Pan ID	kd30	dc23					
Mass of Drying Pan (g)	15.87	13.30					
Mass of Wet Soil + Pan (g)	389.32	165.24					
Mass of Dry Soil + Pan (g)	323.95	137.94					
Average Samp. Diam. (in)	1.937	1.924					
Average Samp. Height (in)	4.000	3.626					
Volume of cyl. (in^3)	11.79	10.54	0.00	0.00	0.00	0.00	0.00

Calculated Results

Moist Density (lb/ft^3)	**121.4**	**127.5**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Dry Density (lb/ft^3)	**100.2**	**104.6**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Moisture Content	**0.212**	**0.219**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Moisture Content (%)	**21.2**	**21.9**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Saturation (%)	**84%**	**97%**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**

In-Place Density and Moisture Content Test Form

Tetra Tech, Inc. (970) 223.9600

Project Information

Project Name	Rocky Flats-SPPTS
Project Number	181919A
Date	7/31/2009
Remarks	
Remarks	
Remarks	
Tested By	CK

Assumed Gs= 2.70

Laboratory Testing Determinations

Sample ID	Tt-6	Tt-6	Tt-6	Tt-6	Tt-6	Tt-6	Tt-6
Sample Location	5'A	10'A	35'A				
Remarks	**Fill**						
Soil Description	Clayey, Gravelly Sand, Brown	Silty Clay, Gypsum Crystals, Olive	Silty Claystone, Olive				
Mass of soil + cylinder (g)	473.64	451.74	531.66				
Mass of cylinder (g)	104.47	120.13	117.53				
Drying Pan ID	dc11	xz	kd29				
Mass of Drying Pan (g)	13.56	13.46	15.93				
Mass of Wet Soil + Pan (g)	346.04	283.50	428.94				
Mass of Dry Soil + Pan (g)	319.34	231.44	375.76				
Average Samp. Diam. (in)	1.935	1.925	1.943				
Average Samp. Height (in)	3.618	3.394	4.000				
Volume of cyl. (in^3)	10.64	9.88	11.86	0.00	0.00	0.00	0.00

Calculated Results

Moist Density (lb/ft^3)	**132.2**	**127.9**	**133.0**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Dry Density (lb/ft^3)	**121.6**	**103.2**	**115.9**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Moisture Content	**0.087**	**0.239**	**0.148**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Moisture Content (%)	**8.7**	**23.9**	**14.8**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
Saturation (%)	**61%**	**102%**	**88%**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**

Munsell Color Classification

Munsell Color Classification

Tt-1 @2'A	Grayish Brown, (2.5Y/5/2)
Tt-1 @ 5'A	Olive Brown, (2.5Y/4/4)
Tt-1 @ 10'A	Dark Grayish Brown, (2.5Y/4/2)
Tt-1 @ 15'A	Light Gray,(5Y/7/2)
Tt-1 @ 20'A	Light Olive Brown, (2.5Y/5/4)
Tt-2 @ 5'A	Olive Brown, (2.5Y/4/3)
Tt-2 @ 15'A	Light Olive Brown, (2.5Y/5/3)
Tt-2 @ 19-21'	Very Dark Gray, (10YR/3/1)
Tt-2 @ 20'A	Very Dark Grayish Brown, (10YR/3/2)
Tt-2 @ 25'A	Brown, (10YR/5/3)
Tt-2 @ 35'A	Light Olive Brown, (2.5Y/5/3)
Tt-3 @ 2'A	Olive Brown, (2.5Y/4/3)
Tt-3 @ 10'A	Light Yellowish Brown, (2.5Y/6/4)
Tt-3 @ 35'A	Dark Gray, (2.5Y/4/1)
Tt-4 @ 2'A	Grayish Brown, (2.5Y/5/2)
Tt-4 @ 5'A	Dark Gray, (2.5Y/4/1)
Tt-4 @ 10'A	Dark Gray, (2.5Y/4/1)
Tt-4 @ 20'A	Brown, (7.5YR/4/4)
Tt-4 @ 30'A	Dark Gray, (2.5Y/4/1)
Tt-5 @ 2'A	Grayish Brown, (10YR/5/2)
Tt-5 @ 5-15'	Light Olive Brown, (2.5Y/5/3)
Tt-5 @ 10'A	Grayish Brown, (2.5Y/5/2)
Tt-5 @ 25'B	Light Olive Brown, (2.5Y/5/4)
Tt-6 @ 2-5'	Brown, (7.5YR/4/3)
Tt-6 @ 5'A	Dark Yellowish Brown, (10YR/3/6)
Tt-6 @ 10'A	Olive Brown, (2.5Y/4/3)
Tt-6 @ 35'A	Dark Gray, (10YR/4/1)

Atterberg Limits Test Results

Atterberg Limits Test
ASTM D 4318

Tetra Tech, Inc. (970) 223.9600

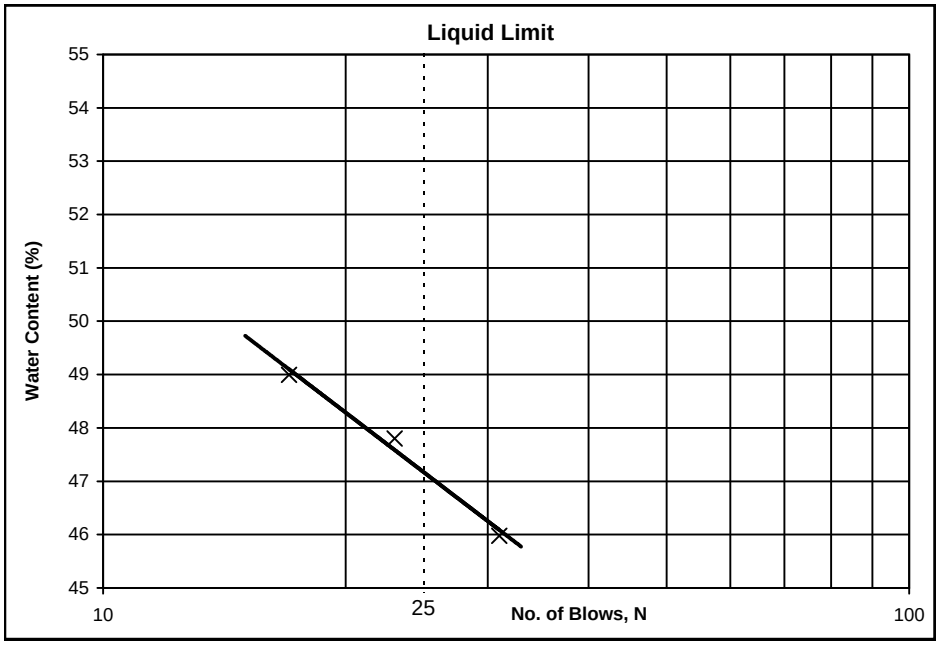
Sample Identification	Tt-2 @ 19'-21'

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	8/6/2009
Sample Type	Bulk
Soil Description	
Remarks	
Tested By	CK
Sieved on #40 (Yes or No)	Yes
Preparation (Wet or Dry)	Dry

Liquid Limit Determination

Goal for range of blows	25-35	20-30	15-25
No. of blows, N	31	23	17
Drying Can No.	b5	a2	c4
Mass of can (g)	11.08	10.99	10.92
Mass of wet soil + can (g)	29.78	30.50	28.68
Mass of dry soil + can (g)	23.89	24.19	22.84
Water content (%)	46.0	47.8	49.0



Plastic Limit Determination

Drying Can No.	a4	b8
Mass of can (g)	11.13	11.10
Mass of wet soil + can (g)	20.14	20.52
Mass of dry soil + can (g)	18.88	19.22
Water content (%)	16.3	16.0

Results		***Adj.***
Liquid Limit	47.2	47
Plastic Limit	16.1	16
Plasticity Index	31.0	31

Atterberg Limits Test
ASTM D 4318

Tetra Tech, Inc. (970) 223.9600

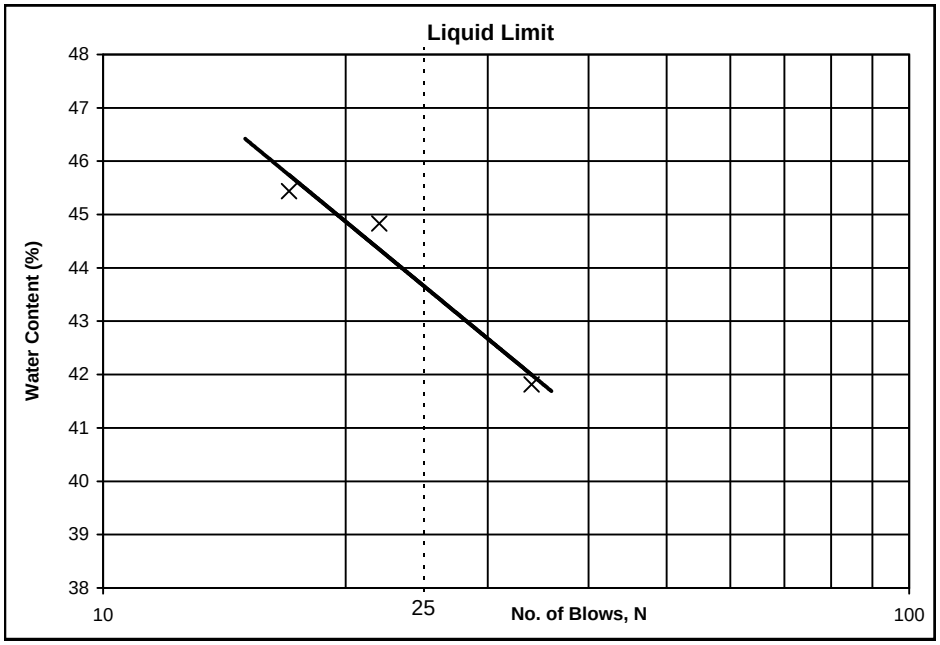
Sample Identification	Tt-2 @ 20'B

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	8/6/2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK
Sieved on #40 (Yes or No)	Yes
Preparation (Wet or Dry)	Dry

Liquid Limit Determination

Goal for range of blows	25-35	20-30	15-25
No. of blows, N	34	22	17
Drying Can No.	c11	b1	d36
Mass of can (g)	11.00	11.15	11.18
Mass of wet soil + can (g)	31.45	31.34	29.36
Mass of dry soil + can (g)	25.42	25.09	23.68
Water content (%)	41.8	44.8	45.4



Plastic Limit Determination

Drying Can No.	d35	b9
Mass of can (g)	11.12	11.11
Mass of wet soil + can (g)	19.26	18.44
Mass of dry soil + can (g)	18.23	17.51
Water content (%)	14.5	14.5

Results		***Adj.***
Liquid Limit	43.7	44
Plastic Limit	14.5	15
Plasticity Index	29.2	29

Atterberg Limits Test
ASTM D 4318

Tetra Tech, Inc. (970) 223.9600

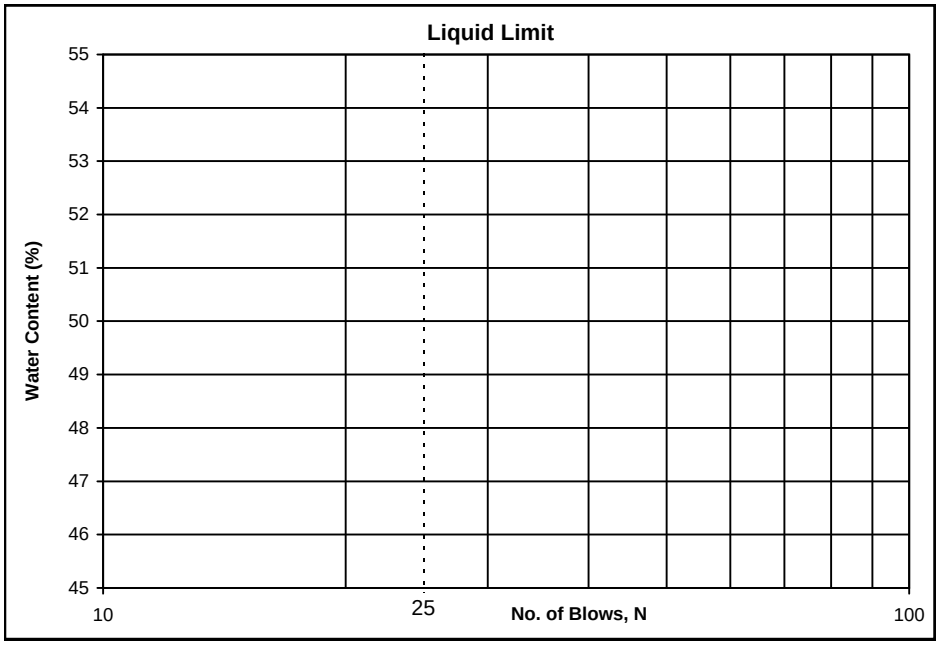
Sample Identification	Tt-2 @ 25'A

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	8/6/2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK
Sieved on #40 (Yes or No)	Yes
Preparation (Wet or Dry)	Dry

Liquid Limit Determination

Goal for range of blows	25-35	20-30	15-25
No. of blows, N			
Drying Can No.			
Mass of can (g)			
Mass of wet soil + can (g)			
Mass of dry soil + can (g)			
Water content (%)			



Plastic Limit Determination

Drying Can No.		
Mass of can (g)		
Mass of wet soil + can (g)		
Mass of dry soil + can (g)		
Water content (%)		

Results		***Adj.***
Liquid Limit		NLL
Plastic Limit		NPL
Plasticity Index		NPI

Granular, Non-plastic

Atterberg Limits Test
ASTM D 4318

Tetra Tech, Inc. (970) 223.9600

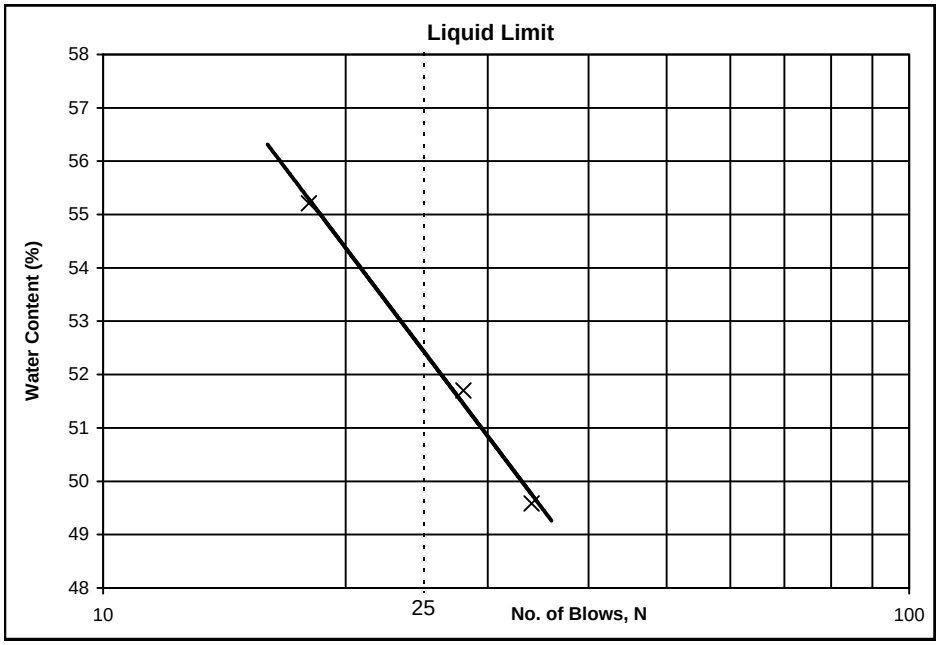
Sample Identification	Tt-2 @ 35'A

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	8/6/2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK
Sieved on #40 (Yes or No)	Yes
Preparation (Wet or Dry)	Dry

Liquid Limit Determination

Goal for range of blows	25-35	20-30	15-25
No. of blows, N	34	28	18
Drying Can No.	a7	a8	b2
Mass of can (g)	11.07	11.13	11.14
Mass of wet soil + can (g)	30.74	30.32	31.10
Mass of dry soil + can (g)	24.22	23.78	24.00
Water content (%)	49.6	51.7	55.2



Plastic Limit Determination

Drying Can No.	d7	d24
Mass of can (g)	11.23	11.10
Mass of wet soil + can (g)	17.21	19.10
Mass of dry soil + can (g)	16.34	17.92
Water content (%)	17.0	17.3

Results		***Adj.***
Liquid Limit	52.4	52
Plastic Limit	17.2	17
Plasticity Index	35.3	35

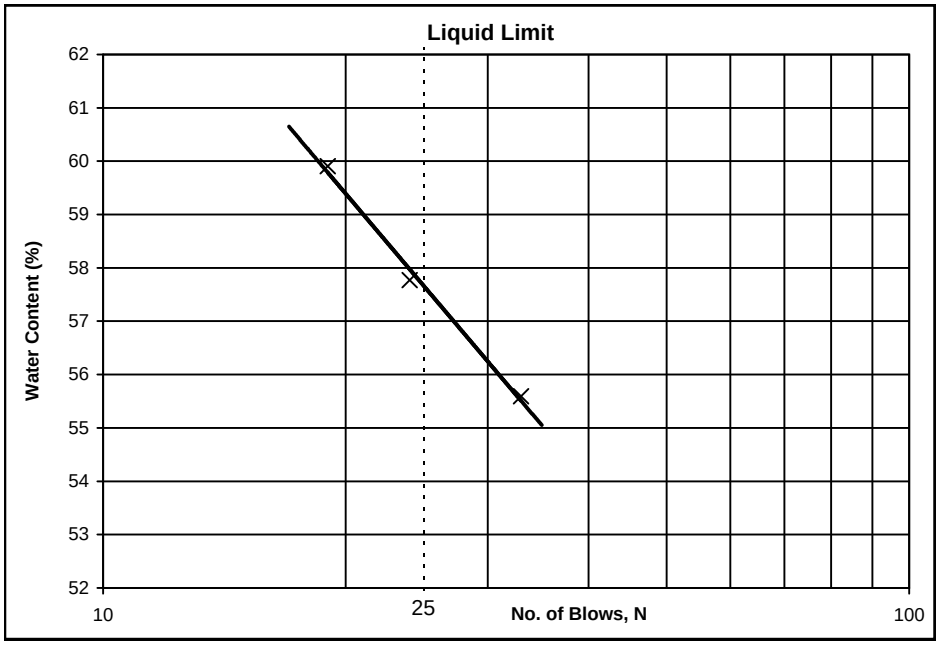
Atterberg Limits Test
ASTM D 4318

Tetra Tech, Inc. (970) 223.9600

Sample Identification	Tt-3 @ 10'A

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	8/7/2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK
Sieved on #40 (Yes or No)	Yes
Preparation (Wet or Dry)	Dry



Liquid Limit Determination

Goal for range of blows	25-35	20-30	15-25
No. of blows, N	33	24	19
Drying Can No.	a12	d8	d3
Mass of can (g)	11.03	11.20	11.17
Mass of wet soil + can (g)	28.13	29.88	31.43
Mass of dry soil + can (g)	22.02	23.04	23.84
Water content (%)	55.6	57.8	59.9

Plastic Limit Determination

Drying Can No.	d29	d32
Mass of can (g)	11.22	11.08
Mass of wet soil + can (g)	20.10	19.79
Mass of dry soil + can (g)	18.70	18.43
Water content (%)	18.7	18.5

Results		***Adj.***
Liquid Limit	57.7	58
Plastic Limit	18.6	19
Plasticity Index	39.1	39

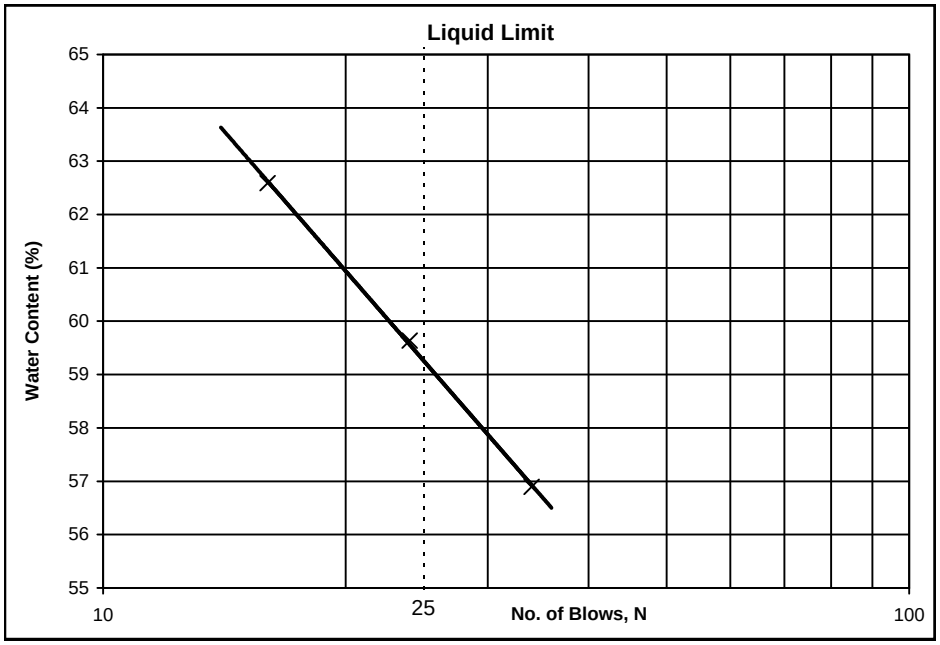
Atterberg Limits Test
ASTM D 4318

Tetra Tech, Inc. (970) 223.9600

Sample Identification	Tt-4 @ 10'A

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	8/7/2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK
Sieved on #40 (Yes or No)	Yes
Preparation (Wet or Dry)	Dry



Liquid Limit Determination

Goal for range of blows	25-35	20-30	15-25
No. of blows, N	34	24	16
Drying Can No.	a9	d33	c5
Mass of can (g)	11.18	11.14	11.04
Mass of wet soil + can (g)	29.16	27.87	29.12
Mass of dry soil + can (g)	22.64	21.62	22.16
Water content (%)	56.9	59.6	62.6

Plastic Limit Determination

Drying Can No.	d10	d31
Mass of can (g)	11.21	11.09
Mass of wet soil + can (g)	16.22	17.10
Mass of dry soil + can (g)	15.41	16.11
Water content (%)	19.3	19.7

Results		***Adj.***
Liquid Limit	59.3	59
Plastic Limit	19.5	20
Plasticity Index	39.8	39

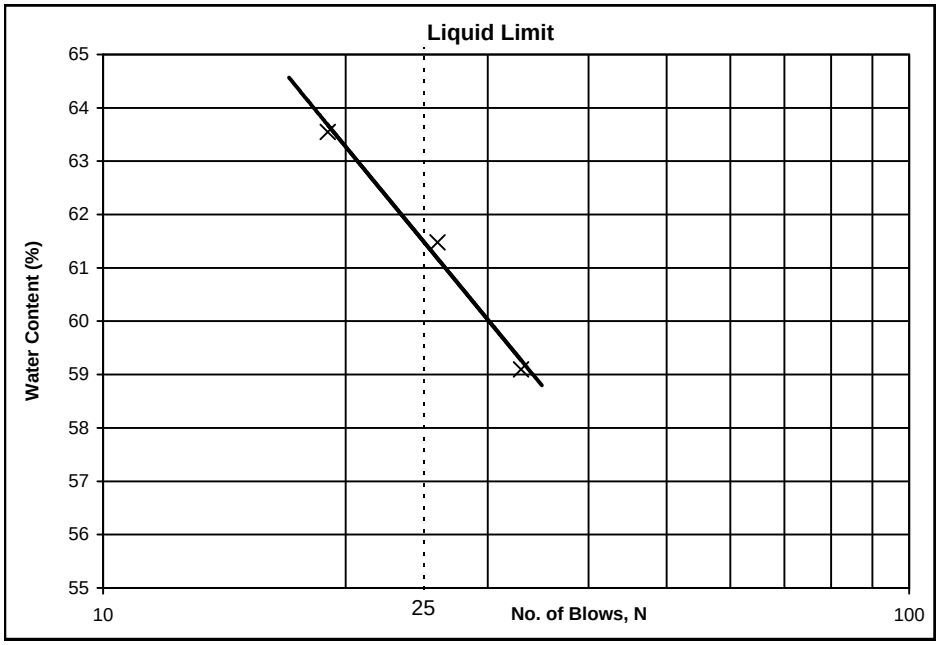
Atterberg Limits Test
ASTM D 4318

Tetra Tech, Inc. (970) 223.9600

Sample Identification	Tt-5 @ 5'- 15'

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	8/7/2009
Sample Type	Bulk
Soil Description	
Remarks	
Tested By	CK
Sieved on #40 (Yes or No)	Yes
Preparation (Wet or Dry)	Dry



Liquid Limit Determination

Goal for range of blows	25-35	20-30	15-25
No. of blows, N	33	26	19
Drying Can No.	d28	a3	b11
Mass of can (g)	11.11	10.91	11.08
Mass of wet soil + can (g)	29.39	28.35	29.25
Mass of dry soil + can (g)	22.60	21.71	22.19
Water content (%)	59.1	61.5	63.5

Plastic Limit Determination

Drying Can No.	a5	b6
Mass of can (g)	10.90	10.72
Mass of wet soil + can (g)	17.32	16.66
Mass of dry soil + can (g)	16.43	15.83
Water content (%)	16.1	16.2

Results		***Adj.***
Liquid Limit	61.5	62
Plastic Limit	16.2	16
Plasticity Index	45.3	46

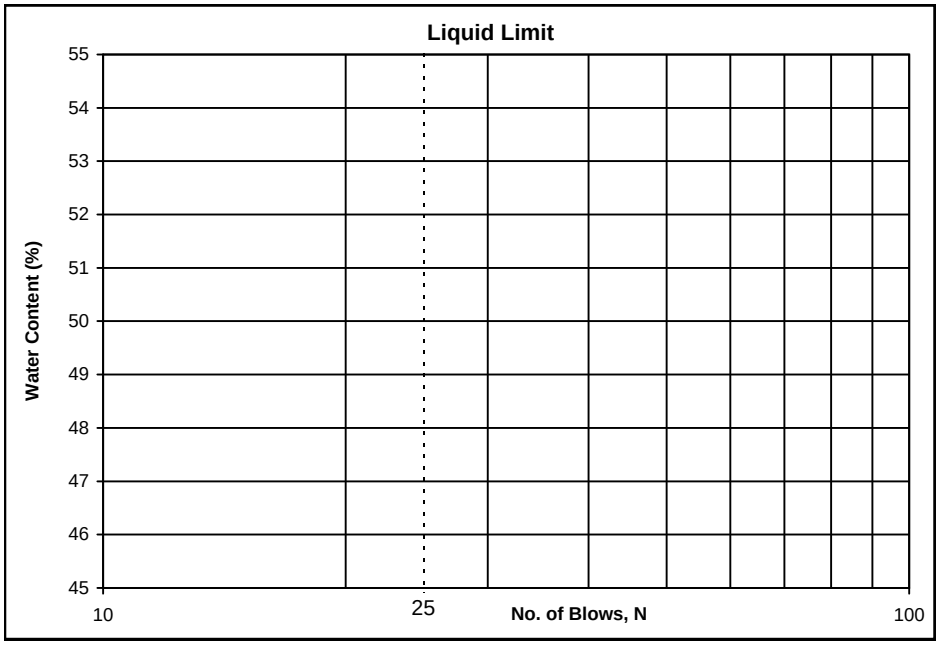
Atterberg Limits Test
ASTM D 4318

Tetra Tech, Inc. (970) 223.9600

Sample Identification	Tt-6 @ 2'- 5'

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	8/7/2009
Sample Type	Bulk
Soil Description	
Remarks	
Tested By	CK
Sieved on #40 (Yes or No)	Yes
Preparation (Wet or Dry)	Dry



Liquid Limit Determination

Goal for range of blows	25-35	20-30	15-25
No. of blows, N			
Drying Can No.			
Mass of can (g)			
Mass of wet soil + can (g)			
Mass of dry soil + can (g)			
Water content (%)			

Plastic Limit Determination

Drying Can No.		
Mass of can (g)		
Mass of wet soil + can (g)		
Mass of dry soil + can (g)		
Water content (%)		

Results		***Adj.***
Liquid Limit		NLL
Plastic Limit		NPL
Plasticity Index		NPI

Granular, Non-plastic

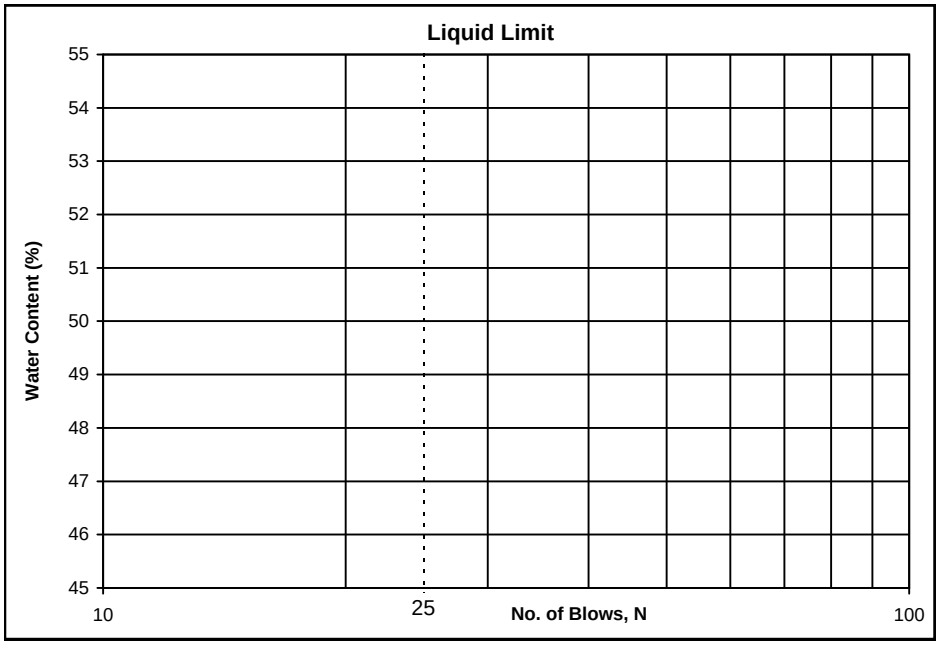
Atterberg Limits Test
ASTM D 4318

Tetra Tech, Inc. (970) 223.9600

Sample Identification	Tt-6 @ 5'A

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	8/7/2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK
Sieved on #40 (Yes or No)	Yes
Preparation (Wet or Dry)	Dry



Liquid Limit Determination

Goal for range of blows	25-35	20-30	15-25
No. of blows, N			
Drying Can No.			
Mass of can (g)			
Mass of wet soil + can (g)			
Mass of dry soil + can (g)			
Water content (%)			

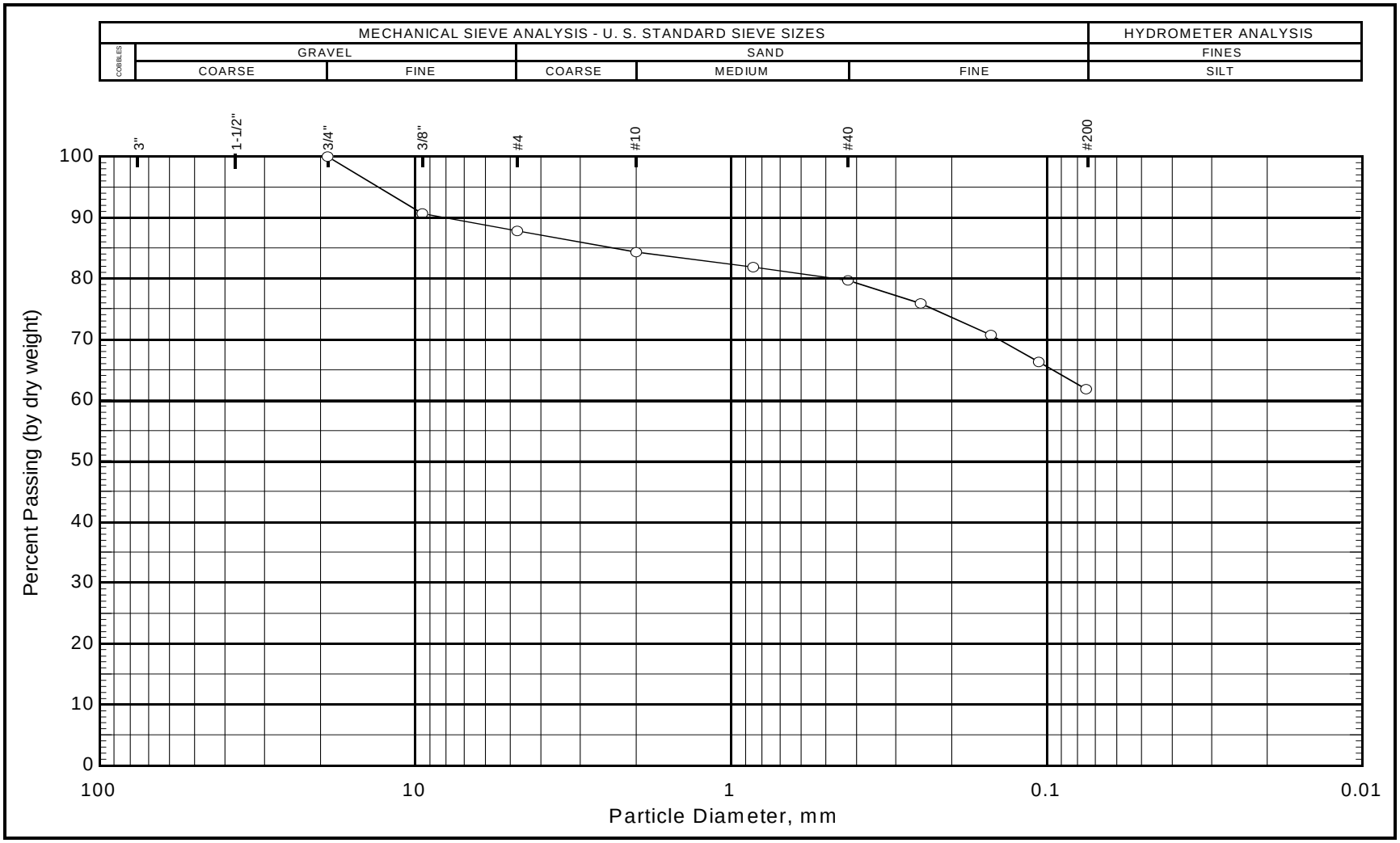
Plastic Limit Determination

Drying Can No.		
Mass of can (g)		
Mass of wet soil + can (g)		
Mass of dry soil + can (g)		
Water content (%)		

Results		***Adj.***
Liquid Limit		NLL
Plastic Limit		NPL
Plasticity Index		NPI

Granular, Non-plastic

Mechanical Grain Size Analysis (Gradation) Results



Particle-size Distribution for
Tt- 2 at 20 feet

Mechanical Grain Size Analysis

Tetra Tech, Inc. 970.223.9600

Sample Identification	Tt-2 @ 20'B

Project Information

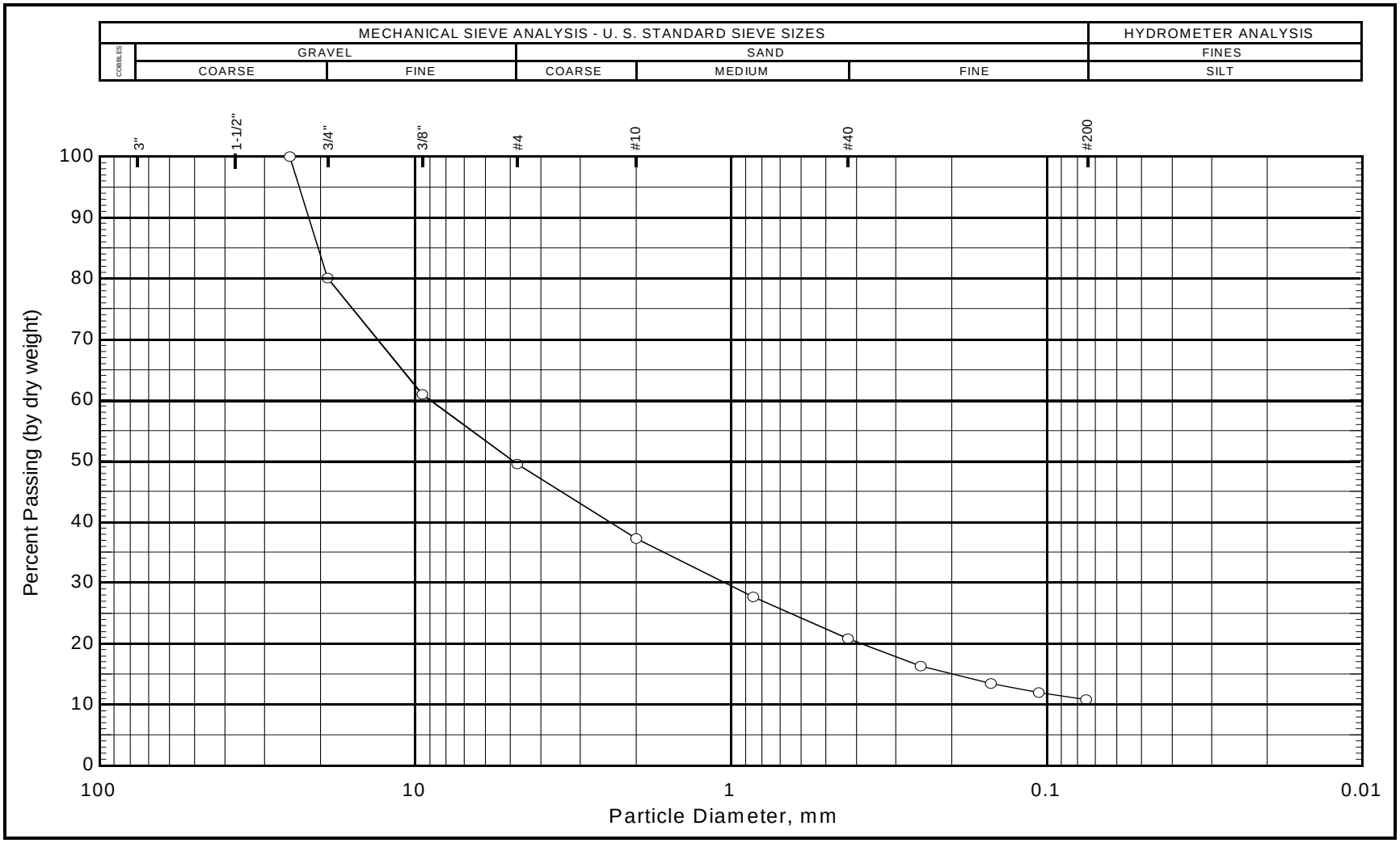
Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	July 31, 2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK

Drying Pan ID	N
Mass Drying Pan (g.)	236.88
Mass Pan + Dry Sample Before Wash (g.)	407.91
Mass of Dry Sample Before Wash (g.)	171.03

Sieve Size (mm)	Sieve #	Individual Mass Retained (g.)	Individual % Retained	Cumulative % Passing
19.0	3/4"		0.0	100.0
9.5	3/8"	15.91	9.3	90.7
4.75	#4	4.90	2.9	87.8
2.00	#10	6.11	3.6	84.3
0.850	#20	4.18	2.4	81.8
0.425	#40	3.69	2.2	79.7
0.250	#60	6.43	3.8	75.9
0.150	#100	8.85	5.2	70.7
0.106	#140	7.50	4.4	66.3
0.075	#200	7.76	4.5	61.8
0.00	Pan	0.55		
TOTAL				

For Use When Washing Wet Sample

Moisture Content (%)		*Wet Soil*	
Tare ID		Tare ID	
Tare Mass (g)		Tare Mass (g)	
Wet Soil + Tare (g)		Wet Soil + Tare (g)	
Dry Soil + Tare		Wet Soil (g)	
Moisture Content (%)	#DIV/0!	Dry Soil (g)	#DIV/0!
		Dry Soil + Tare (g)	#DIV/0!



Particle-size Distribution for
Tt- 2 at 25 feet

Mechanical Grain Size Analysis

Tetra Tech, Inc. 970.223.9600

Sample Identification	Tt-2 @ 25'A

Project Information

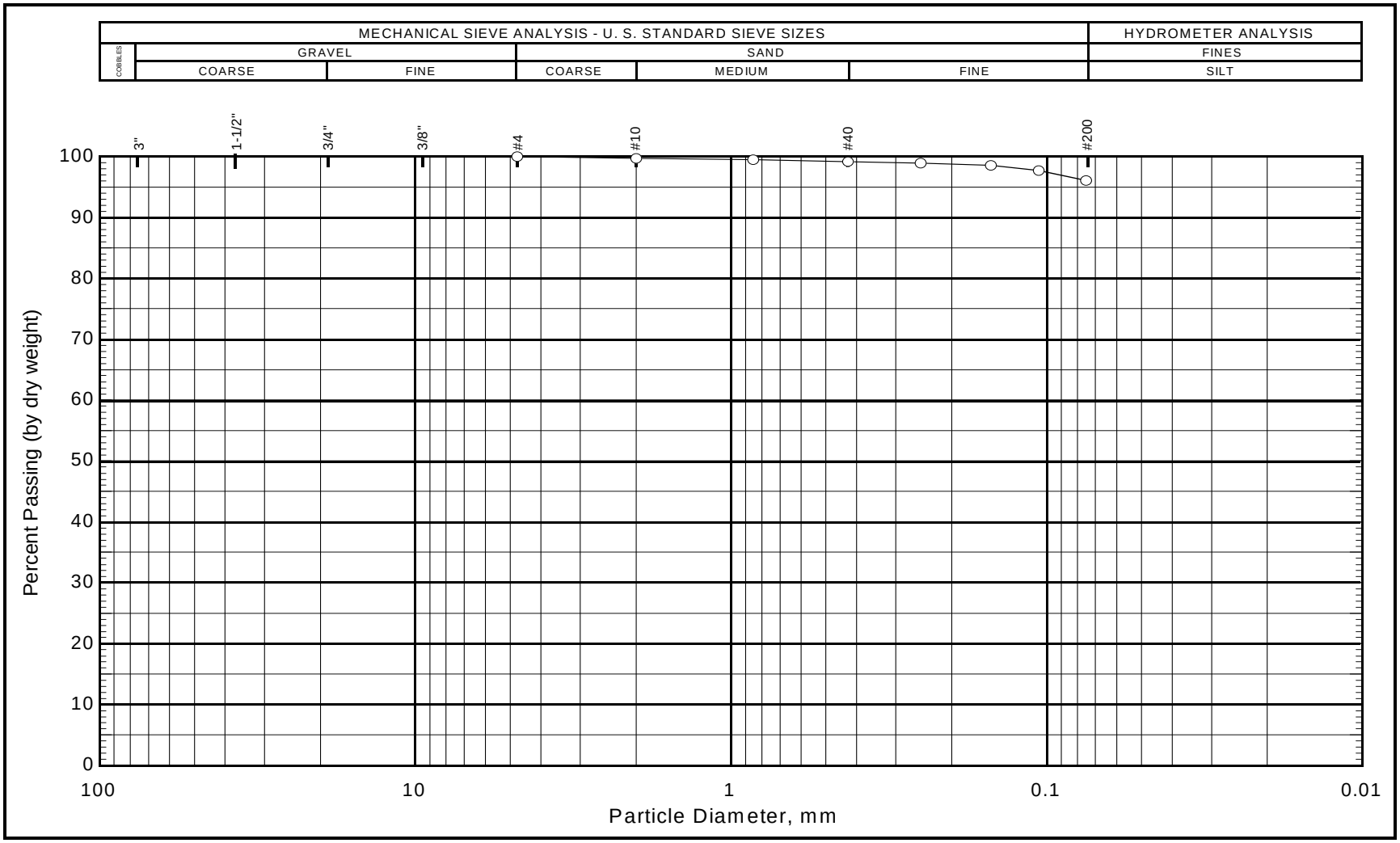
Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	July 31, 2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK

Drying Pan ID	111
Mass Drying Pan (g.)	235.86
Mass Pan + Dry Sample Before Wash (g.)	466.81
Mass of Dry Sample Before Wash (g.)	230.95

Sieve Size (mm)	Sieve #	Individual Mass Retained (g.)	Individual % Retained	Cumulative % Passing
25.0	1"		0.0	100.0
19.0	3/4"	45.85	19.9	80.1
9.5	3/8"	44.23	19.2	61.0
4.75	#4	26.45	11.5	49.5
2.00	#10	28.31	12.3	37.3
0.850	#20	22.04	9.5	27.7
0.425	#40	16.00	6.9	20.8
0.250	#60	10.49	4.5	16.3
0.150	#100	6.36	2.8	13.5
0.106	#140	3.40	1.5	12.0
0.075	#200	2.94	1.3	10.8
0.00	Pan	0.34		
TOTAL				

For Use When Washing Wet Sample

Moisture Content (%)		***Wet Soil***	
Tare ID		Tare ID	
Tare Mass (g)		Tare Mass (g)	
Wet Soil + Tare (g)		Wet Soil + Tare (g)	
Dry Soil + Tare		Wet Soil (g)	
Moisture Content (%)	#DIV/0!	Dry Soil (g)	#DIV/0!
		Dry Soil + Tare (g)	#DIV/0!



Particle-size Distribution for
Tt- 3 at 10 feet

Mechanical Grain Size Analysis

Tetra Tech, Inc. 970.223.9600

Sample Identification	Tt-3 @ 10'A

Project Information

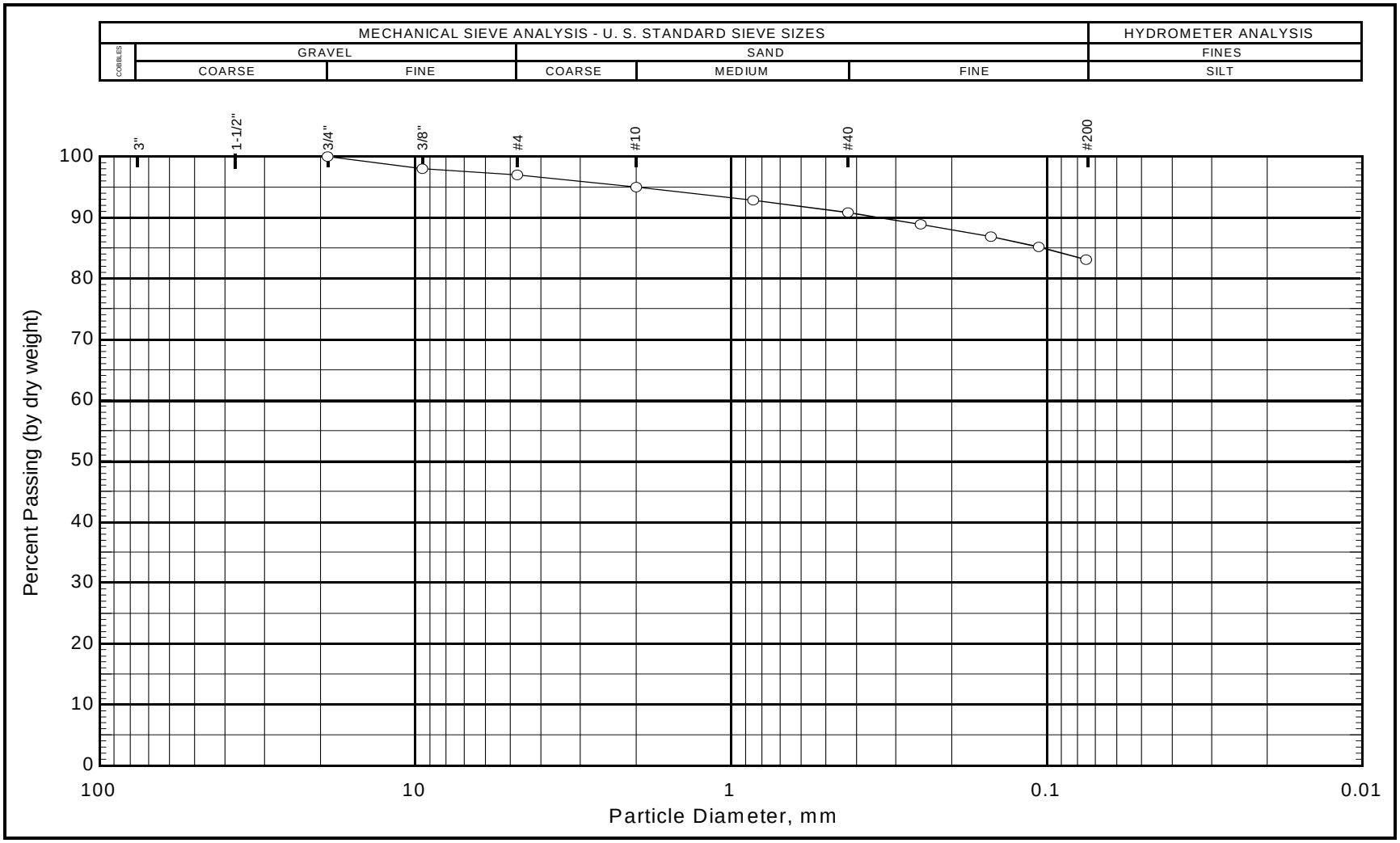
Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	July 31, 2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK

Drying Pan ID	110
Mass Drying Pan (g.)	233.7
Mass Pan + Dry Sample Before Wash (g.)	429.39
Mass of Dry Sample Before Wash (g.)	195.69

Sieve Size (mm)	Sieve #	Individual Mass Retained (g.)	Individual % Retained	Cumulative % Passing
4.75	#4	0.00	0.0	100.0
2.00	#10	0.59	0.3	99.7
0.850	#20	0.49	0.3	99.4
0.425	#40	0.51	0.3	99.2
0.250	#60	0.40	0.2	99.0
0.150	#100	0.81	0.4	98.6
0.106	#140	1.71	0.9	97.7
0.075	#200	3.21	1.6	96.1
0.00	Pan	0.23		
TOTAL				

For Use When Washing Wet Sample

Moisture Content (%)		***Wet Soil***	
Tare ID		Tare ID	
Tare Mass (g)		Tare Mass (g)	
Wet Soil + Tare (g)		Wet Soil + Tare (g)	
Dry Soil + Tare		Wet Soil (g)	
Moisture Content (%)	#DIV/0!	Dry Soil (g)	#DIV/0!
		Dry Soil + Tare (g)	#DIV/0!



Particle-size Distribution for
Tt- 5 at 5 feet to 15 feet

Mechanical Grain Size Analysis

Tetra Tech, Inc. 970.223.9600

Sample Identification	Tt-5 @ 5'- 15'

Project Information

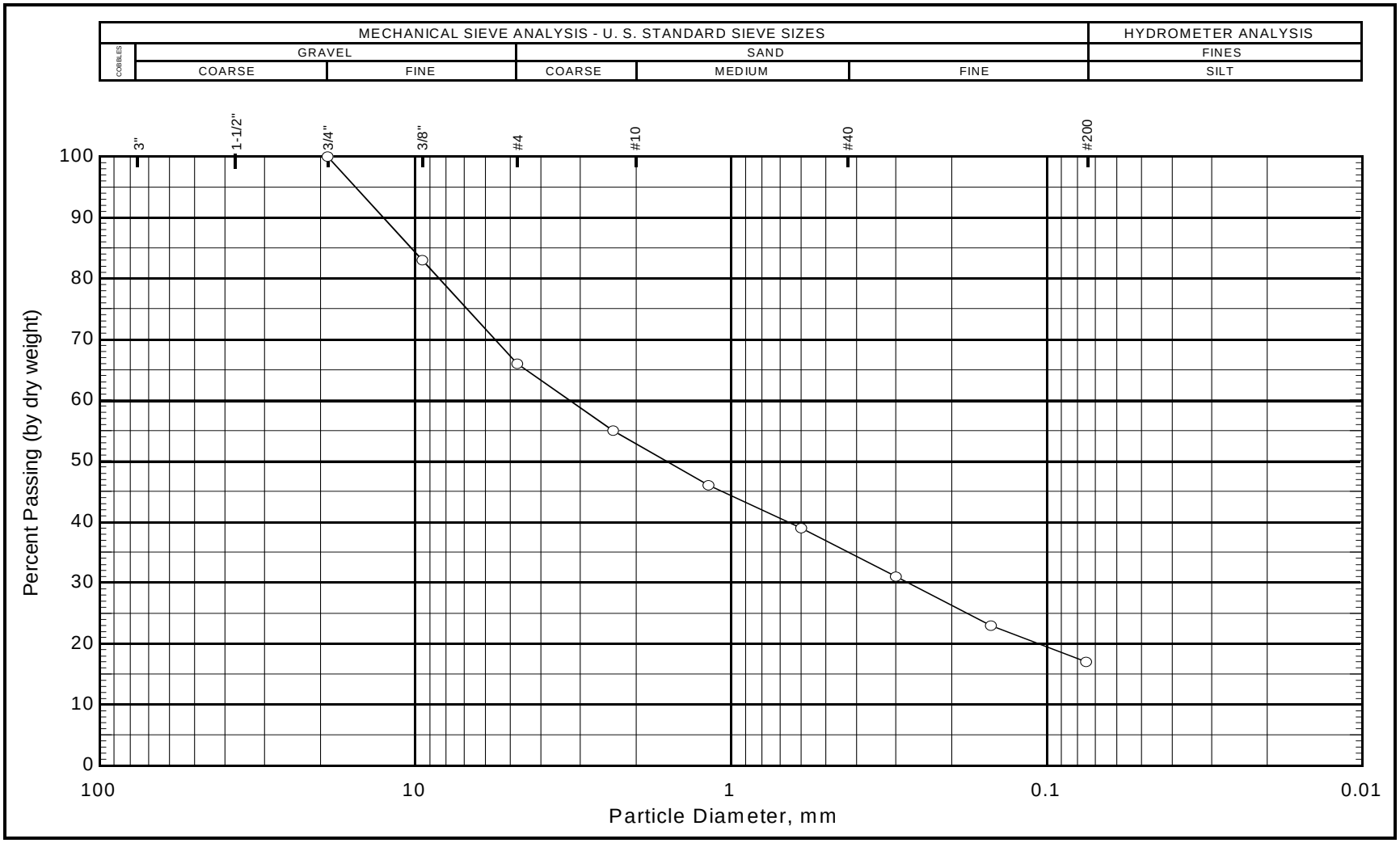
Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	August 3, 2009
Sample Type	Bulk
Soil Description	
Remarks	
Tested By	CK

Drying Pan ID	107
Mass Drying Pan (g.)	234.23
Mass Pan + Dry Sample Before Wash (g.)	611.42
Mass of Dry Sample Before Wash (g.)	377.19

Sieve Size (mm)	Sieve #	Individual Mass Retained (g.)	Individual % Retained	Cumulative % Passing
19.0	3/4"		0.0	100.0
9.5	3/8"	7.49	2.0	98.0
4.75	#4	3.91	1.0	97.0
2.00	#10	7.50	2.0	95.0
0.850	#20	8.41	2.2	92.8
0.425	#40	7.53	2.0	90.8
0.250	#60	7.01	1.9	88.9
0.150	#100	7.58	2.0	86.9
0.106	#140	6.50	1.7	85.2
0.075	#200	7.80	2.1	83.1
0.00	Pan	0.35		
TOTAL				

For Use When Washing Wet Sample

Moisture Content (%)		***Wet Soil***	
Tare ID		Tare ID	
Tare Mass (g)		Tare Mass (g)	
Wet Soil + Tare (g)		Wet Soil + Tare (g)	
Dry Soil + Tare		Wet Soil (g)	
Moisture Content (%)	#DIV/0!	Dry Soil (g)	#DIV/0!
		Dry Soil + Tare (g)	#DIV/0!



Particle-size Distribution for
Tt- 6 at 2 feet to 5 feet

Mechanical Grain Size Analysis

Tetra Tech, Inc. 970.223.9600

Sample Identification	Tt-6 @ 2'- 5'

Project Information

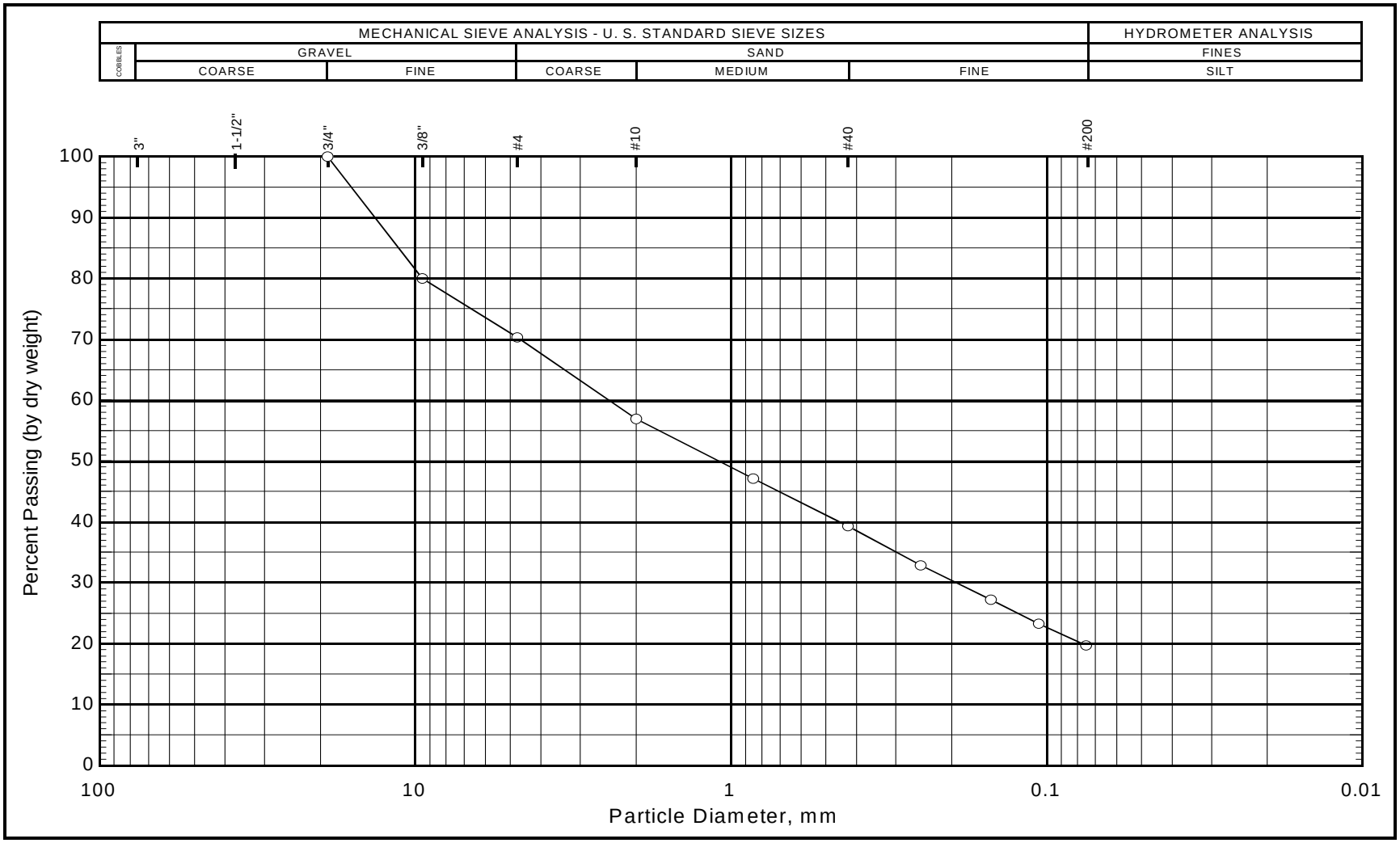
Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	August 3, 2009
Sample Type	Bulk
Soil Description	
Remarks	
Tested By	CK

Drying Pan ID	102
Mass Drying Pan (g.)	235.5
Mass Pan + Dry Sample Before Wash (g.)	1273.29
Mass of Dry Sample Before Wash (g.)	1037.79

Sieve Size (mm)	Sieve #	Individual Mass Retained (g.)	Individual % Retained	Cumulative % Passing
19.0	3/4"		0.0	100
9.5	3/8"	172.49	16.6	83
4.75	#4	184.71	17.8	66
2.36	#8	108.07	10.4	55
1.18	#16	90.76	8.7	46
0.600	#30	80.55	7.8	39
0.300	#50	81.14	7.8	31
0.150	#100	76.62	7.4	23
0.075	#200	65.16	6.3	17
0.00	Pan	6.92		
TOTAL				

For Use When Washing Wet Sample

Moisture Content (%)		***Wet Soil***	
Tare ID		Tare ID	
Tare Mass (g)		Tare Mass (g)	
Wet Soil + Tare (g)		Wet Soil + Tare (g)	
Dry Soil + Tare		Wet Soil (g)	
Moisture Content (%)	#DIV/0!	Dry Soil (g)	#DIV/0!
		Dry Soil + Tare (g)	#DIV/0!



Particle-size Distribution for
Tt- 6 at 5 feet

Mechanical Grain Size Analysis

Tetra Tech, Inc. 970.223.9600

Sample Identification	Tt-6 @ 5'A

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	August 3, 2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK

Drying Pan ID	104
Mass Drying Pan (g.)	284.96
Mass Pan + Dry Sample Before Wash (g.)	411.14
Mass of Dry Sample Before Wash (g.)	126.18

Sieve Size (mm)	Sieve #	Individual Mass Retained (g.)	Individual % Retained	Cumulative % Passing
19.0	3/4"		0.0	100.0
9.5	3/8"	25.22	20.0	80.0
4.75	#4	12.26	9.7	70.3
2.00	#10	16.87	13.4	56.9
0.850	#20	12.36	9.8	47.1
0.425	#40	9.87	7.8	39.3
0.250	#60	8.05	6.4	32.9
0.150	#100	7.25	5.7	27.2
0.106	#140	4.86	3.9	23.3
0.075	#200	4.53	3.6	19.7
0.00	Pan	0.66		
TOTAL				

For Use When Washing Wet Sample

Moisture Content (%)		***Wet Soil***	
Tare ID		Tare ID	
Tare Mass (g)		Tare Mass (g)	
Wet Soil + Tare (g)		Wet Soil + Tare (g)	
Dry Soil + Tare		Wet Soil (g)	
Moisture Content (%)	#DIV/0!	Dry Soil (g)	#DIV/0!
		Dry Soil + Tare (g)	#DIV/0!

Minus #200 Sieve Only

-200 Sieve Only

Tetra Tech, Inc. 970.223.9600

Sample Identification	Tt-2 @ 19'- 21'

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	July 31, 2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK

Drying Pan ID	M
Mass Drying Pan (g.)	238.09
Mass Pan + Dry Sample Before Wash (g.)	560.52
Mass of Dry Sample Before Wash (g.)	322.43

Sieve Size (mm)	Sieve #	Individual Mass Retained (g.)	Individual % Retained	Cumulative % Passing
0.075	#200	119.59	37.1	62.9

For Use When Washing Wet Sample

Moisture Content (%)		*Wet Soil*	
Tare ID		Tare ID	
Tare Mass (g)		Tare Mass (g)	
Wet Soil + Tare (g)		Wet Soil + Tare (g)	
Dry Soil + Tare		Wet Soil (g)	
Moisture Content (%)		Dry Soil (g)	
		Dry Soil + Tare (g)	

-200 Sieve Only

Tetra Tech, Inc. 970.223.9600

Sample Identification	Tt-2 @ 35'A

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	July 31, 2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK

Drying Pan ID	108
Mass Drying Pan (g.)	232.46
Mass Pan + Dry Sample Before Wash (g.)	444.75
Mass of Dry Sample Before Wash (g.)	212.29

Sieve Size (mm)	Sieve #	Individual Mass Retained (g.)	Individual % Retained	Cumulative % Passing
0.075	#200	2.32	1.1	98.9

For Use When Washing Wet Sample

Moisture Content (%)		*Wet Soil*	
Tare ID		Tare ID	
Tare Mass (g)		Tare Mass (g)	
Wet Soil + Tare (g)		Wet Soil + Tare (g)	
Dry Soil + Tare		Wet Soil (g)	
Moisture Content (%)		Dry Soil (g)	
		Dry Soil + Tare (g)	

-200 Sieve Only

Tetra Tech, Inc. 970.223.9600

Sample Identification	Tt-4 @ 10'A

Project Information

Project Name	Rocky Flats SPPTS
Project Number	181919A
Date	July 31, 2009
Sample Type	California Tube
Soil Description	
Remarks	
Tested By	CK

Drying Pan ID	109
Mass Drying Pan (g.)	240.08
Mass Pan + Dry Sample Before Wash (g.)	397.82
Mass of Dry Sample Before Wash (g.)	157.74

Sieve Size (mm)	Sieve #	Individual Mass Retained (g.)	Individual % Retained	Cumulative % Passing
0.075	#200	1.48	0.9	99.1

For Use When Washing Wet Sample

Moisture Content (%)		*Wet Soil*	
Tare ID		Tare ID	
Tare Mass (g)		Tare Mass (g)	
Wet Soil + Tare (g)		Wet Soil + Tare (g)	
Dry Soil + Tare		Wet Soil (g)	
Moisture Content (%)		Dry Soil (g)	
		Dry Soil + Tare (g)	

Total Organics Content and Water Soluble Sulfate

Laboratory Report

Client:
TetraTech
3801 Automation Way, Ste. 100
Fort Collins CO 80525
Attn: Charlie Klapproth

Date Sampled: 8/1/2009 9:30:00 AM
Date Received: 8/3/2009
Batch No: 2733
Laboratory ID: S092151054
Matrix: Solid Grab
Sample Name: Tt-5@25'B

Project # 1573-017

Analysis	Results	Units	MRL	Method	Analysis Date	Analyst	Sent Out	Laboratory
Sulfate	157	ppm	0.5	EPA 300.0	8/5/2009	CMB	☐	

Stewart Environmental Consultants, Inc.
3801 Automation Way, Suite 200 ♦ Fort Collins, CO 80525
Phone 970-226-5500 ♦ Fax:970-226-4946

Client:
TetraTech
3801 Automation Way, Ste. 100
Fort Collins CO 80525
Attn: Charlie Klapproth

Date Sampled: 8/1/2009 9:30:00 AM
Date Received: 8/3/2009
Batch No: 2733
Laboratory ID: S092151055
Matrix: Solid Grab
Sample Name: Tt-2@19'-21'

Project # 1573-017

At 750°C

					Analysis		Sent
Solids/Total	84.1	%	1	SM 2540 C	8/10/2009	TML	☐
Solids/Total Volatile	5.45	%	1	SM 2540 G	8/11/2009	TML	☐

Stewart Environmental Consultants, Inc.
3801 Automation Way, Suite 200 ♦ Fort Collins, CO 80525
Phone 970-226-5500 ♦ Fax:970-226-4946

Client:
TetraTech
3801 Automation Way, Ste. 100
Fort Collins CO 80525
Attn: Charlie Klapproth

Date Sampled: 8/1/2009 9:30:00 AM
Date Received: 8/3/2009
Batch No: 2733
Laboratory ID: S09215105A
Matrix: Solid Grab
Sample Name: Tt-4@2'A

Project # 1573-017

Analysis	Results	Units	MRL	Method	Analysis Date	Analyst	Sent Out	Laboratory
Sulfate	102	ppm	0.5	EPA 300.0	8/5/2009	CMB	☐	

Stewart Environmental Consultants, Inc.
3801 Automation Way, Suite 200 ♦ Fort Collins, CO 80525
Phone 970-226-5500 ♦ Fax:970-226-4946

Client:
TetraTech
3801 Automation Way, Ste. 100
Fort Collins CO 80525

Attn: Charlie Klapproth

Date Sampled:	8/1/2009	9:30:00 AM
Date Received:	8/3/2009	
Batch No:	2733	
Laboratory ID:	S092151105	
Matrix:	Solid	Grab
Sample Name:	Tt-4@20'B	

Project # 1573-017

At 750°C

					Analysis		Sent
Solids/Total	86	%	1	SM 2540 C	8/10/2009	TML	☐
Solids/Total Volatile	4	%	1	SM 2540 G	8/11/2009	TML	☐

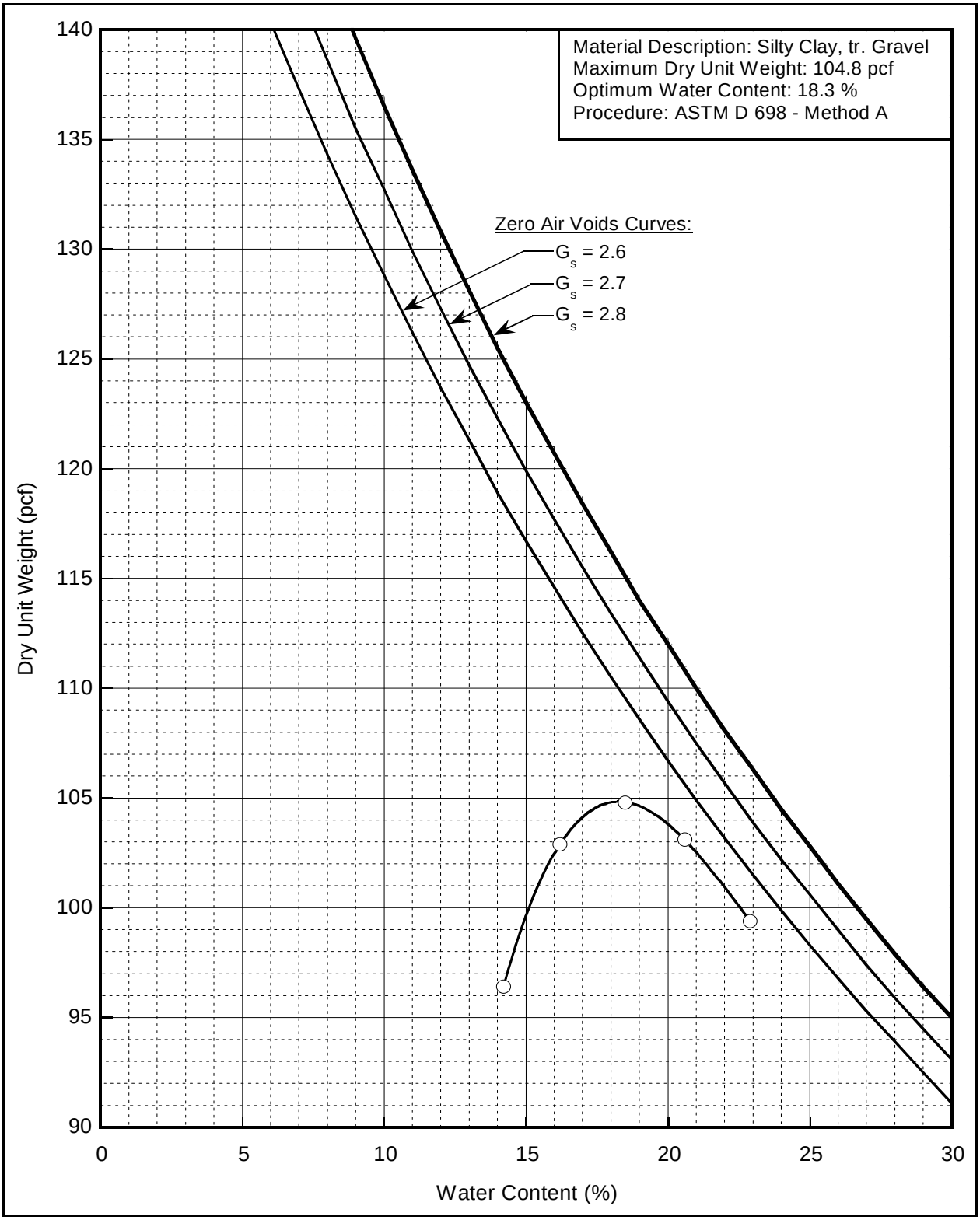
Results Approved by: M. Glavanovich

Michael Glavanovich, Laboratory Manager

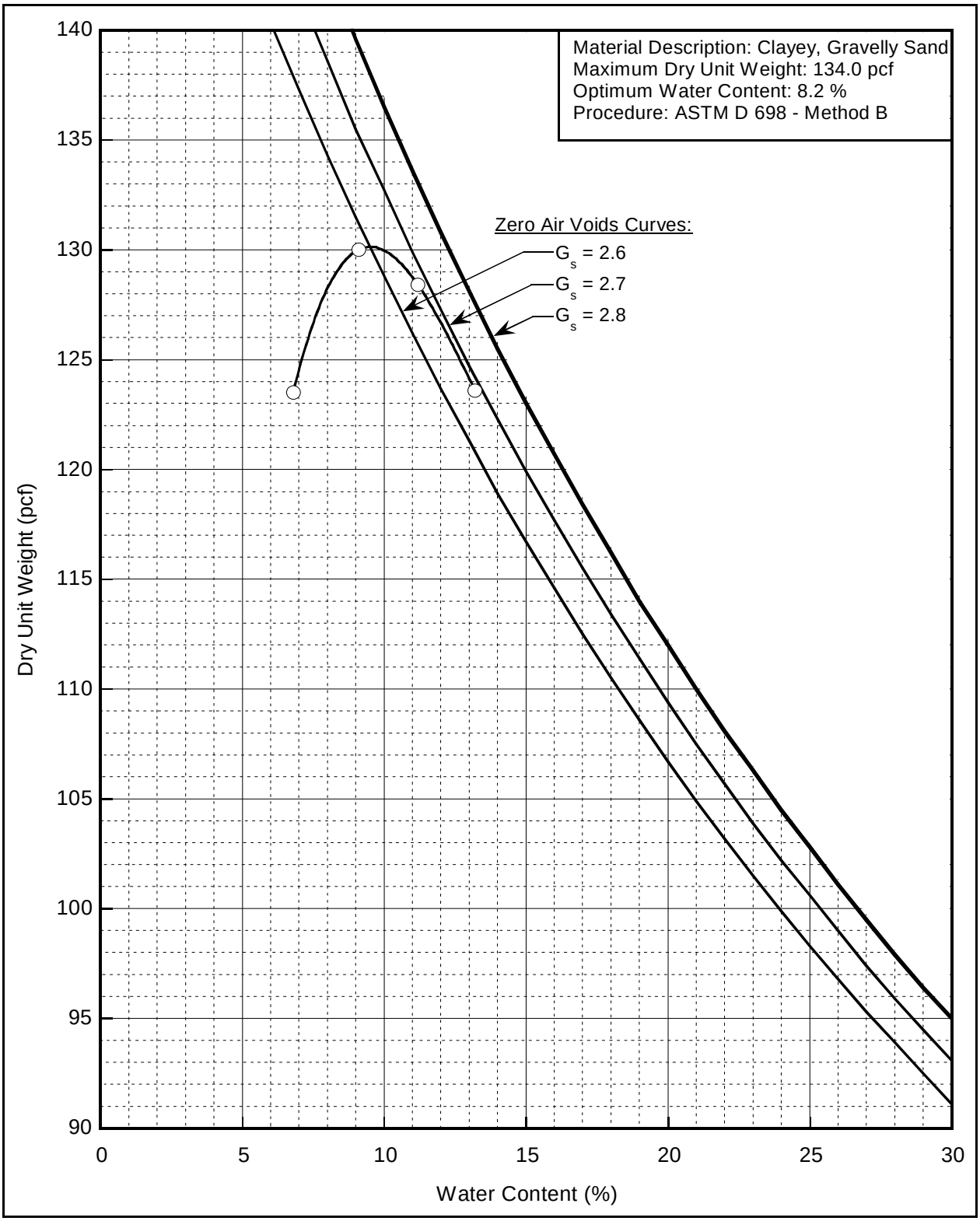
Date Reported: **8/12/2009**

Stewart Environmental Consultants, Inc.
3801 Automation Way, Suite 200 ♦ Fort Collins, CO 80525
Phone 970-226-5500 ♦ Fax:970-226-4946

Standard Proctor Laboratory Compaction Test Results



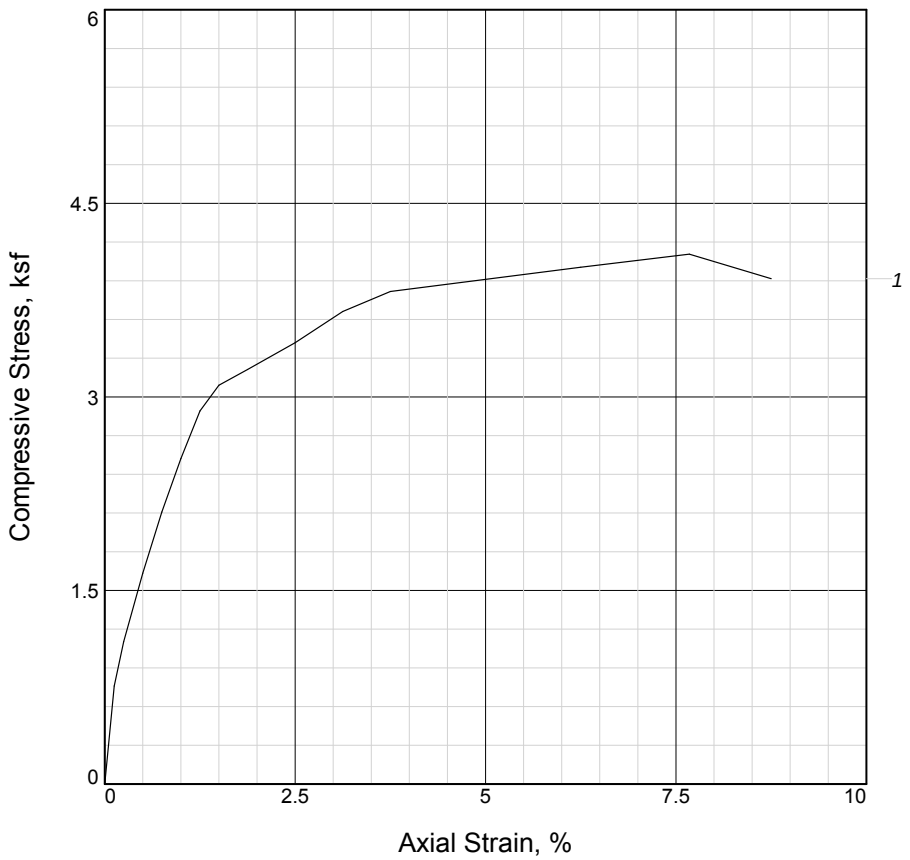
Laboratory Compaction Curve for Tt-5 at 5-15 feet



Laboratory Compaction Curve for Tt-6 at 2-5 feet

Unconfined Compression and Direct Shear Test Results

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, ksf	4.106			
Undrained shear strength, ksf	2.053			
Failure strain, %	7.7			
Strain rate, in./min.	0.020			
Water content, %	15.5			
Wet density, pcf	121.7			
Dry density, pcf	105.3			
Saturation, %	69.8			
Void ratio	0.6002			
Specimen diameter, in.	1.940			
Specimen height, in.	4.000			
Height/diameter ratio	2.06			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.70	**Type:** Undisturbed

Project No.: 114-181919A

Date Sampled:

Remarks:

Client: Stoller

Project: Rocky Flats-SPPTS

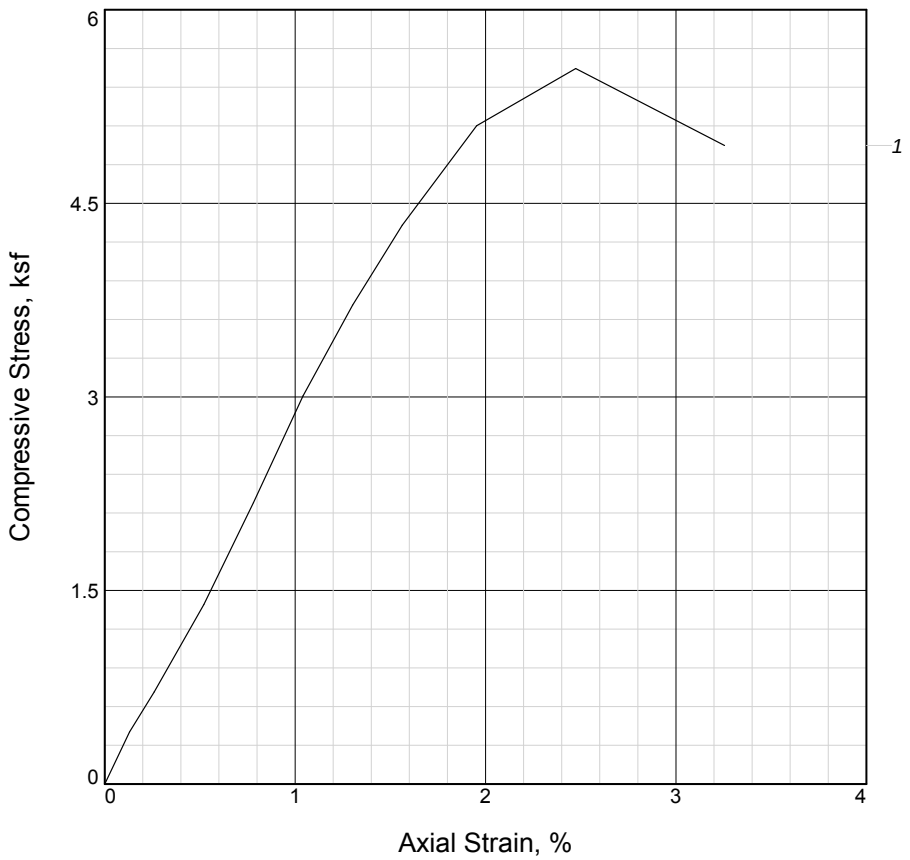
Source of Sample: Tt-1 **Depth:** 10'A

UNCONFINED COMPRESSION TEST

Figure B1

Tetra Tech, Inc.

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, ksf	5.544			
Undrained shear strength, ksf	2.772			
Failure strain, %	2.5			
Strain rate, in./min.	0.020			
Water content, %	16.3			
Wet density, pcf	114.8			
Dry density, pcf	98.7			
Saturation, %	62.2			
Void ratio	0.7083			
Specimen diameter, in.	1.940			
Specimen height, in.	3.840			
Height/diameter ratio	1.98			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.70	**Type:** Undisturbed

Project No.: 114-181919A

Date Sampled:

Remarks:

Client: Stoller

Project: Rocky Flats-SPPTS

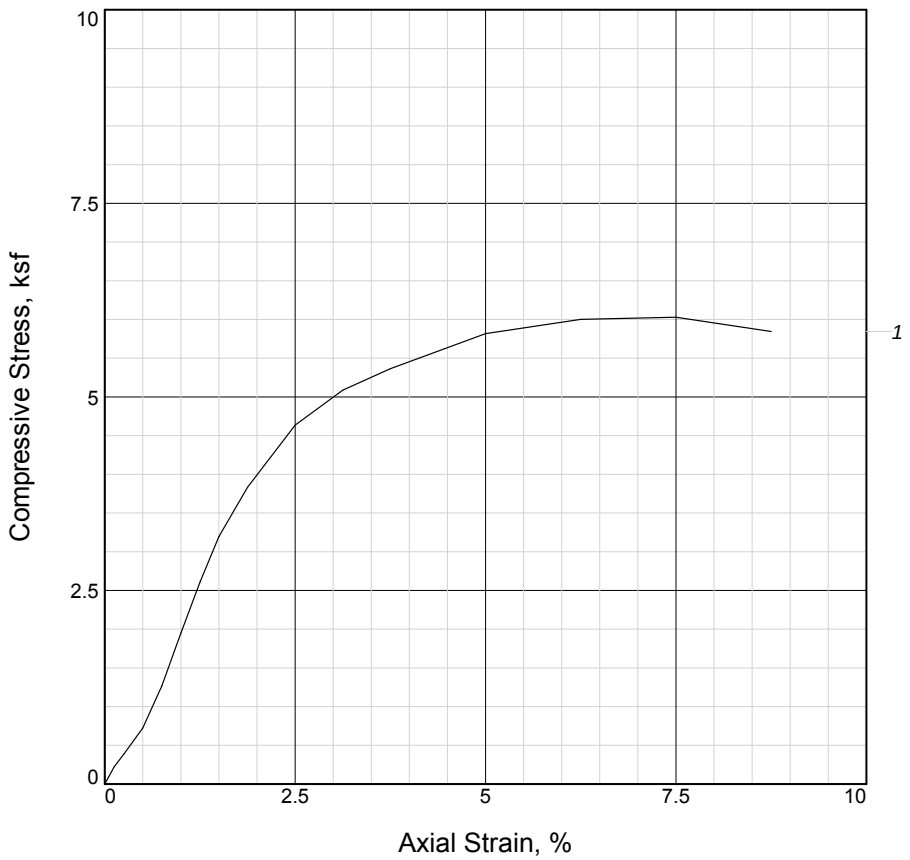
Source of Sample: Tt-3 **Depth:** 35'A

UNCONFINED COMPRESSION TEST

Figure B2

Tetra Tech, Inc.

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, ksf	6.029			
Undrained shear strength, ksf	3.015			
Failure strain, %	7.5			
Strain rate, in./min.	0.020			
Water content, %	18.6			
Wet density, pcf	126.1			
Dry density, pcf	106.3			
Saturation, %	85.9			
Void ratio	0.5856			
Specimen diameter, in.	1.940			
Specimen height, in.	4.000			
Height/diameter ratio	2.06			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.70	**Type:** Undisturbed

Project No.: 114-181919A

Date Sampled:

Remarks:

Client: Stoller

Project: Rocky Flats-SPPTS

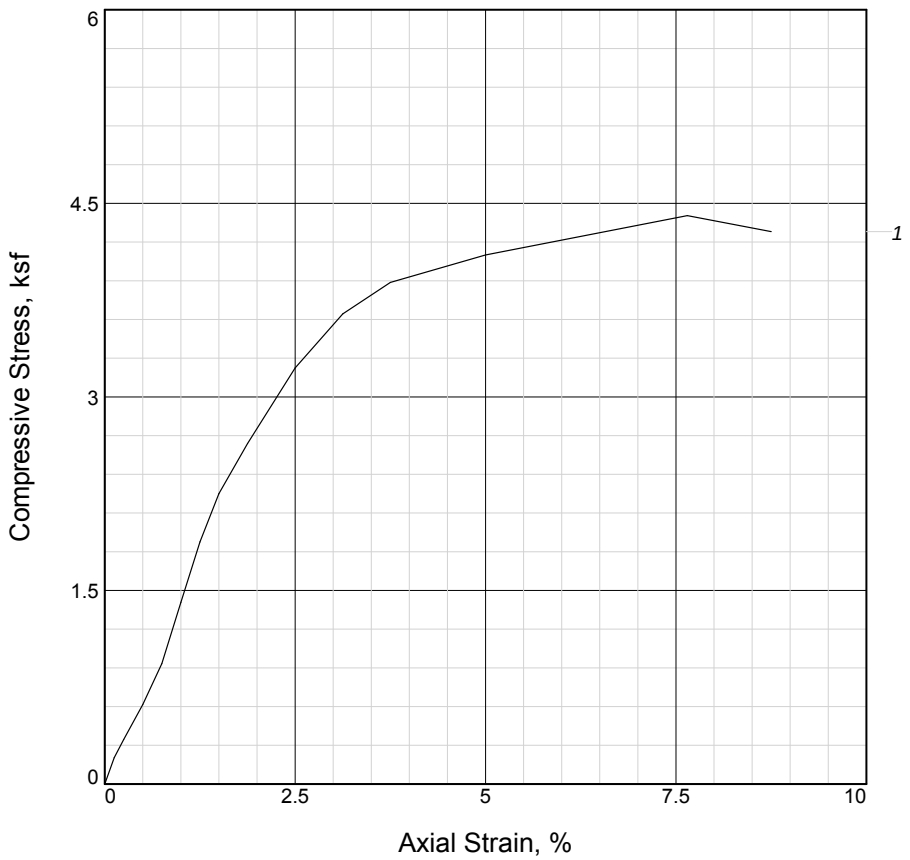
Source of Sample: Tt-4 **Depth:** 5'A

UNCONFINED COMPRESSION TEST

Tetra Tech, Inc.

Figure B3

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, ksf	4.404			
Undrained shear strength, ksf	2.202			
Failure strain, %	7.6			
Strain rate, in./min.	0.020			
Water content, %	17.0			
Wet density, pcf	129.5			
Dry density, pcf	110.8			
Saturation, %	87.8			
Void ratio	0.5219			
Specimen diameter, in.	1.940			
Specimen height, in.	4.000			
Height/diameter ratio	2.06			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.70	**Type:** Undisturbed

Project No.: 114-181919A

Date Sampled:

Remarks:

Client: Stoller

Project: Rocky Flats-SPPTS

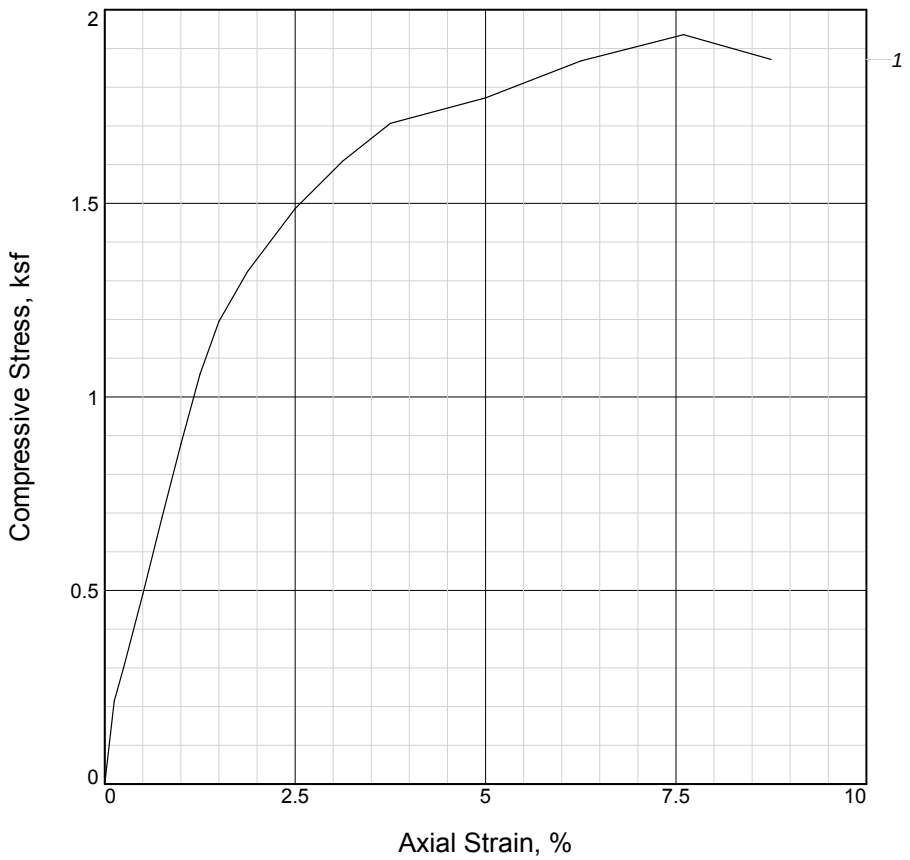
Source of Sample: Tt-5 **Depth:** 2'A

UNCONFINED COMPRESSION TEST

Figure B4

Tetra Tech, Inc.

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, ksf	1.936			
Undrained shear strength, ksf	0.968			
Failure strain, %	7.6			
Strain rate, in./min.	0.020			
Water content, %	20.9			
Wet density, pcf	128.2			
Dry density, pcf	106.1			
Saturation, %	95.7			
Void ratio	0.5889			
Specimen diameter, in.	1.940			
Specimen height, in.	4.000			
Height/diameter ratio	2.06			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.70	**Type:** Undisturbed

Project No.: 114-181919A

Date Sampled:

Remarks:

Client: Stoller

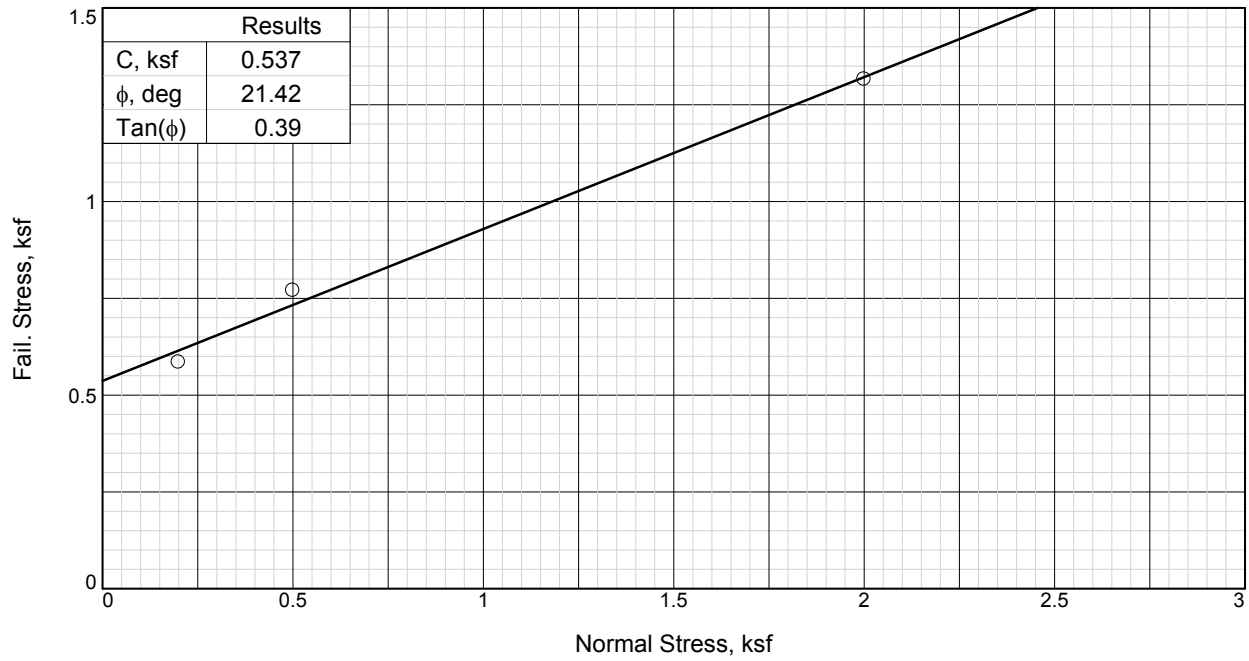
Project: Rocky Flats-SPPTS

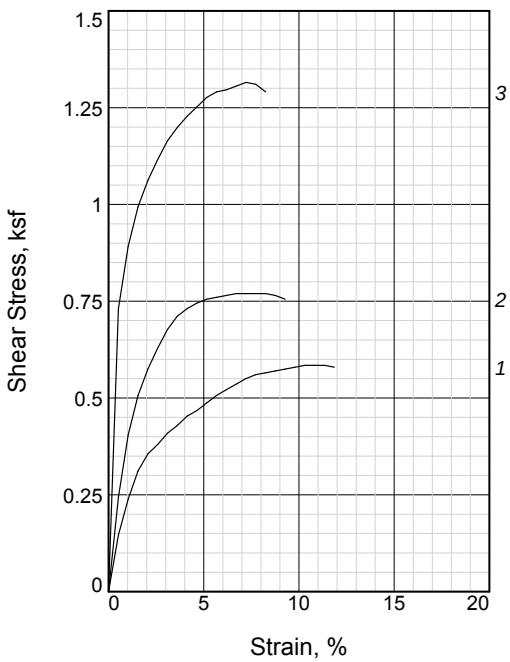
Source of Sample: Tt-6 **Depth:** 15'A

UNCONFINED COMPRESSION TEST

Tetra Tech, Inc.

Figure B5





Sample No.		1	2	3
Initial	Water Content, %	15.2	15.2	15.2
	Dry Density, pcf	117.7	113.4	110.9
	Saturation, %	94.9	84.3	78.8
	Void Ratio	0.4318	0.4860	0.5196
	Diameter, in.	1.940	1.940	1.940
	Height, in.	0.500	0.500	0.500
At Test	Water Content, %	25.2	24.1	23.7
	Dry Density, pcf	117.4	112.4	108.2
	Saturation, %	156.4	130.0	114.7
	Void Ratio	0.4358	0.5000	0.5576
	Diameter, in.	1.940	1.940	1.940
	Height, in.	0.501	0.505	0.512
Normal Stress, ksf		0.200	0.500	2.000
Fail. Stress, ksf		0.585	0.770	1.315
Strain, %		10.3	6.7	7.2
Ult. Stress, ksf				
Strain, %				
Strain rate, in./min.		0.004	0.004	0.004

Sample Type: Undisturbed
Description:

Assumed Specific Gravity= 2.70
Remarks:

Figure B6

Client: Stoller

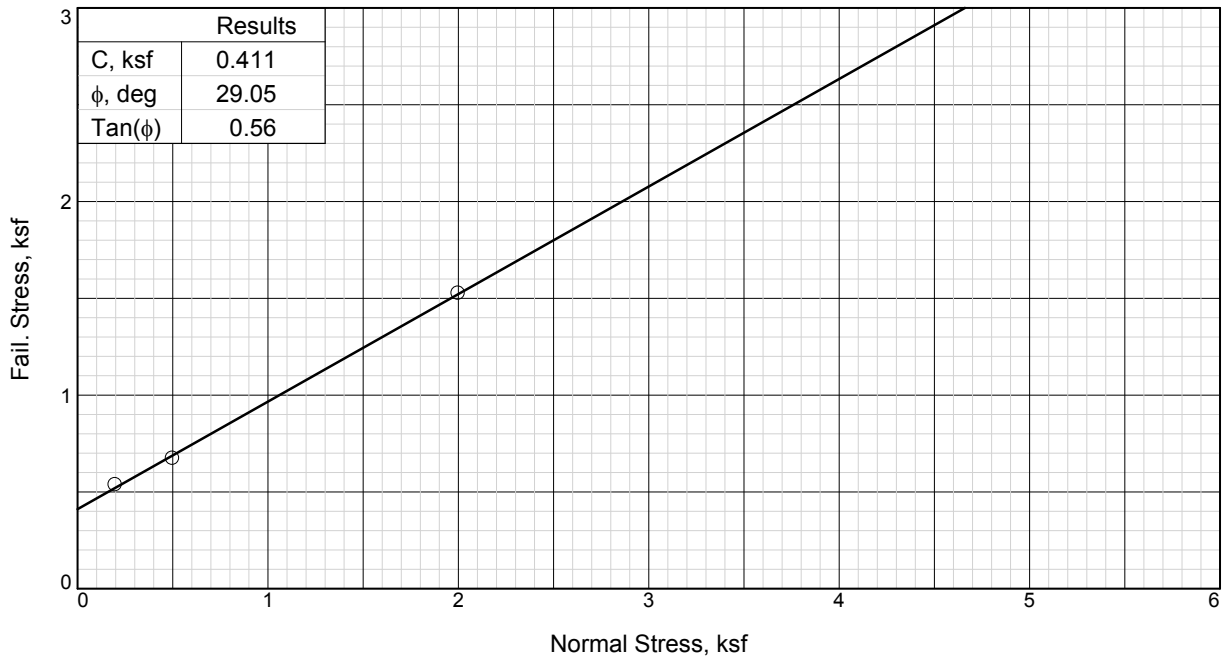
Project: Rocky Flats-SPPTS

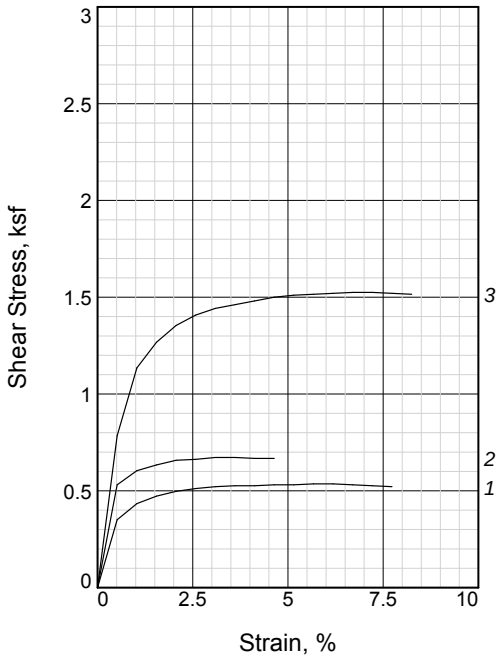
Source of Sample: Tt-1 **Depth:** 2'B

Proj. No.: 114-181919A **Date Sampled:**

DIRECT SHEAR TEST REPORT

Tetra Tech, Inc.





Sample No.		1	2	3
Initial	Water Content, %	19.4	19.4	19.4
	Dry Density, pcf	99.7	100.3	103.0
	Saturation, %	76.0	77.1	82.3
	Void Ratio	0.6906	0.6804	0.6360
	Diameter, in.	1.940	1.940	1.940
	Height, in.	0.500	0.500	0.500
At Test	Water Content, %	30.6	29.5	27.8
	Dry Density, pcf	99.3	98.9	98.6
	Saturation, %	118.3	113.3	105.6
	Void Ratio	0.6970	0.7036	0.7099
	Diameter, in.	1.940	1.940	1.940
	Height, in.	0.502	0.507	0.523
Normal Stress, ksf		0.200	0.500	2.000
Fail. Stress, ksf		0.536	0.672	1.525
Strain, %		5.7	3.1	6.7
Ult. Stress, ksf				
Strain, %				
Strain rate, in./min.		0.004	0.004	0.004

Sample Type: Undisturbed
Description:

Assumed Specific Gravity= 2.70
Remarks:

Figure B7

Client: Stoller

Project: Rocky Flats-SPPTS

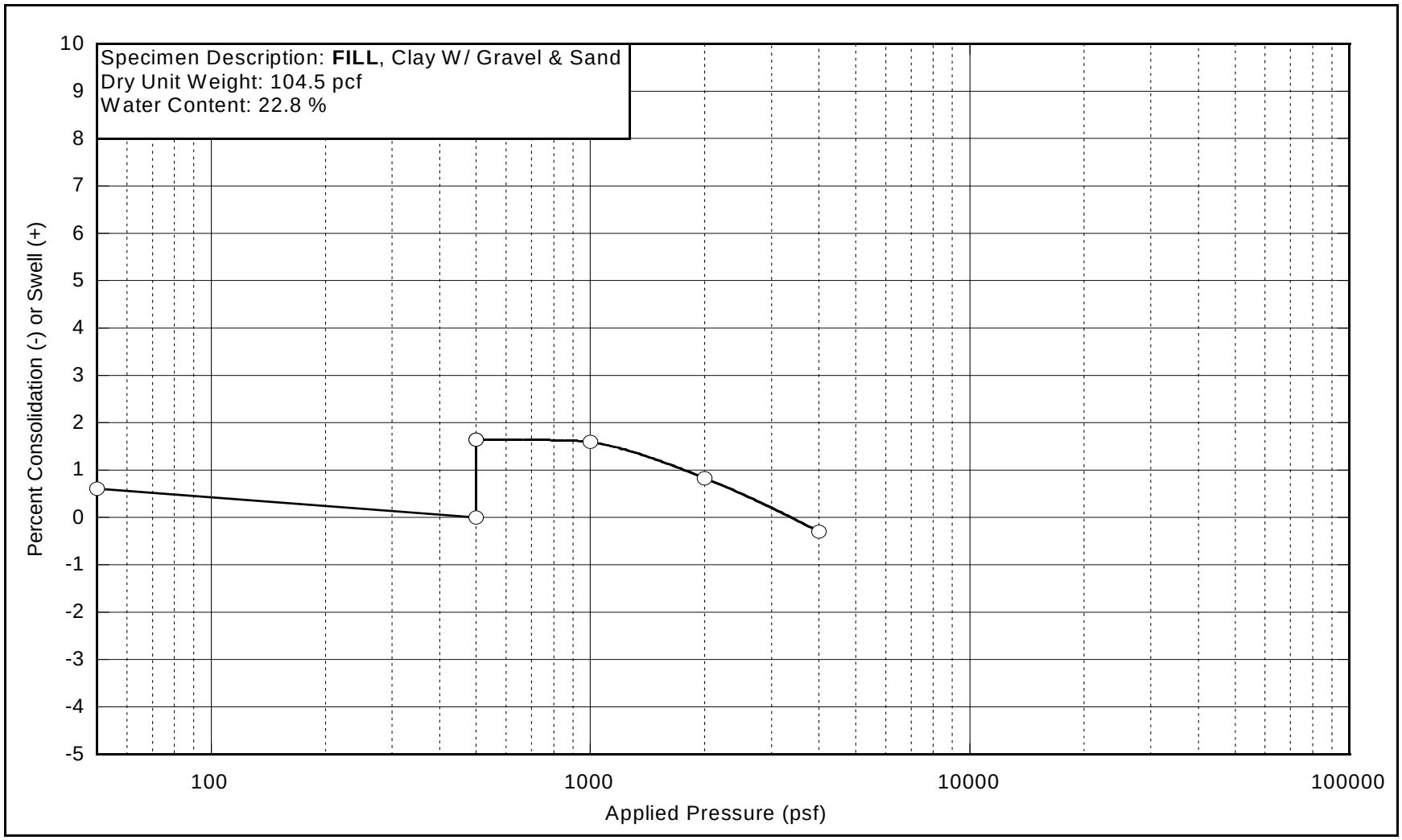
Source of Sample: Tt-2 **Depth:** 15'A

Proj. No.: 114-181919A **Date Sampled:**

DIRECT SHEAR TEST REPORT

Tetra Tech, Inc.

Consolidation / Swell Test Results



Consolidation/Swell Test for Tt-1 at 5'A

Project Name	Rocky Flats SPPTS
Project Number	181919A
Initial Date of Test	August 3, 2009
Date of Test Completion	August 10, 2009
Sample ID	Tt-1 @ 5'A
Consol. Machine No.	21

= Input Cells
= Calculated Values

Sample Dimensions

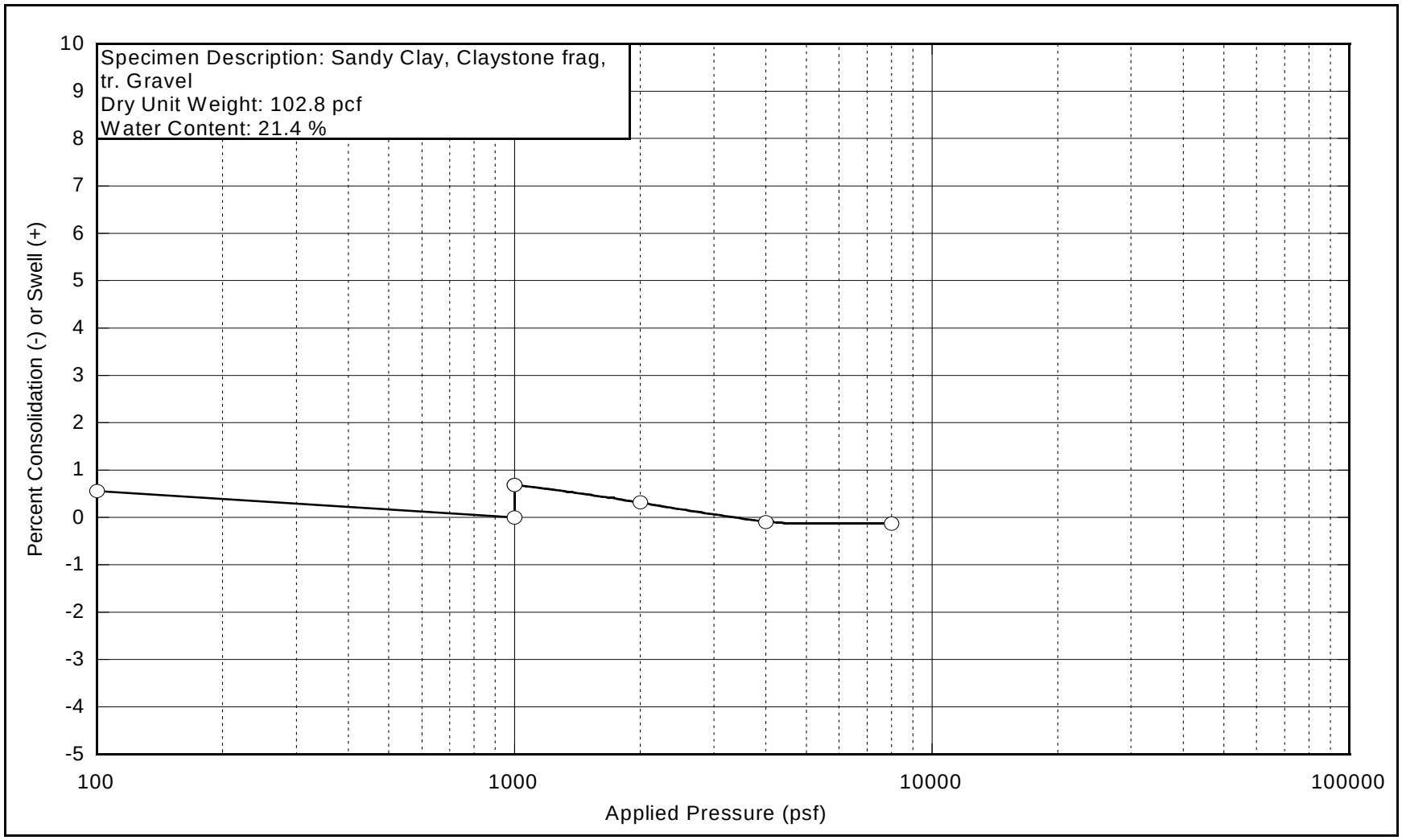
Diameter (in)	1.927
Ring Height (in)	1.003
Spacer Thickness (in)	0.207
Specimen Height (in)	0.796
Area (in^2)	2.92
Specimen Volume (in^3)	2.32

Soil Information

Assumed G_s	2.7
Dry Density (lb/ft^3)	104.5
Moisture (%)	22.8
H_{total} (in)	0.796
H_{solids} (in)	0.494
H_{voids} (in)	0.302
Initial void ratio	0.6122

Moisture	as-received	as-received	saturated	saturated	saturated	saturated	saturated	saturated	saturated
Load Desc.	pre-loading	seating	inundate	loading 1	Loading 2	Loading 3	Loading 4	Loading 5	unloading
Load (pcf)	50	500	500	1000	2000	4000	4000	4000	
Machine Rebound									
Machine Deflection	0	-29	-38	-50	-67	-86	-86	-86	-86
D_0		1837	1760	1882	1866	1788	1679	1679	1679
D_{100}	1837	1760	1882	1866	1788	1679	1679	1679	
D_0 corrected		1837	1789	1920	1916	1855	1765	1765	1765
D_{100} corrected	1837	1789	1920	1916	1855	1765	1765	1765	86
ΔH (in)	0.0000	-0.0048	0.0083	0.0079	0.00180	-0.00720	-0.0072	-0.0072	
Strain (%)	0.0000	-0.6030	1.0427	0.9925	0.2261	-0.9045	-0.9045	-0.9045	#VALUE!
Norm. Strain (%)	0.603	0.000	1.646	1.595	0.829	-0.302	-0.302	-0.302	#VALUE!
void ratio	0.6122	0.6025	0.6291	0.6282	0.6159	0.5977	0.5977	0.5977	

Percent Swell	**1.6**
Swell Pressure (psf)	**3,325**



Consolidation/Swell Test for Tt-1 at 15'A

Project Name	Rocky Flats SPPTS
Project Number	181919A
Initial Date of Test	August 3, 2009
Date of Test Completion	August 7, 2009
Sample ID	Tt-1 @ 15'A
Consol. Machine No.	22

= Input Cells
= Calculated Values

Sample Dimensions

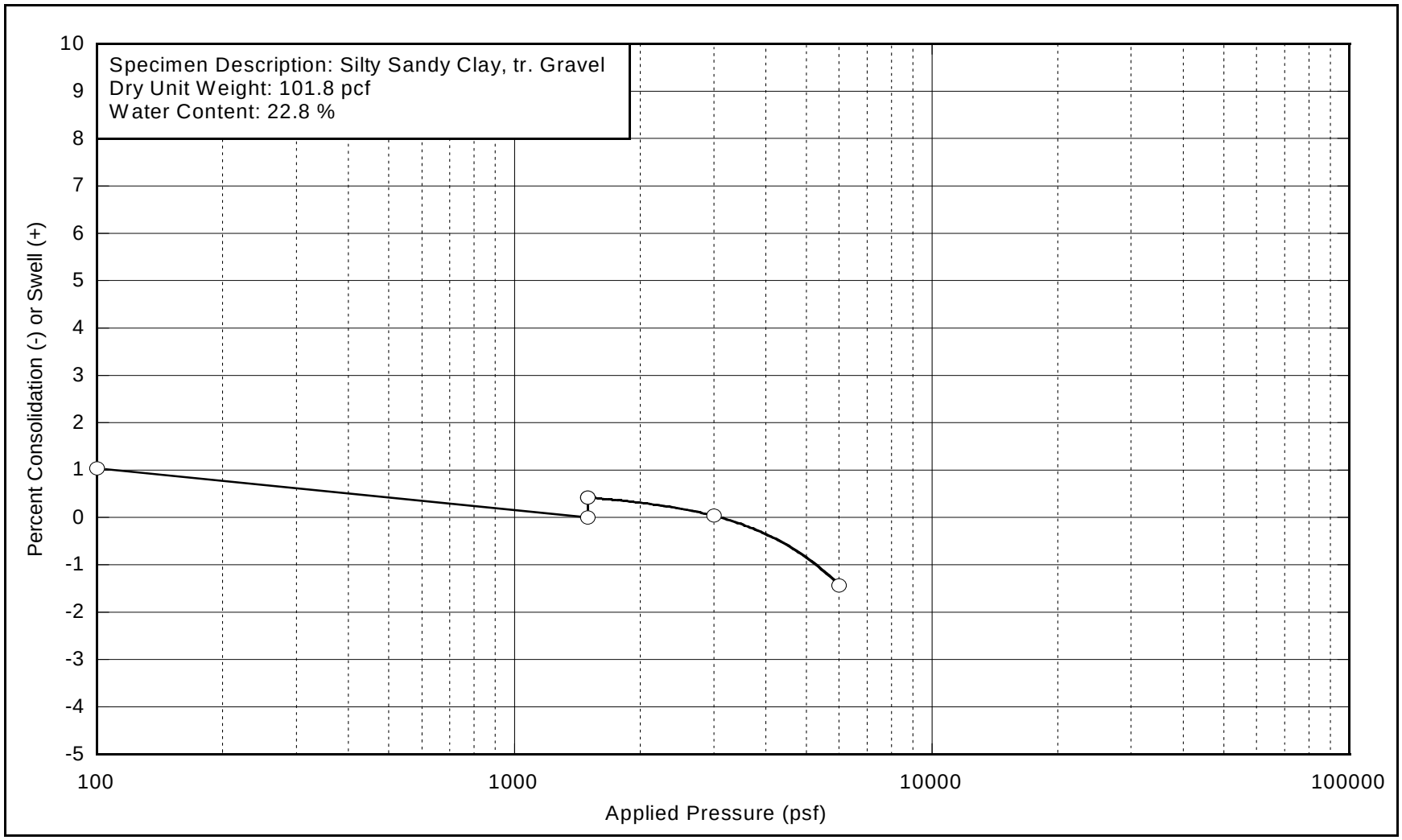
Diameter (in)	1.932
Ring Height (in)	1.01
Spacer Thickness (in)	0.207
Specimen Height (in)	0.803
Area (in^2)	2.93
Specimen Volume (in^3)	2.35

Soil Information

Assumed G_s	2.7
Dry Density (lb/ft^3)	102.8
Moisture (%)	21.4
H_{total} (in)	0.803
H_{solids} (in)	0.490
H_{voids} (in)	0.313
Initial void ratio	0.6389

Moisture	as-received	as-received	saturated	saturated	saturated	saturated	saturated	saturated	saturated
Load Desc.	pre-loading	seating	inundate	loading 1	Loading 2	Loading 3	Loading 4	Loading 5	unloading
Load (pcf)	100	1000	1000	2000	4000	8000	8000	8000	
Machine Rebound									
Machine Deflection		-48	-61	-81	-93	-111	-111	-111	-111
D_0		1595	1502	1544	1494	1449	1428	1428	1428
D_{100}	1595	1502	1544	1494	1449	1428	1428	1428	
D_0 corrected		1595	1550	1605	1575	1542	1539	1539	1539
D_{100} corrected	1595	1550	1605	1575	1542	1539	1539	1539	111
ΔH (in)	0.0000	-0.0045	0.0010	-0.0020	-0.00530	-0.00560	-0.0056	-0.0056	
Strain (%)	0.0000	-0.5604	0.1245	-0.2491	-0.6600	-0.6974	-0.6974	-0.6974	#VALUE!
Norm. Strain (%)	0.560	0.000	0.685	0.311	-0.100	-0.137	-0.137	-0.137	#VALUE!
void ratio	0.6389	0.6297	0.6410	0.6348	0.6281	0.6275	0.6275	0.6275	

Percent Swell	**0.7**
Swell Pressure (psf)	**3,381**



Consolidation/Swell Test for Tt-2 at 20'A

Project Name	Rocky Flats SPPTS
Project Number	181919A
Initial Date of Test	August 3, 2009
Date of Test Completion	August 7, 2009
Sample ID	Tt-2 @ 20'A
Consol. Machine No.	23

= Input Cells
= Calculated Values

Sample Dimensions

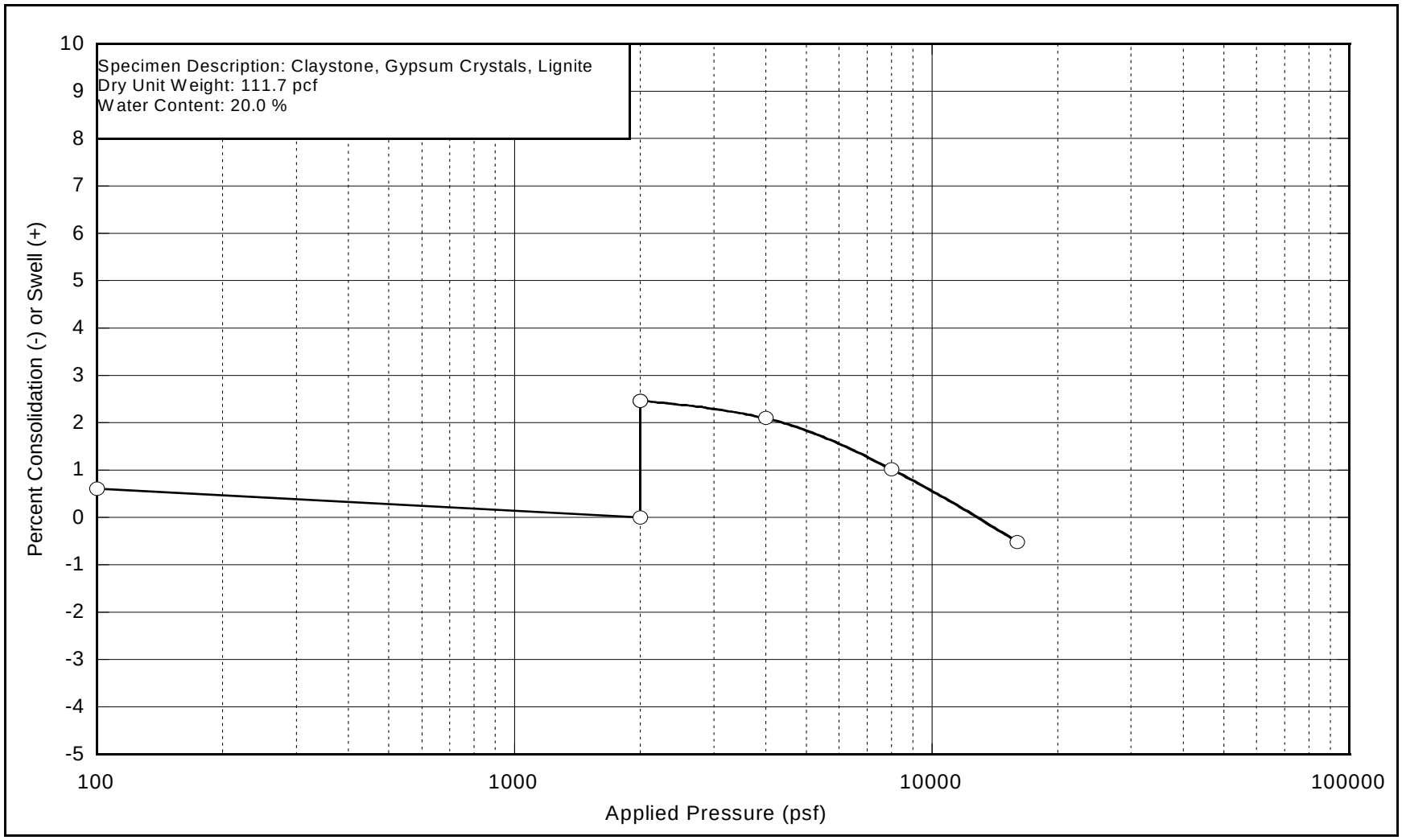
Diameter (in)	1.926
Ring Height (in)	1.001
Spacer Thickness (in)	0.207
Specimen Height (in)	0.794
Area (in^2)	2.91
Specimen Volume (in^3)	2.31

Soil Information

Assumed G_s	2.7
Dry Density (lb/ft^3)	111.2
Moisture (%)	15.3
H_{total} (in)	0.794
H_{solids} (in)	0.524
H_{voids} (in)	0.270
Initial void ratio	0.5151

Moisture	as-received	as-received	saturated	saturated	saturated	saturated	saturated	saturated	saturated
Load Desc.	pre-loading	seating	inundate	loading 1	Loading 2	Loading 3	Loading 4	Loading 5	unloading
Load (pcf)	100	1500	1500	3000	6000	6000	6000	6000	
Machine Rebound									
Machine Deflection		-22	-24	-40	-59	-59	-59	-59	-59
D_0		5072	4968	4999	4953	4817	4817	4817	4817
D_{100}	5072	4968	4999	4953	4817	4817	4817	4817	
D_0 corrected		5072	4990	5023	4993	4876	4876	4876	4876
D_{100} corrected	5072	4990	5023	4993	4876	4876	4876	4876	59
ΔH (in)	0.0000	-0.0082	-0.0049	-0.0079	-0.01960	-0.01960	-0.0196	-0.0196	
Strain (%)	0.0000	-1.0327	-0.6171	-0.9950	-2.4685	-2.4685	-2.4685	-2.4685	#VALUE!
Norm. Strain (%)	1.033	0.000	0.416	0.038	-1.436	-1.436	-1.436	-1.436	#VALUE!
void ratio	0.5151	0.4995	0.5058	0.5000	0.4777	0.4777	0.4777	0.4777	

Percent Swell	**0.4**
Swell Pressure (psf)	**3,054**



Consolidation/Swell Test for Tt-4 at 30'A

Project Name	Rocky Flats SPPTS
Project Number	181919A
Initial Date of Test	August 3, 2009
Date of Test Completion	August 10, 2009
Sample ID	Tt-4 @ 30'A
Consol. Machine No.	21

= Input Cells
= Calculated Values

Sample Dimensions

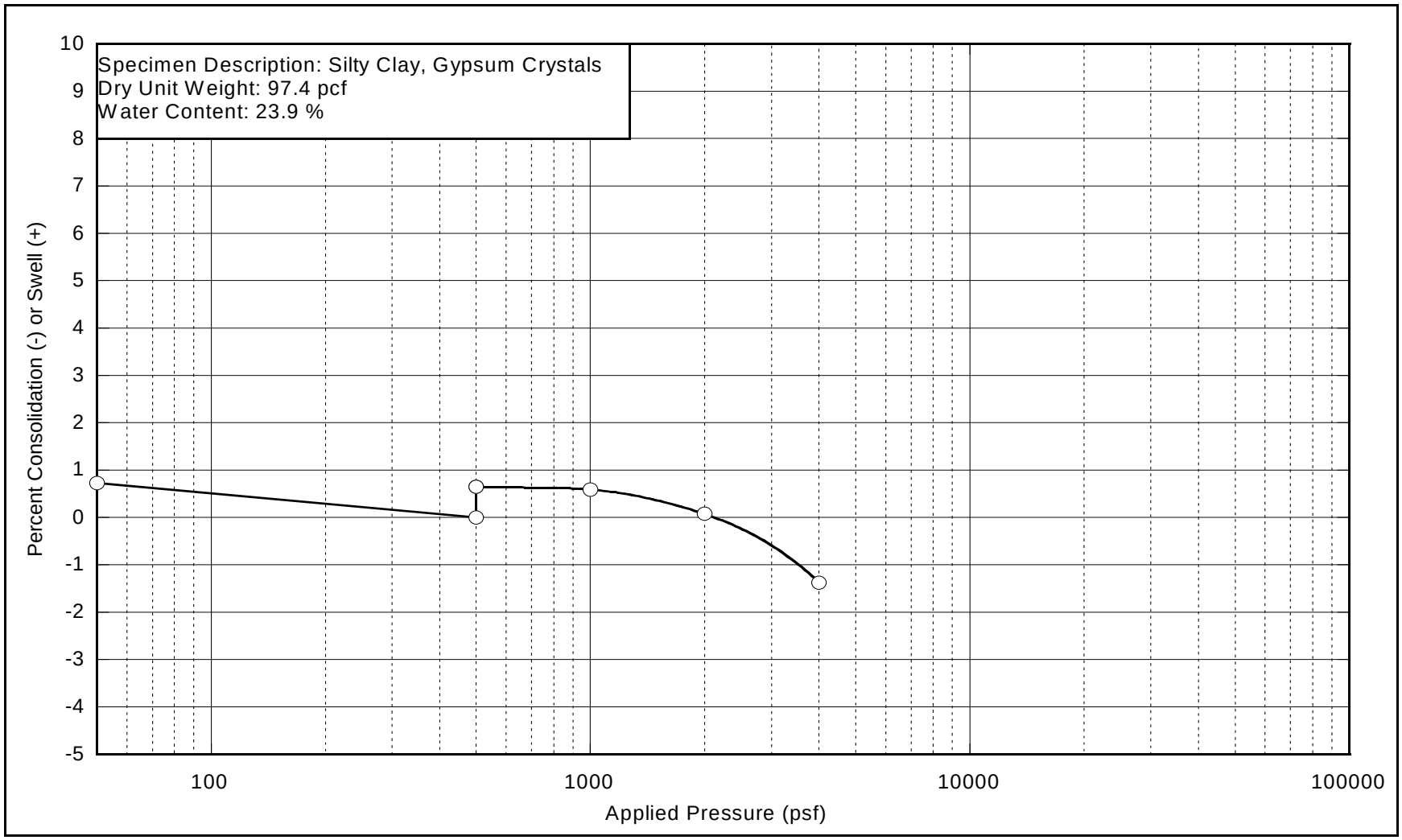
Diameter (in)	1.927
Ring Height (in)	1.003
Spacer Thickness (in)	0.207
Specimen Height (in)	0.796
Area (in^2)	2.92
Specimen Volume (in^3)	2.32

Soil Information

Assumed G_s	2.7
Dry Density (lb/ft^3)	104.5
Moisture (%)	22.8
H_{total} (in)	0.796
H_{solids} (in)	0.494
H_{voids} (in)	0.302
Initial void ratio	0.6122

Moisture	as-received	as-received	saturated	saturated	saturated	saturated	saturated	saturated	saturated
Load Desc.	pre-loading	seating	inundate	loading 1	Loading 2	Loading 3	Loading 4	Loading 5	unloading
Load (pcf)	100	2000	2000	4000	8000	16000	16000	16000	
Machine Rebound									
Machine Deflection	0	-15	-17	-29	-39	-48	-48	-48	-48
D_0		7557	7494	7688	7647	7551	7420	7420	7420
D_{100}	7557	7494	7688	7647	7551	7420	7420	7420	
D_0 corrected		7557	7509	7705	7676	7590	7468	7468	7468
D_{100} corrected	7557	7509	7705	7676	7590	7468	7468	7468	48
ΔH (in)	0.0000	-0.0048	0.0148	0.0119	0.00330	-0.00890	-0.0089	-0.0089	
Strain (%)	0.0000	-0.6030	1.8593	1.4950	0.4146	-1.1181	-1.1181	-1.1181	#VALUE!
Norm. Strain (%)	0.603	0.000	2.462	2.098	1.018	-0.515	-0.515	-0.515	#VALUE!
void ratio	0.6122	0.6025	0.6422	0.6364	0.6189	0.5942	0.5942	0.5942	

Percent Swell	**2.5**
Swell Pressure (psf)	**12,675**



Consolidation/Swell Test for Tt-6 at 10'A

Project Name	Rocky Flats SPPTS
Project Number	181919A
Initial Date of Test	August 3, 2009
Date of Test Completion	August 10, 2009
Sample ID	Tt-6 @ 10'A
Consol. Machine No.	25

= Input Cells
= Calculated Values

Sample Dimensions

Diameter (in)	1.929
Ring Height (in)	1
Spacer Thickness (in)	0.207
Specimen Height (in)	0.793
Area (in^2)	2.92
Specimen Volume (in^3)	2.32

Soil Information

Assumed G_s	2.7
Dry Density (lb/ft^3)	97.4
Moisture (%)	23.9
H_{total} (in)	0.793
H_{solids} (in)	0.458
H_{voids} (in)	0.335
Initial void ratio	0.7298

Moisture	as-received	as-received	saturated	saturated	saturated	saturated	saturated	saturated	saturated
Load Desc.	pre-loading	seating	inundate	loading 1	Loading 2	Loading 3	Loading 4	Loading 5	unloading
Load (pcf)	50	500	500	1000	2000	4000	4000	4000	
Machine Rebound									
Machine Deflection	0	-10	-13	-33	-60	-91	-91	-91	-91
D_0		5084	5016	5064	5040	4972	4826	4826	4826
D_{100}	5084	5016	5064	5040	4972	4826	4826	4826	
D_0 corrected		5084	5026	5077	5073	5032	4917	4917	4917
D_{100} corrected	5084	5026	5077	5073	5032	4917	4917	4917	91
ΔH (in)	0.0000	-0.0058	-0.0007	-0.0011	-0.00520	-0.01670	-0.0167	-0.0167	
Strain (%)	0.0000	-0.7314	-0.0883	-0.1387	-0.6557	-2.1059	-2.1059	-2.1059	#VALUE!
Norm. Strain (%)	0.731	0.000	0.643	0.593	0.076	-1.375	-1.375	-1.375	#VALUE!
void ratio	0.7298	0.7171	0.7282	0.7274	0.7184	0.6933	0.6933	0.6933	

Percent Swell	**0.6**
Swell Pressure (psf)	**2,074**

APPENDIX C

GEOTECHNICAL CALCULATIONS

Table C.1 Helical Pier Sizing Recommendations (Magnum Piering, Inc.)

Boring ID	Depth	Soil Type	Blow Count	Circular Helix Diameter of Pier[1]	Ultimate Foundation Capacity[1]	Circular Helix Diameter of Pier[2]	Ultimate Foundation Capacity[2]
	(ft bgs)		N	(in)	(kips)	(in)	(kips)
Tt-1	2	**Clay Fill**	**13**	**10**	**5**	**12**	**6**
Tt-1	5	Clay Fill	8	**10**	**3**	**12**	**4**
Tt-1	10	Clay Fill	5	**10**	**2**	**12**	**2**
Tt-1	15	**Clay Fill**	7	**10**	**3**	**12**	**4**
Tt-1	20	Gravelly Sand	18	**10**	**10**	**12**	**10**
Tt-1	25	Claystone	56	**10**	**45**	**12**	**47**
Tt-1	30	Claystone	92	**10**	**72**	**12**	**74**
Tt-2	2	Clay Fill	18	**10**	**10**	**12**	**10**
Tt-2	5	Clay Fill	18	**10**	**10**	**12**	**10**
Tt-2	10	Clay Fill	18	**10**	**10**	**12**	**10**
Tt-2	15	Clay Fill	17	**10**	**9**	**12**	**9**
Tt-2	20	Sandy Clay	16	**10**	**9**	**12**	**8**
Tt-2	25	Gravelly Sand	46	**10**	**38**	**12**	**39**
Tt-2	30	Weathered Claystone	51	**10**	**40**	**12**	**43**
Tt-2	35	Claystone	50/5”	**10**	**40**	**12**	**43**
Tt-3	2	Clay Fill	13	**10**	**5**	**12**	**6**
Tt-3	5	Clay Fill	24	**10**	**12**	**12**	**12**
Tt-3	10	Clay Fill	33	**10**	**18**	**12**	**17**
Tt-3	15	Clay Fill	24	**10**	**12**	**12**	**12**
Tt-3	20	Clay Fill	25	**10**	**13**	**12**	**13**
Tt-3	25	Clay Fill	39	**10**	**20**	**12**	**20**
Tt-3	27	Clay Fill	53	**10**	**42**	**12**	**44**
Tt-3	30	Weathered Claystone	54	**10**	**43**	**12**	**44**
Tt-3	35	Claystone	68	**10**	**27**	**12**	**57**

Table C.1 Continued. Helical Pier Sizing Recommendations (Magnum Piering, Inc.)

Boring ID	Depth	Soil Type	Blow Count	Circular Helix Diameter of Pier[1]	Ultimate Foundation Capacity[1]	Circular Helix Diameter of Pier[2]	Ultimate Foundation Capacity[2]
	(ft bgs)		N	(in)	(kips)	(in)	(kips)
Tt-4	2	**Clay Fill**	**16**	**10**	**9**	**12**	**8**
Tt-4	5	Clay Fill	18	**10**	**10**	**12**	**10**
Tt-4	10	Clay Fill	29	**10**	**15**	**12**	**16**
Tt-4	15	**Clay Fill**	47	**10**	**38**	**12**	**23**
Tt-4	20	Clay Fill	50/4”	**10**	**40**	**12**	**43**
Tt-4	25	Weathered Claystone	14	**10**	**6**	**12**	**7**
Tt-4	30	Claystone	65	**10**	**50**	**12**	**54**
Tt-5	2	Clay Fill	14	**10**	**6**	**12**	**7**
Tt-5	5	Clay Fill	17	**10**	**9**	**12**	**9**
Tt-5	10	Clay Fill	28	**10**	**15**	**12**	**14**
Tt-5	15	Clay Fill	20	**10**	**11**	**12**	**12**
Tt-5	20	Clay Fill	41	**10**	**32**	**12**	**21**
Tt-5	25	Weathered Claystone	27	**10**	**13**	**12**	**13**
Tt-5	30	Claystone	78	**10**	**62**	**12**	**66**
Tt-6	10	Clay Fill	8	**10**	**3**	**12**	**4**
Tt-6	15	Clay Fill	9	**10**	**4**	**12**	**5**
Tt-6	20	Clay Fill	15	**10**	**6**	**12**	**8**
Tt-6	25	Clay Fill	43	**10**	**35**	**12**	**22**
Tt-6	30	Clay Fill	38	**10**	**31**	**12**	**20**
Tt-6	35	Claystone	50/3”	**10**	**40**	**12**	**43**

Note: 1) Circular Helix Pier

2) Circular Helix Pier with double cutting edge

Magnum Helical Pile System

Magnum offers superior round shaft helical piles ranging in load capacities from 16 Tons to 200 Tons.

The helical pile product line includes:

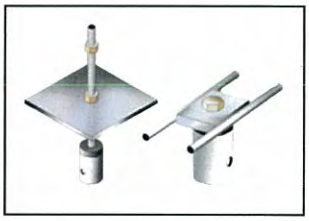
- 3" O.D. - 4 products ranging from 16 Ton to 50 Ton ultimate capacity
- 4.5" O.D. - 4 products ranging from 70 Ton to 97 Ton ultimate capacity
- 5.72" O.D. - 6 products ranging from 92 Ton to 200 Ton ultimate capacity

(see ProductSpecifications for detailed information)

There are many applications for the Magnum Helical Piles including:

- Deep Foundation Piles for New Construction
- Concrete-Less Foundations for Light Construction
- Concrete Slab Lifting & Stabilization
- Temporary & Permanent Shoring
- Underpinning Commercial & Residential Structures
- Tiebacks & Wall Anchors
- Earth Anchors for Slope Stabilization
- Temporary & Reusable Tilt-Up Wall Anchors
- Boardwalks & Pedestrian Bridges
- Sea Walls & Bulkheads
- Pipeline & Utility Tie Downs

Helical piles have significant load bearing capacity and are used in both compression (downward) and tension (uplift) applications. When a helical pier is installed into suitable soil, the load of the structure is transferred to the bearing plates welded to the shaft.



The primary benefits of Magnum Helical Piles are:

- ***Fast Installation*** – 30 to 40 a day (depending upon depth) with a single installation device & one 3 man crew
- ***Pre-Engineered System*** – capacity-to-torque ratio produces completely predictable installation results
- ***Variety of Piles & Capacities*** – capacities ranging from 8 tons to 200 tons; wide selection of products to match capacity requirement
- ***No Soil Spoils*** – eliminates removal costs; perfect for environmentally sensitive sites
- ***Small Maneuverable Installation Equipment*** – minimal equipment costs; no vibration
- ***Dual Cutting Edge Blades*** – patented design enables superior pier installation through cobbles, tightly compacted clay soils & dense fill materials
- ***Single Bolt Connection for 3" Product Line*** – for fast & efficient installation

Magnum installers have installed our helical piles across the country from Manhattan to the mountains of Colorado and West Virginia to the waterways and swamplands in Florida.

Patent #6,058,662
Magnum® Dual Cutting Edge (DCE) Blade™

Patent # 6,058,662
Magnum® Dual Cutting Edge (DCE) Blade™ This revolutionary patented blade design enables Magnum Helical Piles to penetrate difficult soils including very dense gravel, soils laden with occasional cobbles and even fill soils containing trash like trees, concrete debris, small to medium rocks, etc.

The patented DCE Blade can even penetrate sedimentary bedrock with standard penetration test (SPT) blow counts of up to 50 blows for 6 inches.

Read what Magnum installers are saying about the Magnum DCE Blade.

Mr. Joe Loudermilk
Partner – Extreme Technology's, Atlanta, GA
"Magnum's Helical Piles with the DCE Blade are the best helical piles I've ever installed. The blade design virtually eliminates any side-to-side (wobble) motion and the piers advance in our dense clay soils just like a screw into wood."

Mr. Ross Kirk
Owner – Marco Concrete Lifting, Charleston, WV
"Hands down the best blade design for penetrating our dense West Virginia clay soils. The Magnum DCE blade even allows us to penetrate our shale formations without deflection or failure. The DCE blades are great!"

Mr. Jerry Lipe
Owner – Lipe Brothers Construction, Duluth, MN
"Our crews specify the Magnum DCE blades for our helical piles because the blade is able to penetrate the Laurentian Shield formations in our region. Often times we encounter these layers at very shallow depths, and the DCE blades will cut through it so we can get below frost depths and into good tight clays."

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Appendix G: RFLMA Contact Records

RFLMA contact records issued during 2009 are included in this appendix.

ROCKY FLATS SITE
REGULATORY CONTACT RECORD

Purpose: Phase II and III Upgrades to Solar Ponds Plume Treatment System

---

Contact Record Approval Date: February 17, 2009

Site Contact(s) / Affiliation(s): Scott Surovchak / DOE; Linda Kaiser / Stoller; Rick DiSalvo / Stoller; John Boylan / Stoller

Regulatory Contact(s) / Affiliation(s): Carl Spreng / CDPHE

Discussion: As approved in Rocky Flats Legacy Management Agreement (RFLMA) Contact Record 2008-07, installation of a collection sump, solar powered pumping system and effluent piping upgrade to the Solar Ponds Plume Treatment System (SPPTS) was completed in October 2008. That upgrade is referred to as the SPPTS Phase I upgrade. Data collected subsequent to Phase I are intended to inform further SPPTS upgrades, and this Contact Record documents the plans for the Phase II and Phase III upgrades. The data collection associated with these phases is intended to inform evaluation of alternatives for final system upgrades, referred to as Phase IV.

The Phase I upgrade has been successful in capturing additional contaminated groundwater for treatment. The system influent flow increased by about a factor of 2 (in late October through December, 2008), to approximately 0.8 gallons per minute. Analytical data from samples collected after completion of the Phase I upgrade show that the SPPTS Discharge Gallery (DG) and the SPPTS treated effluent now have very similar concentrations, indicating that the new effluent discharge line installed as part of the Phase I upgrades is successfully limiting the commingling of contaminated groundwater with SPPTS treated effluent. These data also show a reduction in nitrate and uranium concentrations at the DG since the completion of Phase I. Analytical results to date for nitrate contamination at various SPPTS sampling points are shown in Figures 1 and 2. These figures incorporate analytical data reported by contract laboratories, as well as by in-house analyses. The in-house analyses cost less and give quicker results than analyses performed by contract laboratories, but are not suitable for compliance reporting. As indicated, following completion of the Phase I upgrades, the concentration of nitrate in untreated influent increased by about a factor of 2 to 3, to approximately 650 milligrams per liter (mg/L) nitrate (as nitrogen [N]). These figures show that the effluent concentrations of nitrate have increased as well. (To a lesser extent, this is also true for uranium: influent concentrations of uranium increased by about one-half, to about 55 micrograms per liter [ug/L], while effluent concentrations have increased to about 15 ug/L.) (Note that the new RFLMA SPPTS effluent monitoring point, SPOUT, is located in the equipment vault near the collection sump installed during the Phase I upgrade, and replaces former effluent monitoring location SPPMM01 as approved in Contact Record 2008-08. Location ITSS represents water collected in the Phase I collection sump; other locations are defined in the RFLMA.)

The current nitrate standard for North Walnut Creek is 100 mg/L as N, based on the surface water standard temporary modification (TM) for this portion of Segment 5 of Big Dry Creek. The TM is set to expire on December 31, 2009, after which the underlying water supply standard of 10 mg/L nitrate as N will apply. (See RFLMA Attachment 2, Table 1.) RFLMA Attachment 2, Figure 11,

"Groundwater Treatment Systems", provides the criteria for evaluating routine analytical results for the treatment system sampling locations specified in RFLMA Attachment 2, Table 2. For the SPPTS, nitrite/nitrate (as N) and uranium are monitored under RFLMA. The evaluation is applicable to the influent (SPIN), effluent (SPOUT), and performance (GS13) locations. If routine RFLMA compliance sampling produces results that cause the 85th percentile of data to exceed the corresponding value specified in RFLMA Attachment 2, Table 1, then the RFLMA consultative process is initiated to determine if actions should be implemented. While the data currently being collected from post-Phase I monitoring are more extensive than the RFLMA required routine monitoring, and although the data include in-house analyses that are not used for determining compliance with the RFLMA, it is clear from Figures 1 and 2 that contaminant concentrations at the influent, effluent, and surface water performance location have increased. If these conditions were to continue, the 85th percentile concentrations of nitrate and uranium in the effluent and at the surface water performance location would eventually exceed the corresponding Table 1 values. The goal of the proposed Phases II, III, and IV is to optimize treatment so that the underlying water supply standard of 10 mg/L can be met.

Construction of Phase II and III is scheduled to begin in the spring of 2009. The RFLMA consultative process has been initiated to describe the corresponding plans and to determine whether and to what extent actions should be implemented. The U.S. Department of Energy (DOE) and the Colorado Department of Public Health and Environment (CDPHE) consulted on January 15, 2009 to review DOE's conceptual plans for Phases II and III of the SPPTS upgrades.

The Phase II objective is to install a new uranium treatment cell upstream of the two existing treatment cells. Currently, the second of the two existing treatment cells (Cell 2; downstream of Cell 1) is designed to remove uranium (predominantly through precipitation reactions occurring within the zero valent iron [ZVI] media), though some ZVI is also mixed in the nitrate-treating media of Cell 1. Routing untreated water through the ZVI for uranium removal prior to the nitrate treatment media is anticipated to allow future disposal of the nitrate media as non-radioactive waste. The new ZVI cell location and design will also allow for easier periodic replacement of the ZVI media without impacting the nitrate treatment media. The actual uranium treatment method using ZVI will remain unchanged.

The Phase III objective is to install pilot-scale nitrate treatment cells to evaluate improved nitrate bio-treatment technologies. In this case, Phase III will evaluate an inert substrate with the metered addition of nutrients, and a mixture of organic material combined with vegetable oil; both media types should provide enhanced biological denitrification. Again, the actual treatment method using biological denitrification will remain unchanged.

Pursuant to RFLMA paragraph 34, DOE may implement field modifications that are consistent with the intent of the approved response action, after receiving oral approval from CDPHE, and documented in a Contact Record. Upon approval, DOE may implement the SPPTS modifications as documented in this Contact Record. In addition, pursuant to RFLMA paragraph 66, DOE and CDPHE do not consider addition of the Phase II uranium treatment cell, the Phase III pilot-scale nitrate treatment cells, or a subsequent Phase IV upgrade based on the proposed Phase III pilot-scale tests, separately or collectively, to constitute a significant change from RFLMA's existing requirements. This is because the actual treatment methods used are not changed via the installation of Phases II or III (or, by extension, Phase IV). This Contact Record shall be used to provide public notice of these modifications to the SPPTS.

DOE has prepared an evaluation of the proposed nitrate treatment approach, *SPPTS Phase III: Pilot-Scale Optimization of Nitrate Treatment,* which is included as Attachment 1 to this Contact Record.

CDPHE has reviewed the DOE evaluation and has determined that it provides sufficient information to justify the installation of the Phase III pilot scale cells. Also, CDPHE agrees with DOE that the Phase II ZVI cell installation upgrade is likely to make future uranium treatment media replacement easier while improving performance and simplifying disposal of the nitrate media.

Over the longer term, the proposed SPPTS Phases II, III, and IV will address the effluent contaminant concentrations currently observed, but for the short term rejuvenation of the existing media may warrant consideration. While replacement and/or rejuvenation of the current SPPTS media would be expected to reduce the effluent nitrate concentrations, current information suggests such actions would not reliably reduce concentrations to target levels, given the higher contaminant loads resulting from the Phase 1 upgrades. Furthermore, current information suggests the SPPTS effluent nitrate concentrations may continue to negatively impact water quality in portions of North Walnut Creek downstream of the SPPTS (as reflected at performance monitoring point GS13) despite replacement/rejuvenation of the existing media. Even if the existing 10-year old nitrate media was fresh, the volume of media is insufficient to provide adequate treatment given current contaminant loads. Therefore, media replacement is not seen as a reasonable response, over either the short term or long term, to these conditions. Instead, the system upgrades are most appropriate for the long term, but media rejuvenation remains worthy of consideration for the short term.

CDPHE also agrees that prior to deciding whether and when the existing SPPTS media should be rejuvenated, DOE may perform tracer tests to determine if media "short-circuiting" or water channeling is contributing to apparent reduced nitrate removal. The tracer to be used, currently anticipated to be sodium bromide, and the field procedure for conducting the tracer test will be submitted to CDPHE prior to conducting the test. The tracer test shall be conducted to comply with the remedy Applicable or Relevant and Appropriate Requirements (ARARs) for groundwater and surface water for the tracer chemical (note that there is no Colorado surface water or groundwater standards promulgated for sodium bromide). The test will be designed to limit the amount of tracer substance used, to achieve ARARs for surface water and groundwater. An appropriate sampling frequency and analyte suite for comparison to ARARs will be described in the tracer test plan.

If the tracer test indicates satisfactory flow (i.e., minimal channeling), rejuvenation of the existing nitrate media, which is predominantly sawdust with a small amount of ZVI mixed in, will be proposed. The rejuvenation method currently envisioned involves injecting emulsified vegetable oil into the media, thereby adding a readily-available carbon source to the relatively depleted carbon of the sawdust, providing additional nutrients to the bacteria currently present and stimulating bacterial denitrification. If channeling is indicated, media rejuvenation would have limited or negligible effect and rejuvenation will likely not be attempted.

The Phase II upgrade includes the addition of a commonly used water softener chemical, currently expected to be sodium citrate, to reduce iron scale buildup in the downstream system components, including the pilot-scale nitrate treatment cells. The Phase III upgrade includes the addition of a food-grade nutrient carbon source to the influent water. The treatment will be designed to control the amount of additive used. The use of these additives will be conducted to meet the remedy ARARs for groundwater and surface water.

While the proposed Phase II and III upgrades do not involve any construction within habitat of the threatened Prebles Meadow Jumping Mouse, DOE will also inform the US Fish and Wildlife Service (USFWS) regarding the proposed use of the tracer chemical and treatment additives. Small concentrations of these substances may be expected in the SPPTS effluent and in the downstream

surface water that is within mouse habitat. This notification will facilitate an evaluation, if needed, of any potential impacts to the mouse or its habitat for these compounds to determine whether a biological assessment (BA) is needed for the project. The USFWS must approve the BA.

The conceptual design for Phases II and III is included in Figure 3. The construction involves excavation prohibited by the institutional controls (ICs) incorporated in RFLMA. The excavation work will exceed the 3-foot-depth limit specified by ICs (RFLMA, Attachment 2, Table 4, Control 2 [IC 2]) and thus requires pre-approved procedures. Specifically, this work will entail excavation to maximum excavation depths of approximately 10 feet below ground surface (10 ft. bgs) for most of the construction, with new pipe connections made at the influent to existing Cell 1 at a depth of approximately 15 ft. bgs.

The objective of IC 2 regarding excavations with a depth that exceeds 3 feet is to maintain the current depth to subsurface contamination or contaminated structures. This IC also results in achieving compliance with the CDPHE risk management policy of ensuring that residual risks to the site user are at or below 1×10^{-6}. As discussed below, the proposed work achieves the risk management policy goal.

Excavation will be reduced to the extent feasible. This will reduce both the size of the disturbed area and the volume of materials and supplies consumed for the project. The best management practices in the *Erosion Control Plan for Rocky Flats Property Central Operable Unit, DOE-LM/1497-2007,* July 2007 will also be implemented to provide erosion controls for the excavated materials so that run-on and runoff will be minimized.

CDPHE has requested that the following information be included in contact records that include soil excavation:

1 - Provide information about any remaining subsurface structures in the vicinity so that the minimum cover assumption won't be violated (or state that there are none if that is the case)-

There are no remaining subsurface structures in the vicinity, so cover assumptions will not be violated.

2 - Provide information about any former Individual hazardous Substance Sites/Potential Areas of Concern (IHSSs/PACs) or other known soil or groundwater contamination in the vicinity (or state that there is no known contamination)-

This construction area was not an IHSS. The *RI/FS Nature and Extent of Soil Contamination* figures do not indicate soil contamination in this area. Groundwater in the vicinity is impacted by the Solar Ponds Plume. Any groundwater that is encountered will be collected from the excavation, if necessary, to conduct the construction work. If excessive amounts of groundwater are intercepted in the excavation, the water will either be pumped from the excavation to the surface generally southwest (upgradient) of the SPPTS to allow this water to seep back into the ground, as approved in Contact Record 2008-06, or will be containerized and transported to the SPPTS for treatment, at the discretion of the field crew.

3 - Resurvey any new surface established in subsurface soil, unless sufficient existing data is available to characterize the surface (or state that the excavated soil will be replaced and the original contours restored)

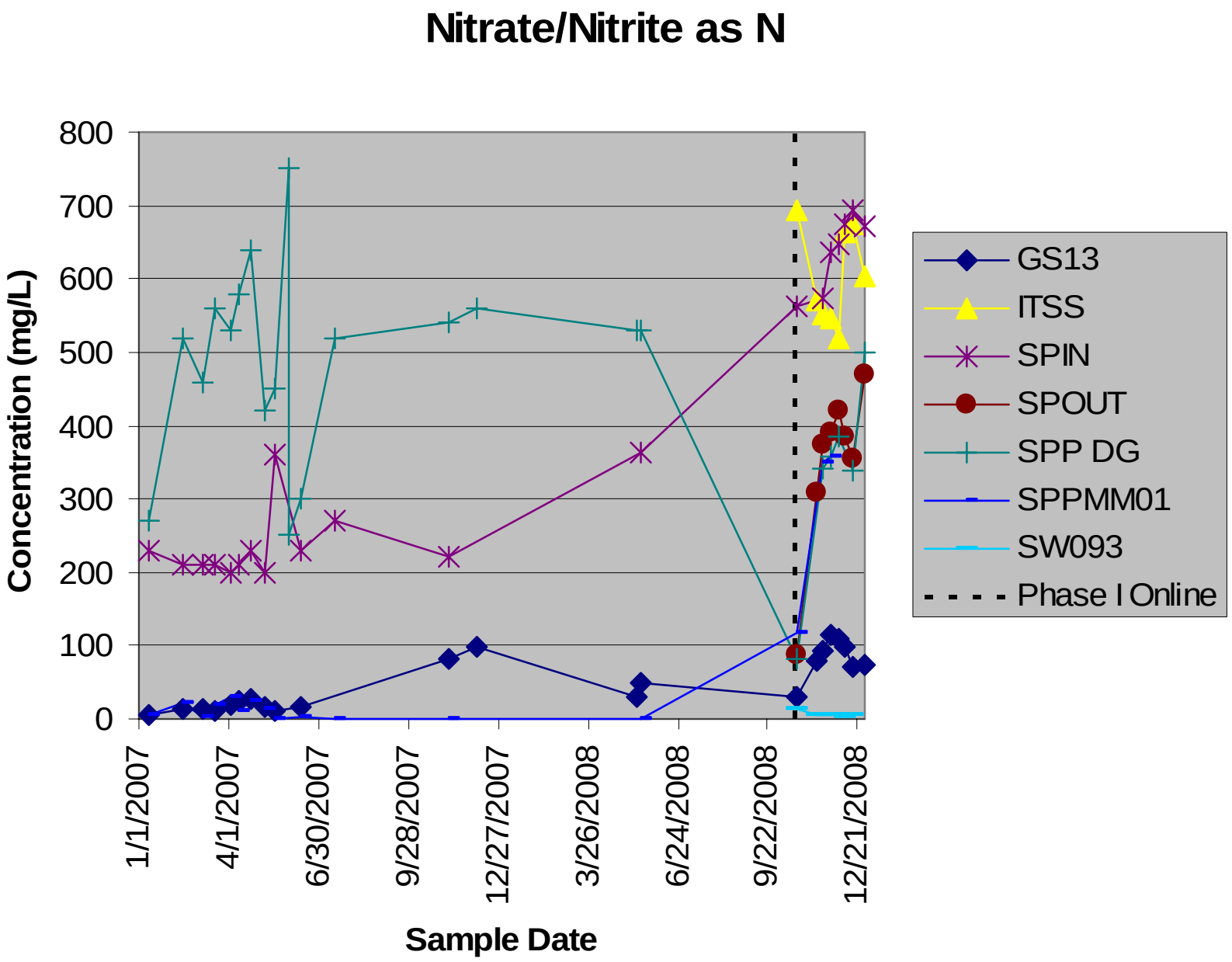
Portions of the Phase II ZVI cell, the Phase III pilot scale cells, and equipment vaults will be above the ground surface. A solar power system for powering pumps, instrumentation, and controls will also be above ground. Otherwise, the final ground contours will approximate the pre-excavation contours. Excess soils generated from the excavation will be used generally for revegetation in the construction area and on-site as available. An as-built survey will be performed after construction is completed.

Closeout of Contact Record: This contact record will be closed when the as-built survey is completed and when post-construction revegetation and erosion controls are in place.

Resolution: The installation of the SPPTS Phase II and Phase III upgrades will be conducted as described in this Contact Record. The tracer test plan will also be provided to CDPHE.

Contact Record Prepared by: John Boylan and Rick DiSalvo

Distribution:
Carl Spreng, CDPHE
Scott Surovchak, DOE
Linda Kaiser, Stoller
Rocky Flats Contact Record
File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Concentration (mg/L)
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600
500
400
300
200
100
0
1/1/2007
4/1/2007
6/30/2007
9/28/2007
12/27/2007
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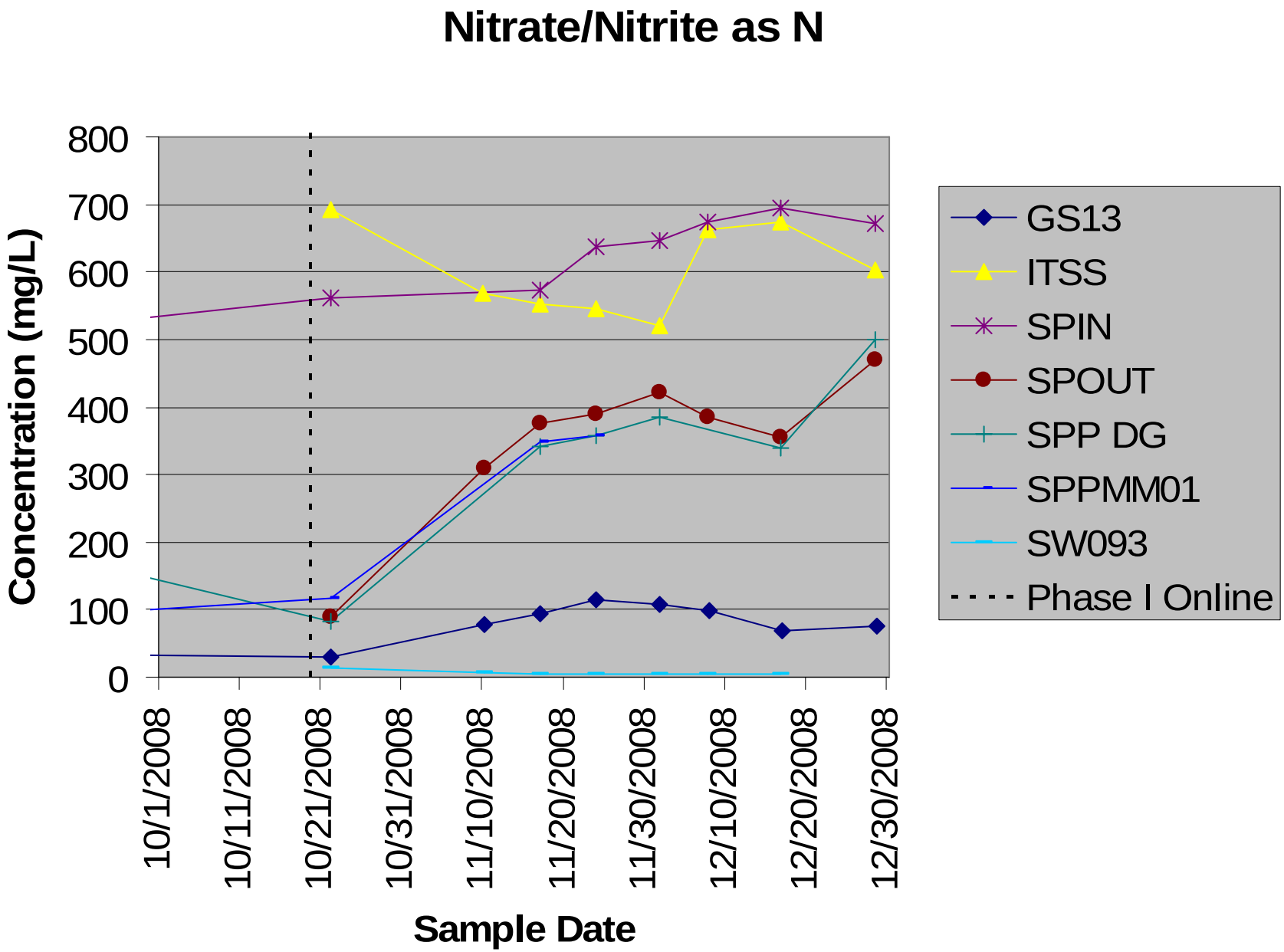
SW093
Phase I Online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Concentration (mg/L)
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600
500
400
300
200
100
0
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10/31/2008
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11/30/2008
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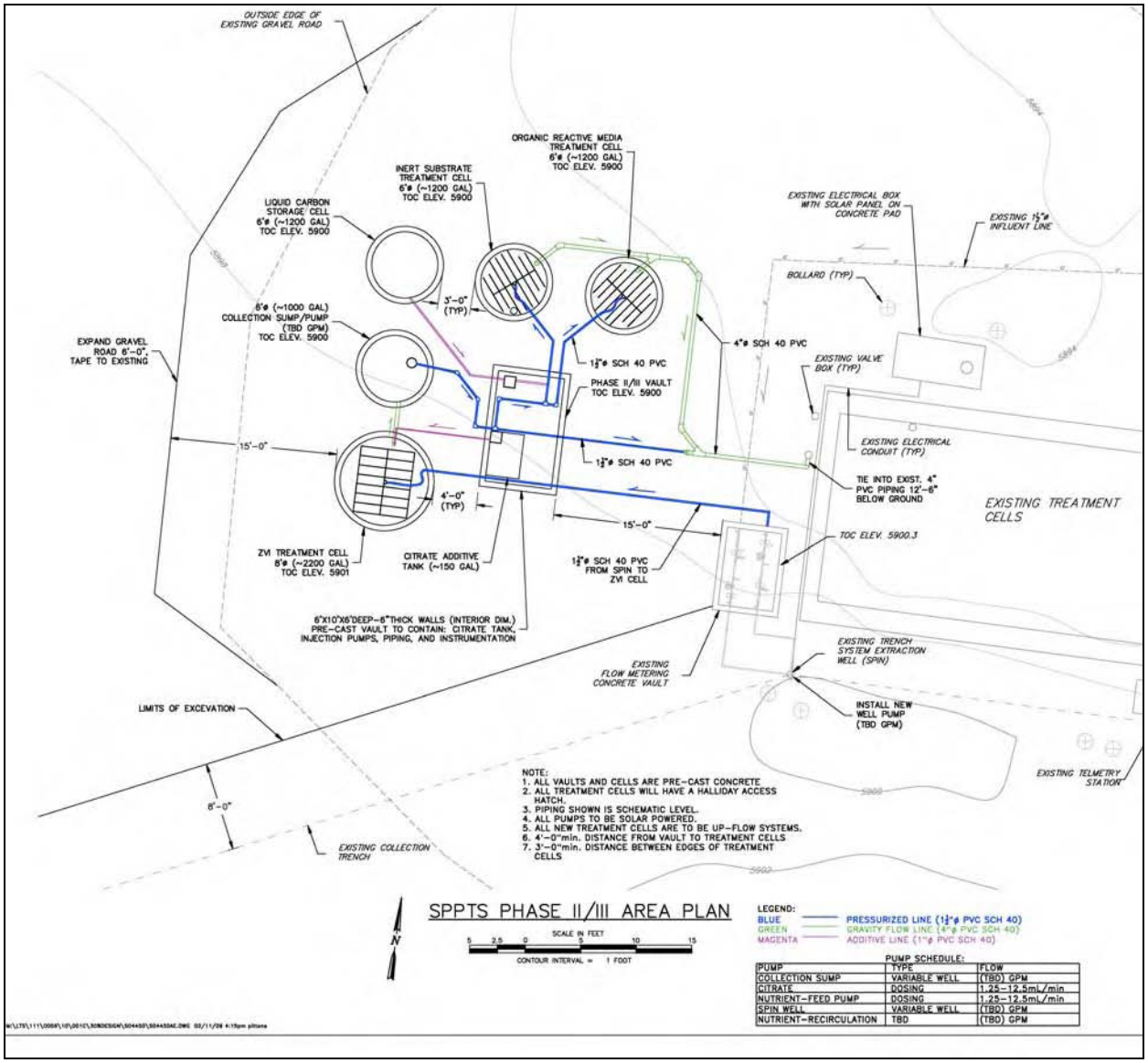
12/20/2008
12/30/2008
Sample Date
GS13
ITSS
SPIN
SPOUT
SPP DG
SPPMM01
SW093
Phase I Online

RFLMA CR 2009-01 Figure 3: Section of plan-view schematic drawing (at 30% design) showing proposed components of Phases II and III to left of existing treatment cells.



SPPTS Phase III: Pilot-Scale Optimization of Nitrate Treatment

Executive Summary

The SPPTS treats groundwater contaminated with nitrate and uranium. Improvements made to the system in late 2008 (Phase I system upgrades) have increased the flow and contaminant concentrations. This has reduced the residence time within the media, compromising its ability to remove the contaminants, and as a result the system has not met effluent target concentrations.

Although the flow rates observed at the SPPTS since the Phase I upgrades were completed are relatively low, averaging just under 1 gpm, the nitrate concentrations are quite high, averaging approximately 600 mg/L nitrate as N. Concentrations such as these are not typically treated using a passive system, but instead rely on active, powered systems employing technologies such as fluidized beds or ion-exchange resins. Such a configuration is not feasible at the Rocky Flats Site.

Three media types are considered for pilot-scale testing (Phase III), which will inform a full-scale system upgrade (Phase IV):

- Inert media with added carbon
- Reactive media
- Enhanced reactive media

Various specific media materials and carbon sources are considered, with the final recommendation being to test:

- Inert plastic media with brewery waste as a carbon source
- Walnut shells enhanced with vegetable oil

Testing is proposed to be conducted using two 1000-gallon tanks operated in parallel so that the performance of the two media types can be compared. This facility would then be available for the Phase IV system, if desired.

In addition, tracer testing in the current SPPTS treatment cells is recommended to determine if preferential pathways have developed within the media. If not, it is recommended that the existing sawdust/ZVI media be tested to determine whether it can be successfully rejuvenated, e.g., via injection of emulsified vegetable oil, in order to improve short-term performance of the system. Rejuvenation of the uranium treatment cell is not recommended, as this cell will be replaced in the near future (Phase II).

1. Introduction

The Solar Ponds Plume Treatment System (SPPTS) at the Rocky Flats Site was installed in 1999 to treat elevated concentrations of nitrate and uranium in groundwater. The treatment system includes one cell containing sawdust and zero-valent iron (ZVI) designed to treat nitrate, and a second cell containing gravel and ZVI designed to treat uranium. (See the Solar Ponds Plume Decision Document [DOE 1999] for additional information.)

2. Background on SPPTS Phased Upgrades

As stated, nitrate treatment at the SPPTS is currently performed by media that is a mixture of sawdust and ZVI. This media is housed in a cell that is 17 feet (ft) wide by 31.5 ft long. The media layer is 9 ft thick. The configuration of the uranium treatment media, ZVI in gravel, is similar except that the cell is 10.5 ft long instead of 31.5 ft long. In both cells, the top surface of the media layer is buried under approximately 15 ft of wood chips and soil. Activities involving maintenance, inspection, or replacement of both types of the media entail significant cost and effort that could be avoided if the media was more easily accessed.

The Solar Ponds Plume Decision Document (p.48) states that "it is expected that the organic treatment media will provide a carbon source in excess of what would be needed for nitrate reduction and therefore would not require replacement." However, effluent water quality data during periods of higher flow (such as following the blizzards of winter 2006–2007) have indicated media replacement or rejuvenation might be necessary.

In October 2008, a sump to collect more contaminated groundwater for treatment was installed as part of the SPPTS Phase I upgrades. Following the installation of this sump and the subsequent increase in flow (roughly doubling, to approximately 0.8 gallons per minute [gpm]) and contaminant concentrations (roughly doubling or tripling, to approximately 650 milligrams per liter [mg/L] nitrate as nitrogen [N]) to the media, effluent concentrations of nitrate and uranium have also increased, indicating that media replacement and/or rejuvenation may be necessary to reduce effluent concentrations. (Note: Hereafter, this report will refer to concentrations of nitrate using the term "nitrate" rather than the full description, "nitrate as N.") Concentrations such as these are much higher than those typically treated via passive methods, being more representative of waste streams treated by active systems with supplied electrical power, staff, and resin-based media. However, Site limitations eliminate these options.

The cost and difficulty required to maintain the SPPTS treatment cells has led to the development of the Phase II, III, and IV upgrades to the system. Phase II entails installing a separate uranium treatment cell to remove uranium before the water is routed through the second cell for nitrate treatment, thereby allowing the nitrate treatment media to be considered non-radiological. Phase III, the focus of this report, involves evaluating, at a pilot scale, alternative nitrate treatment media in order to improve treatment effectiveness and address the high cost and level of difficulty presented by the current design, with its hard-to-access media composed of a relatively poor-quality carbon source. Performance data from the Phase III effort will be collected over the full range of seasons and what are expected to be a fairly broad range of flow regimes to confirm the suitability and performance of this media and, combined with the

additional flow data collected since Phase I was completed, to determine design specifications for a full-scale version of the nitrate treatment cell. Constructing the full-scale nitrate treatment system will be the objective of Phase IV.

3. Purpose of Phase III Pilot-Scale Testing

As noted previously, the existing sawdust/ZVI media is costly and difficult to maintain. In addition, since the Phase I upgrades went online, the media is not performing adequately. Influent flows have doubled and nitrate concentrations have simultaneously doubled to tripled, apparently compromising the ability of the existing media to provide the necessary level of treatment and causing effluent concentrations of nitrate to exceed the target. A suitable (i.e., effective, less costly, and more easily managed) media needs to be identified and tested during Phase III before implementation in a full-scale system (Phase IV). Bench-scale testing has proven useful, but difficulties in scaling (including flow short-circuiting that is common in smaller test vessels) dictate that larger-scale testing be performed.

While the focus of this document is to define the appropriate media for the Phase III pilot-scale testing for nitrate removal, a shorter-term action should be undertaken in the near future to address the higher nitrate concentrations currently being observed in SPPTS effluent. The most cost-efficient and effective method to reduce effluent nitrate concentrations over the short term may be to “rejuvenate” the existing media through the addition of a biologically accessible carbon source. This approach is described in Attachment A.

The basic types of media that may be used to treat nitrate, the various specific media materials that were considered for this application, and the logic used to eventually select the recommended media material are outlined in the following sections. Final recommendations—both long-term and short-term—are provided at the end of the document, and attachments are included that present additional data and information supporting the recommendations.

4. Current Conditions

In October 2008, Phase I of the planned upgrades to the SPPTS was completed. Groundwater now collects in the Interceptor Trench System (ITS) collection sump (referred to as the ITSS) and is pumped to the SPPTS for treatment. This additional ITSS water results in higher flows, as well as higher concentrations of nitrate (and uranium, the secondary contaminant), being directed through the treatment cells. As a result, the hydraulic retention time (HRT) has decreased while the nitrogen (and uranium) loading has increased. Table 1 shows how variation in flow rate and nitrate concentration can affect both nitrate loading and calculated HRT. The concentrations in this example are representative of observed SPPTS influent concentration ranges. Although post-Phase I flow rates have roughly doubled to approximately 1 gpm, data do not yet exist for anticipated seasonal wet periods. However, for the purpose of discussion, the elevated flow rate shown (3 gpm) may be more representative of what may be observed during the spring or as an annual average. Consequently, this flow is assumed as a conservative upper limit in subsequent conceptual design scenarios for Phase IV.

Table 1
Relationship Between Hypothetical Flow/Concentrations and HRTs in the SPPTS

Average Flow Rate (gpm)	Nitrate/Nitrite as Nitrogen (mg/L)	Nitrogen Loading (kg-N/d)	HRT (days)
0.5	300	0.8	22
3.0	600	9.8	3.6

gpm = gallons per minute
mg/L = milligrams per liter
kg-N/d = kilograms of nitrogen per day

Recently (e.g., winter 2006–2007), concentrations of nitrate and uranium in SPPTS effluent were observed to increase during periods of higher flows. Thus it was expected that with the addition of groundwater collected at the ITSS, performance of the SPPTS might decline. Preliminary data indicate that this is the case, as target concentrations of nitrate and uranium in system effluent are being exceeded (refer to Table A-1, Attachment A, for recent results). Whether this is primarily due to the treatment media being exhausted (i.e., Cell 1 containing an inadequate supply of bioavailable carbon, or the ZVI in Cell 2 no longer being accessible due to the formation of mineral precipitates) or bypassed via short-circuiting and preferential pathways is not known.

The following sections provide a summary of the media alternatives that were evaluated.

5. Media Considerations

For the short term, efforts should be considered to rejuvenate the existing sawdust/ZVI media in Cell 1 (i.e., the nitrate treatment cell) of the SPPTS to meet effluent concentration targets. However, it is unlikely that this approach will provide adequate, long-term treatment under the changed conditions (i.e., higher flows and higher nitrate concentrations) without some form of improvement.

For the longer term, rather than simply replace the existing 10-year-old media with fresh sawdust and ZVI, other media should be evaluated for treating nitrate in groundwater that has been pretreated for the removal of uranium (via the Phase II upgrade). There are two basic types of nitrate treatment media that are commercially available:

- An ***inert*** media that provides a large surface area upon which denitrifying biofilms form in the presence of water-soluble electron donors (liquid carbon sources such as various forms of sugar, vegetable oil emulsions, or alcohol).

- A ***reactive*** media that provides both the solid matrix for biofilm growth and a long-term source of denitrifying carbon, which a bacterial suite degrades over time. The current sawdust-based media is a type of reactive media.

An ideal reactive media should be relatively permeable, inexpensive, and readily available (preferably locally), and it should have a cellulosic rigid structure that can maintain its long-term physical strength while degrading. The primary consideration for an inert media is that it should have a large specific surface area and high porosity (i.e., void volume) to maximize biofilm formation and resist clogging.

While inert and reactive media appropriate for nitrate removal have been commercially available for many years, the SPPTS project may benefit from advances in the technology and understanding since the current system was designed. Additionally, given the higher contaminant concentrations and higher flows that have existed since the Phase I upgrades were completed, the existing system would probably not meet treatment objectives even if filled with fresh media.

With respect to clogging and biofilm development, it is important to note that the influent to the Phase III and, ultimately, Phase IV nitrate treatment cells will be the effluent from the Phase II uranium treatment cell. Because this latter cell will contain ZVI, relatively high concentrations of dissolved iron will be present in the Phase III/IV influent. This has the potential to contribute to clogging through the development of iron precipitates. A means by which this dissolved iron can be sequestered should therefore also be considered through the Phase III tests.

5.1 *Advantages and Disadvantages*

Each media type has unique advantages and disadvantages. Solid-substrate, reactive media is generally considered advantageous for water treatment under conditions where passive or semipassive treatment is preferable. These systems, however, are generally most appropriate under low-flow and low-loading conditions because longer HRTs and periodic media replacement are required. Denitrification systems treating high nitrate loads (high flows and/or high nitrate concentrations), such as most industrial systems, utilize inert support media supplemented with a very reactive liquid carbon source (most commonly methanol) and are process-engineered treatment systems that require more routine operational attention.

The concept of an inert substrate with a liquid carbon source added to support bacterial denitrification was explored via treatability studies performed at the Site by Colorado State University (CSU) in 2006 and 2007. Although those tests demonstrated that the concept was viable, the studies suffered from design flaws. For example, following the completion of the studies, it was found that the inoculum was not adequately distributed through the substrate for the short-duration tests that were performed, and significant preferential flow was present; in addition, the carbon sources used (ethanol in one set of tests, methanol in the second set) would have presented significant logistical challenges in any subsequent full-scale application at the Site. However, these experimental design flaws are not sufficient grounds for removing from further consideration all forms of nitrate treatment that incorporate an inert substrate and liquid carbon source. Instead, these lessons must be incorporated into any future system designs that employ this type of media.

5.2 *Practical Considerations*

A reactive media will generally contain a significant fraction of a polymeric organic compound (a cellulosic material) that provides the necessary physical structure to support microbial biofilm

development and resist media compaction and reactor plugging. Biologic utilization of the media is a two-step process as described by Reactions 1 and 2 in Table 2. Because Reaction 1 is rate-limiting, the HRT for systems using a solid reactive media needs to be significantly greater than for systems employing an inert media with a readily degradable liquid carbon source, which rely only on Reaction 2. Consequently, the volume of reactive media required to treat a given volume of nitrate-containing water will generally be much greater than the volume of inert media to treat the same volume at the same nitrate concentration. In addition, the reactivity of a reactive media (i.e., the amount of carbon that is bioavailable) will decrease with time, as will its structural integrity, and thus all reactive media will need to be replaced periodically.

Table 2
Chemical Reactions Applying to Nitrate Treatment and Media Selection

Reaction	Relative Rate	No.
Heterotrophic Denitrification		
Organic polymer (e.g., cellulose) $\rightarrow$ Organic monomers (e.g., glucose)	Very slow	1
$5CH_2O + 4NO_3^- \rightarrow 2N_{2(g)} + 5HCO_3^- + H^+ + 2H_2O$	Fast	2
Nitrate Reduction with ZVI		
$NO_3^- + 4Fe^0 + 10H^+ \rightarrow NH_4^+ + 4Fe^{2+} + 3H_2O$	Medium	3
$2NO_3^- + 5Fe^0 + 12\ H^+ \rightarrow N_{2(g)} + 5Fe^{2+} + 6H_2O$	Medium	4
ZVI-Supported Autotrophic Denitrification		
$Fe^0 + 2H_2O \rightarrow Fe^{2+} + H_2 + 2OH^-$	Fast	5
$2NO_3^- + 5H_2 + 2H^+ \rightarrow N_{2(g)} + 6H_2O$	Fast	6
Iron Oxidation - Denitrification		
$NO_3^- + 5Fe^{2+} + 6H^+ \rightarrow ½N_{2(g)} + 5Fe^{3+} + 3H_2O$	No data	7
Anaerobic Ammonium Oxidation (a.k.a. Anammox)		
$3NO_3^- + 5NH_4^+ \rightarrow 4N_2 + 9H_2O + 2H^+$	Fast	8

While these media replacement activities may be infrequent and depend on the media selected, they may require significant construction effort; drying, management, and storage or disposal of the spent media; and potentially temporary treatment or storage of influent groundwater during the replacement activity. The reactive media used must be available in quantity and over the long term so that equivalent media can be obtained when replacement is necessary. If the same media is not available in the future and an alternative media must be used, it would need to be bench- and/or pilot-tested (at additional time and expense) to verify that it would provide adequate treatment characteristics.

In contrast, an inert media can theoretically last indefinitely (because it is not being consumed) and generally will require less volume, depending on its specific surface area and the source of carbon provided. Consequently, while the initial cost for inert media may be greater, over the longer term it can become cost-effective. However, there are ongoing costs associated with this approach given that the liquid carbon source is continuously fed into the system.

The current media in the SPPTS is a combination of a reactive solid organic media (sawdust) and a reactive inorganic material (ZVI). This combination has the potential to support numerous reactions that enhance its reactivity as shown in Reactions 1 through 8 in Table 2. Column studies performed by the University of Waterloo (1999) to support the design of the SPPTS showed that sawdust alone was not very effective at removing nitrate, but treatment was improved through the addition of ZVI. The added ZVI, with the numerous reactions that it can support, is apparently responsible for a significant portion of the nitrate removal that has been observed in the SPPTS over the past years.

5.3 *Media Selection Criteria*

Many different alternative treatment media are available. The following selection criteria were developed to support the comparison of these alternatives for ultimate application at the SPPTS:

- Unit weight (the lighter, the better).
- Specific surface area (square feet [ft^2] per cubic foot [ft^3]).
- Compressibility (behavior with a bed depth of up to 20 ft).
- Reactiveness.
- Local availability in required quantity (e.g., if the existing structure is suitable and selected for the future nitrate treatment cell, as much as approximately 580 cubic yards [yd^3] will be required to fill the vault, which is 17 ft wide by 43 ft long by 20 ft deep), with the amount required depending on the microbiological efficiency—the amount of bioavailable carbon per unit volume—of the media.
- Permeability of the packed media.
- Cost.
- Longevity (under uniform flow/concentration conditions that are assumed for convenience, although it is recognized that these conditions will fluctuate seasonally and over the longer term).
- Effects of varying flow conditions on the media (e.g., the media should perform acceptably under the current pulsing flow operating condition [solar pumping], and should also not be adversely affected by periods of no flow, which was routine prior to the Phase I upgrades).
- Routine maintenance requirements (with a goal of minimal routine operator involvement).

- Disposal considerations (composting versus disposal as waste, and any associated requirements).
- Cost and ease of replacement (i.e., when removed and exchanged with fresh media, if applicable).

6. Media Evaluated

This section presents various media considered for the Phase III pilot-scale testing. Included are inert media, liquid carbon sources, and reactive media. Example suppliers and estimated costs are also provided.

6.1 *Media Selection Criteria*

Inert media provides a large surface area upon which denitrifying biofilms form in the presence of water-soluble electron donors (liquid carbon sources such as various forms of sugar, vegetable oil emulsions, and alcohol).

Table 3 lists the inert media evaluated for potential use in the Phase III pilot-scale testing.

Table 3
Inert Media Options[a]

Material	Potential Source	Specific Areas and Cost
Plastic random-packing media Tri-Pack®	Jaeger Environmental	85 ft^2/ft^3 ($0.26/$ft^2$)
Pea gravel[b]	Santa Fe Sand & Gravel	~100 ft^2/ft^3 ($0.01/$ft^2$) ($41/yd^3)
Scoria (lava rock)		ND[c]
Honeywell polyurethane foam blocks and plastic cylinders	Honeywell	220 ft^2/ft^3 ($0.09/$ft^2$) ($20/ft^3)
Styrofoam peanuts	Varies	ND
Shredded recycled plastic bottles	Waste Management Inc. recycling center	ND
Crushed glass	Waste Management Inc. recycling center	ND
Granular activated carbon	TIGG Corp. (PA) NORIT Americas, Inc. (TX)	~301 ft^2/ft^3 ($0.15/$ft^2$)
Hollow-fiber membranes	Applied Process Technology	ND

[a] Inert media that were retained for more detailed analysis are shaded.
[b] Surface area estimated assuming a sphere with a diameter of ⅜ inch.
[c] ND (not determined)—Specific costs were not determined because these were rejected; see below.

Several of the inert media alternatives were eliminated from further consideration as follows:

- Crushed glass was eliminated because it may be difficult to find in quantity and with a consistent grain size. It is also physically hazardous to work with.
- Scoria (lava rock) was rejected due to the limited local availability and lack of significant advantage over locally available lightweight aggregate.
- Styrofoam peanuts were eliminated based on cost compared to pea gravel, which provides approximately the same specific surface area and permeability.
- Shredded recycled plastic was rejected due to potential variability of product with uncertain wetability characteristics.
- Granular activated carbon was eliminated because while the cost per surface area is relatively low, the porosity of the media is also low and raises concerns about biofouling and long-term operation and maintenance requirements.
- Hollow-fiber membranes were rejected because they are typically used in concert with hydrogen gas, which diffuses through the membranes to support biofilm growth. As noted below, hydrogen was rejected due the gas's explosive potential; therefore, the membranes were also eliminated.

After the initial round of screening, the inert media that remained for further evaluation included the plastic random-packing media, pea gravel, and Honeywell polyurethane foam blocks and plastic cylinders.

6.2 *Carbon Sources*

A treatment system using inert support media will require the addition of an exogenous organic carbon to fuel the denitrification reactions. Various materials from process sugars to industrial waste products could provide the required carbon. An initial list of potential organic carbon sources that were considered and screened is provided in Table 4.

Table 4
Carbon Source Options[a]

Material	Potential Source	Relative Cost[b]
Liquid brewery wastes (waste beer, 2% to 3% ethanol)	MillerCoors Brewing Co.	Very low ($0.08/gal; cost per 1,000 gal unknown)[c]
Liquid brewery wastes (brewer condensed soluble [BCS], a sugary solution)	MillerCoors Brewing Co.	Very low ($0.05 to $.06/gal; cost per 1,000 gal unknown)[c]
Liquid brewery wastes (trub, a high-protein byproduct)	MillerCoors Brewing Co.	Very low ($0.05 to $.06/gal; cost per 1,000 gal unknown)[c]
Liquid brewery wastes (15% ethanol byproduct)	MillerCoors Brewing Co. (through Merrick & Co.)	Very low ($0.30/gal; $2.97/1,000 gal)
Corn syrup	CARGILL	Low ($1.54/gal; $4.42/1,000 gal)
Molasses	Westway Supply Cattleman's Choice	Low ($1.39/gal; $5.87/1,000 gal)
Molasses:methanol mixture (70:30)	Westway Supply Cattleman's Choice	Low (~$2.54/gal; $7.95/1,000 gal)
Waste milk/whey		ND[d]
Ethylene glycol (food-grade)		ND
Methanol[e]	UNIVAR	Medium ($5.25/gal; $9.47/1,000 gal)
Ethanol		ND
Food-grade emulsified vegetable oil	Hepure Technologies	High ($29.00/gal; $29.16/1,000 gal)
MicroC™/MicroCG™ premium carbon sources	Environmental Operating Solutions	Low ($1.80-$2.00/gal; $6.16/1,000 gal)
Sodium citrate dihydrate[f]	To be determined	Low ($1/lb)
Hydrogen (technically not a "carbon" source, but grouped herein for convenience)	Generated on site/Praxair	ND

[a] Carbon sources that were retained for more detailed analysis are shaded.
[b] Cost provided per 1,000 gallons refers to the estimated cost of the liquid carbon source per 1,000 gallons of treated water, assuming a nitrate concentration of 600 mg/L.
[c] Effectiveness is being determined in ongoing batch tests and laboratory analysis of biological oxygen demand/chemical oxygen demand.
[d] ND (not determined)—Specific costs were not determined because these were rejected; see below.
[e] Rejected early but costs were developed for comparison because this is the industry standard for denitrification systems.
[f] Sodium citrate is not considered a primary carbon source but may provide a supplement to denitrification when used as an iron chelator, as discussed below.

Several carbon sources were eliminated from consideration as follows:

- Raw alcohols (methanol, ethanol, etc.) were eliminated because of the requirements associated with transport and storage. In addition, they are hazardous to work with and may be an attractive nuisance.

- Pure molasses was eliminated because of its viscosity when cold, and the molasses/methanol mixture was eliminated because availability may be inconsistent.

- Waste milk/whey was eliminated because the organic matter it contains is primarily composed of saturated fats and proteins, which are not as biologically available for denitrification as other sources.

- Ethylene glycol was eliminated due to its expense, its hazardous nature, and environmental concerns.

- Corn syrup was eliminated because of a need to maintain it at a warm temperature to keep it from separating.

- Hydrogen was eliminated because it is a highly combustible gas.

Liquid carbon sources retained for further consideration include the brewery waste products, vegetable oil, and MicroC™/ MicroCG™ products. Citrate was also retained, partly for use as a carbon source but mainly to chelate iron in effluent from the ZVI treatment cell, as discussed in Section 5. Emulsified vegetable oil was retained as a possible organic to be used to enhance the reactive media and/or to rejuvenate the present sawdust/ZVI media only. The reaction kinetics of the oil is likely to be too slow for it to be used as the sole carbon source in an inert media bioreactor.

6.3 *Reactive Media*

Reactive media provide both the solid matrix that supports the microbial biofilm and the organic carbon required to support bacterial denitrification. To address both needs, they often employ a combination of media that can provide structural integrity to minimize loss of permeability, and enough reactivity (i.e., labile carbon and nutrients) to fuel denitrification reactions. Solid reactive media initially considered are listed in Table 5.

Table 5
Reactive Media Options[a]

Material	Potential Source	Relative Cost
Walnut shells	Eco-Shell, Inc.	Medium (~ $162/yd^3)
Wood chips from pine-beetle kill	Contracted or purchased from stockpile in Breckenridge, CO	Low/ND
Sawdust	A1 Organics, Eaton, CO	Low/ND
Yard waste/wood chips	A-1 Composting, Hwy 93 Golden, CO	Low/ND[b]
Stockpiled, ground-up Christmas trees	City & County of Denver (early January of each year)	Low/ND
Sawdust/ZVI	A1 Organics, Eaton, CO; and Peerless Metal Powders & Abrasives	Sawdust/woodchips + ZVI - $1,000/ton or ~$2,442/yd^3
Hay/alfalfa	Local livestock supplier	Low/ND
Chitin	JRW	ND
Straw	Local livestock supplier	Low/ND

[a] Reactive media that were retained for more detailed analysis are shaded.
[b] ND (not determined)—Specific costs were not determined because these were rejected as discussed below.

Several reactive media alternatives were eliminated from consideration as follows:

- Wood chips from pine-beetle kill were eliminated because of the excessive haul distance from the western slope of Colorado. Furthermore, special handling may be required to avoid spreading the infestation to Front Range communities, and its long-term availability (over multiple decades) is uncertain.

- Sawdust as a standalone media was eliminated because of the expected decreased permeability over time and limited denitrification potential, as shown in earlier studies by the University of Waterloo. However, it was retained as a potential media mixture component to be commingled with other, higher-permeability materials.

- Yard waste/wood chips were eliminated because of uncertain product consistency. The composting facility accepts yard waste from a variety of sources in the Denver metropolitan area, and the product may include cellulosic materials of uncertain behavior in a treatment cell. Requiring a product of specific characteristics would increase costs.

- Stockpiled, ground-up Christmas trees were eliminated because of residual tinsel and other potential contaminants that might cause unforeseen problems.

- Hay/alfalfa was eliminated as a standalone reactive media because it lacks the structural integrity to resist compaction.

- Chitin was eliminated because it has been a source of undesirable ammonia in other water treatment applications.

- Straw was eliminated as a standalone reactive media because it lacks the structural integrity to resist compaction.

Mixtures of reactive media that survive the initial selection/screening process introduce a level of complexity that is a function of the number of components and the potentially complex chemical and physical reactions and interactions. Further complicating this comparison is the question of whether the multiple components should be installed in layers or commingled. In many cases, these alternatives are not represented by robust data in the literature, requiring assumptions to be made.

6.3.1 Enhanced Reactive Media

The sawdust/ZVI mixture currently used in the SPPTS is considered an "enhanced" reactive media in which the sawdust provides the carbon source used in Reactions 1 and 2 (Table 2) while the ZVI provides chemical-reducing power to fuel Reactions 3 through 8. An alternative to using a chemical reductant (e.g., ZVI) would be to enhance the reactivity of a solid reactive media by infusing the cellulosic material with a high-energy liquid organic amendment such as food-grade vegetable oil. In principle, a hydrophobic oil-based substrate is expected to partition to the solid organic phase provided by, for example, sawdust or walnut shell material and provide a high-energy, moderately reactive organic phase. A potential advantage of the organic amendment over ZVI to enhance the reactivity of the solid-phase organic is that the chemical oxidation of a reduced organic compound (e.g., vegetable oil) is well characterized, whereas reactions associated with ZVI are not.

As discussed in greater detail below, based on professional judgment gained from field and laboratory experience and a review of the current literature, none of the solid reactive media are expected to be able to support the required level of denitrification at the estimated loading rate and under the Site-specific conditions and constraints. Thus, only an enhanced reactive media was carried forward for further consideration.

7. Media Retained for Detailed Analysis

Several potential media and liquid carbon sources passed the initial screening and were evaluated in greater detail to select those to be tested in the Phase III pilot-scale testing program. The short list of options carried forward, along with likely advantages and disadvantages of each, is provided in Table 6.

Table 6
Analysis of Retained Media

Media Type	Media	Advantages	Disadvantages
Inert	Plastic random-packing media Tri-Pack®	Relatively high specific surface area (85 ft^2/ft^3) Lightweight (27 to 30 $pounds/ft^3$) High void volume (up to 90%) Industry standard Long expected lifespan	Higher initial cost Similar material failed to provide efficient treatment in previous pilot studies (see discussion in text)
	Pea gravel	Relatively high surface area (~101 ft^2/ft^3) Inexpensive Locally available Long expected lifespan	Lower void volume(~35% to 45%) with potential clogging (partial biofouling was observed in CSU studies after a short operational period) Failed to provide efficient treatment in previous testing (see discussion in text)
	Honeywell polyurethane foam blocks and plastic cylinders	High specific surface area Used in similar applications Long expected lifespan	Higher initial cost Lower void volume; foam may be prone to clogging, though this has not been a problem in other applications
Reactive (enhanced)	Walnut shells combined with food-grade vegetable oil	Available in numerous grades and sizes High carbon composition (60% to 80%) High hardness (Vickers No. 25–30)	Loses reactivity with time Untested for this application Higher initial cost Walnut shells considered appropriate only if enhanced with a more labile organic phase (e.g., vegetable oil)
	Sawdust/ZVI	Proven to be effective, when fresh, for low flow rates	Loses reactivity with time Not expected to be able to effectively treat higher flows and nitrate concentrations within present system volume Very expensive to replace
Carbon source	Liquid brewery wastes (waste beer, 2% to 3% ethanol)	Inexpensive Locally available	Relatively dilute; will require large storage tank and/or frequent deliveries
	Liquid brewery wastes (trub)	Inexpensive Locally available	Relatively dilute; will require large storage tank and/or frequent deliveries May continue to ferment; storage will need to be vented
	Liquid brewery wastes (BCS)	Inexpensive Sugary solution Locally available	Relatively dilute; will require large storage tank and/or frequent deliveries May continue to ferment; storage will need to be vented
	Liquid brewery wastes (15% ethanol byproduct)	Higher concentration of alcohol Relatively innocuous Inexpensive Locally available	May compete with other consumers of ethanol/energy-related products over longer term

Media Type	Media	Advantages	Disadvantages
	Food-grade emulsified vegetable oil[1]	NA	NA
	MicroC™/MicroCG™ premium carbon sources	Well characterized organic carbon source used extensively for denitrification Nonflammable substitute for methanol	Potentially high transportation costs Should perform similarly to other, locally-available materials (e.g., 15% ethanol brewery waste), though more efficiently than those materials
	Sodium citrate dihydrate[2]	NA	NA

[1] Not considered as a sole source of carbon, but as a possible organic amendment to rejuvenate current sawdust/ZVI media and/or to enhance walnut shell media. See text for additional discussion.
[2] Would not be used as a sole carbon source. May be added as an iron chelator, and would be available to bacteria as a minor contributing source of carbon.

Some of the media carried forward (e.g., brewery wastes) are not conventional media/carbon sources used for denitrification and therefore are not represented by a body of literature that can be used to predict actual performance. Consequently, in an effort to evaluate those media retained for detailed consideration but lacking data on composition or performance, bench-scale testing was conducted to provide reactivity data to support a final Phase III design. Attachment B provides details on the bench-scale testing. These tests were laboratory batch tests in which multiple samples of Rocky Flats water (from SPIN, the SPPTS influent location) were mixed with varying carbon sources and reactive media in various combinations and permutations. Several of the tests failed due to container breakage, as the carbon sources being tested developed gases that ruptured the containers. These tests are being repeated to complete the testing program and support final design of the Phase III pilot-scale tests.

More detailed contact and pricing information for these materials is provided in Attachment C.

8. Preferred Media

As noted above, the primary requirements for a reactive media is that it should be relatively permeable, inexpensive, and readily available (preferably locally), and have a sufficiently rigid cellulosic structure with a good supply of bioavailable carbon. The primary consideration for an inert media is that it should have a large specific surface area and high porosity (i.e., void volume) to maximize biofilm formation and resist clogging. These criteria, combined with professional judgment in the fields of microbiology and engineering, indicate that the preferred media for the Phase III pilot-scale testing at the SPPTS are:

- An enhanced reactive media consisting of walnut shells combined with food-grade vegetable oil; and

- An inert plastic random-packing media supplemented with a liquid brewery waste as the carbon source from the MillerCoors Brewing Co.

These media and carbon sources were retained for Phase III because they can support pilot-scale testing of two alternative treatment approaches that represent passive and semipassive systems (walnut shells and oil, and plastic random-packing media and liquid carbon, respectively). Reactive media that is not enhanced is not retained, for reasons that are described in the next section.

Walnut shells have been used in mining applications to treat acid rock drainage and have been shown to provide the following (Doshi 2006):

- A long-term carbon supply.
- Structural support that resists compaction.
- High total organic carbon.
- High specific surface area to maximize media contact with the water to be treated.

Emulsified vegetable oil has been used for *in situ* remediation of recalcitrant organic compounds, such as chlorinated solvents. Its advantage over organic compounds such as molasses is that it partitions to the organic phase in soils and can provide reducing power for several years. The combination of walnut shells and vegetable oil has the potential to provide the most effective and efficient passive treatment approach for the high-nitrate groundwater associated with the SPPTS. Additional testing will be performed to compare emulsified vs. non-emulsified vegetable oil for this application, since the former material represents a significantly higher cost than the latter, more readily-available variety.

Denitrification using an inert plastic support media for biofilm growth and an alcohol carbon source is the industry standard. Because of the high surface area of the media and high reactivity of the alcohol, such systems can provide efficient denitrification with a limited footprint. While this approach was previously evaluated in Site treatability studies and provided uncertain results (treatment was accomplished, but inefficiently, as discussed above), it is prudent to reevaluate the approach while considering the knowledge gained in the prior studies, given that this technology has proven successful elsewhere and is the standard treatment approach in many industrial applications.

The carbon source to be used in the Phase III inert media testing is selected based on a series of bench tests (see Appendix B); while those tests concluded, container breakage due to internal pressure buildup (the brewery wastes apparently continued to ferment) have necessitated several be repeated. Initial results suggest the BCS alternative to be preferred, but several other factors (e.g., the BCS is a sugary syrup that apparently continues to ferment, which poses storage and metering concerns as well as questions related to its “shelf life”) suggest the 15% ethanol brewery waste may be a better choice. This determination will be refined through the conclusion of bench testing, but both materials may be used in the Phase III evaluation. For the purpose of discussion, calculations and performance predictions are based on the 15% ethanol solution.

9. Factors Bearing on the Phase IV Full-Scale Nitrate Treatment Design

Design of the Phase III pilot-scale testing must consider the conceptual feasibility of implementation in the full-scale Phase IV treatment system. Obviously, it would not be

productive to pilot-test a treatment concept that could produce acceptable water quality at a reasonable cost but would not be feasible or acceptable from a constructability or operational perspective.

Three conceptual Phase IV designs were developed to facilitate making an informed decision on which is the most practical treatment method. The three conceptual treatment methods considered incorporate:

- Reactive media;
- Enhanced reactive media; and
- Inert media fed with a liquid carbon source.

Descriptions and discussions of the respective conceptual systems are provided below. Depending on the results of Phase III pilot-scale testing and how they might be implemented in a full-scale design, consideration will be made as to whether it would be beneficial to incorporate the facilities used for the Phase III effort into the final Phase IV system design.

9.1 *Reactive Media Conceptual Design*

Loading calculations suggest that a full-scale Phase IV system using a solid cellulosic reactive media would require approximately 3,700 yd^3 of media to provide adequate treatment of groundwater containing 600 mg/L of nitrate at an average flow of 3 gpm. This calculation is based on the assumption that the reactive media is composed of an organic material with the chemical formula of $C_{106}H_{263}O_{110}P$, and further assumes 10% available organic carbon and a target 10-year lifespan. For comparison, the current SPPTS structure has an available volume of approximately 319 yd^3 in Cell 1. If the entire current structure (both cells) was filled with a reactive media to a depth of 20 ft, that would provide approximately 756 yd^3 of treatment media. Consequently, calculations indicate that a simple reactive-media system approximately 5 times larger than the current SPPTS structure would be required to treat the expected flows.

A conceptual design accommodating this volume of media, consisting of a single treatment cell with dimensions of 50 ft wide by 175 ft long by 8 ft deep, would cover an area of approximately 0.2 acre. This cell would need to be newly constructed, as nothing of this size currently exists at the Site.

The media would need to be exhumed and replaced approximately every 10 years, assuming a constant rate of organic degradation with no flow short-circuiting. At that time, any cover topsoil and insulating material would be removed for reuse, and the spent media would be excavated and disposed of off site in a sanitary landfill, or composted and used on site if appropriate.

Given the large volume of media that would be required and the resulting dimensions of the treatment cell (i.e., 0.2 acre), combined with the potential need to replace the media approximately every 10 years, the reactive media alternative is not recommended for Phase III pilot-scale testing or for Phase IV full-scale implementation.

9.2 *Enhanced Reactive Media Conceptual Design*

The existing SPPTS Cell 1 sawdust/ZVI media is essentially an enhanced reactive media, with the ZVI providing inorganic reducing power for denitrification. As discussed earlier, studies to support the engineering design of the current SPPTS bioreactor were conducted by the University of Waterloo. Those studies used a solution that contained varying concentrations of nitrate averaging approximately 30 mg/L nitrate, and provided for an HRT of 3 days. Using the sawdust/ZVI mixture, the Waterloo researchers were able to remove approximately 60% of the nitrate. At the flow rate used herein as a hypothetical annual average (3 gpm), the current SPPTS system would provide an HRT of approximately 3.6 days (assuming plug flow), which is similar to the HRT used in the Waterloo studies. However, the nitrate concentration in the influent is approximately 20 times greater than that used in the Waterloo studies, and reducing the nitrate concentration from 600 mg/L nitrate to less than 10 mg/L requires a removal efficiency of greater than 98%. While the sawdust/ZVI mixture was effective under low-flow conditions, with the higher flows and loading that have resulted from Phase I implementation, continued use of the sawdust/ZVI media would require that the SPPTS Cell 1 volume be expanded significantly. Based on the effectiveness reported in Waterloo studies, the volume of Cell 1 would probably need to be increased by a factor of at least 5 to provide adequate treatment if a sawdust/ZVI media was used.

An alternative enhanced reactive media approach entails impregnating a cellulosic media (e.g., walnut shells) with a biologically available organic phase, such as an emulsified food-grade vegetable oil. With this approach, the cellulosic material would provide the required permeability, porosity, and structural support for the bacteria, while the emulsified oil would provide a higher-quality, energetic, and more readily-available carbon source to circumvent the rate-limiting cellulose degradation reaction. The cellulosic material would also function as a reserve of carbon, providing limited treatment even after the available higher-quality carbon has been consumed, and might be appropriate for rejuvenation through the injection of additional emulsified oil.

The most significant difference between a reactive-media enhancement that is *organic* (e.g., vegetable oil as proposed for Phase III testing) versus *inorganic* (e.g., ZVI, which is currently in use at the SPPTS) is that reactions involving biological oxidation of an oil substrate coupled to denitrification are very well understood, whereas the possible reaction pathways for denitrification provided by ZVI (shown in Table 2) are hypothetical and not well understood.

While walnut shells and emulsified vegetable oil have been used and tested separately in various remedial programs, a treatment approach in which they have been combined, to the authors' knowledge, has not been previously evaluated. Therefore, the volume requirements for this application are not known, though potentially the volume of the existing SPPTS structure would be sufficient. Tests need to be conducted to evaluate specific reaction kinetics and media volume requirements of this media mixture. Because this combination of a solid reactive media and a high-energy liquid carbon source offers the potential to provide the most passive treatment approach, inclusion in the Phase III pilot-scale testing is recommended.

9.3 *Inert Media Conceptual Design*

As discussed above, the concept of an inert substrate with a liquid carbon source added to support bacterial denitrification was explored via treatability studies performed by CSU. Those studies suffered from design flaws. By increasing the scale of the study vessels, as will be done for Phase III, it is expected that some of the design challenges (inoculum distribution and flow distribution) will be resolved. Using a carbon source that is not considered hazardous will address most of the logistical issues, with delivery of the material remaining as the most important item to resolve.

For a full-scale, Phase IV nitrate treatment cell, a hypothetical 3 gpm flow at 600 mg/L of nitrate results in a nitrogen load to the system of 9.8 kilograms of nitrogen per day (22 pounds per day). Treating this load would require approximately 43 gallons per day (about 2 gallons per hour, and 16,000 gallons per year) of the 15% ethanol brewery waste as the carbon source. Based on current literature and experience, it is anticipated that the volume requirements of such a system would be met by the existing SPPTS concrete structure, but this will be further refined during the Phase III pilot-scale testing.

This system would require construction of a storage facility for the liquid carbon source; for discussion purposes, a 10,000-gallon buried tank is envisioned. (Many different configurations of 10,000-gallon tanks are available. Cylindrical fiberglass tanks of this volume are available, and measure approximately 8.5 ft in diameter and 27.5 ft long; plastic ones are about 12 ft in diameter and 13 ft long.) The liquid carbon source would be automatically trickle-fed, using a solar-powered pump, to the nitrate cell influent (i.e., the uranium cell effluent) at a rate that would be proportional to the flow rate. The pump would be connected to existing telemetry to support monitoring and notification of any malfunction. The tank could also be fitted with a low-level alarm.

Full-scale implementation would require that this tank be refilled as necessary; the preceding calculations (again, based on 3 gpm/600 mg/L nitrate) indicate this would be required approximately every 6 to 8 months. The cost of the MillerCoors brewery 15% ethanol byproduct is approximately $0.30 per gallon, or about $5,000 annually. There are multiple breweries or other potential suppliers in the Colorado Front Range area that could provide this product, or a similar liquid could be custom-blended by a raw ethanol supplier. It is unlikely that the inert media would require replacement, because its very high porosity (70% to 90% void volume) should be able to support more than enough biofilm development without causing flow restrictions. Periodic system backflushing to remove sludge, and subsequent sludge disposal, may be required. Pilot tests will help predict this potential maintenance requirement.

10. Phase III Pilot-Scale Testing Design

Based on available literature and the limitations imposed by the Rocky Flats Site, there are two treatment approaches that warrant pilot-scale testing as a potential long-term treatment option:

- Using enhanced reactive media; and
- Using inert media.

As discussed above, due to the large estimated volume required for a reactive media system (i.e., without media enhancement) and the difficulty in predicting long-term reactivity of these systems, this approach does not appear to be the most appropriate for this application. It is believed, based on literature reviews and experience, that a system employing a simple solid reactive media cannot be successful given the current and expected nitrate loading, unless the size (volume) of the current treatment system is expanded significantly.

In contrast, an enhanced reactive media has the potential to meet the goals of the treatment system with a more passive approach and could potentially be housed within the current structure, though that must be confirmed via the Phase III tests. Although somewhat less passive, denitrification using inert media and a liquid carbon source is the industry standard for nitrate removal, and also has the potential to meet treatment goals. The Phase III pilot-scale testing program will therefore test these two treatment concepts.

A discussion of the preliminary design for the Phase III pilot-scale system is provided below. It should be reiterated that the infrastructure used for the pilot-scale tests may be used in the future to augment the full-scale treatment system or support modular treatment designs.

10.1 *Uranium Removal Cell*

Any water entering the full-scale (Phase IV) nitrate treatment system will have been pretreated via the Phase II uranium treatment cell to remove uranium. Thus, to properly test the efficiency of the Phase III pilot-scale process, water fed through the Phase III pilot-scale system will be similarly preconditioned. The Phase II treatment cell will contain ZVI as its treatment media. Corrosion of the ZVI causes dissolution of up to 100 mg/L of iron (and concomitant uranium removal as a solid precipitate); dissolved iron will therefore be present in the Phase II cell effluent. A portion of this effluent water will be conveyed to the Phase III nitrate-removal system. The dissolved iron in this water readily forms iron oxides and, left unabated, is likely to produce significant scale in the conveyance piping and plugging at the inlet of the Phase III media cells.

Laboratory testing indicates that the addition of food-grade citrate will prevent scale and plugging by chelating the dissolved iron, maintaining it in solution. Also, citrate is a carbon source that will augment the sources of carbon tested in Phase III.

Design of the Phase III system incorporates the addition of citrate to address dissolved iron in the influent water, with the chelated iron then deposited (e.g., as precipitates) throughout the nitrate treatment cell rather than being concentrated at the point of entry, or exiting the system within the effluent. The potential for citrate to be present in system effluent should be discussed with the regulators to confirm it will be acceptable. Although omission of the citrate additive will not have a strong adverse impact on testing nitrate removal, including this additive should reduce system maintenance and extend the life of the media, and therefore it should not be eliminated from the Phase III design unless regulatory approval cannot be gained.

10.2 *Nitrate Removal Cells*

It is recommended that two parallel tests be conducted to validate the selected treatment approaches and provide the required information on kinetics and HRT to be used for full-scale design in Phase IV. Bench-scale testing of possible liquid carbon sources has been conducted, but as previously noted, several tests were not completed due to vessel breakage; these tests were redesigned and are being completed. The pilot-scale testing program described below may therefore be revised somewhat to incorporate these final bench-scale tests.

Pilot testing of the preferred treatment approaches will be conducted in two approximately 1,000-gallon subsurface concrete treatment cells installed downgradient from the (Phase II) uranium treatment cell scheduled to be installed in March 2009. One cell will contain an enhanced reactive media consisting of walnut shells combined with food-grade vegetable oil. The second cell will contain an inert media consisting of the Honeywell polyurethane foam blocks and plastic cylinders, and supplemented with a 15% ethanol solution from the MillerCoors brewery (or other suitable organic carbon source pending final results of bench-scale testing and analysis).

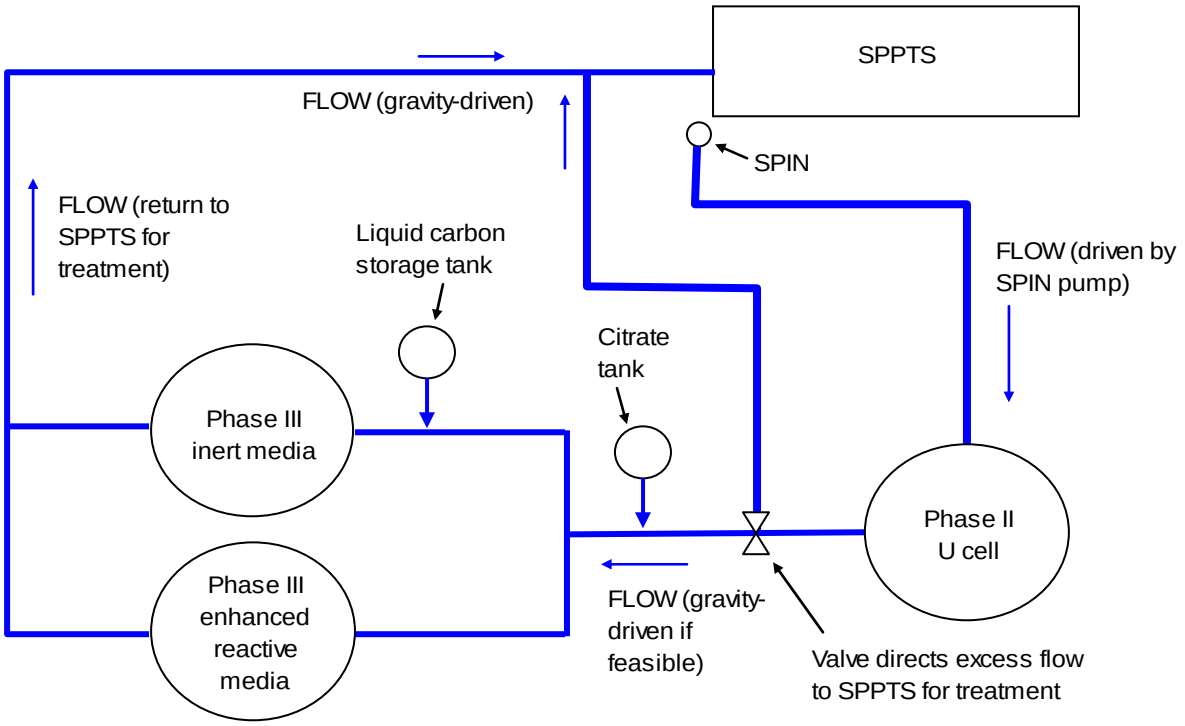
Both treatment systems will be configured and plumbed to operate in an upflow mode while receiving effluent from the uranium treatment cell via a gravity flow. However, depending on the final location and design, one or more small, solar-powered pumps may be required to overcome head loss. Influent rates will vary as biofilms evolve in each system; once steady-state conditions have been established, flow will be continually increased until breakthrough is observed and a minimal HRT can be determined.

The enhanced reactive media cell will be operated as a passive system and will only require that inflow be delivered from the uranium treatment cell. The inert media cell will require additional pumps: one to deliver the 15% ethanol solution, and a second pump to provide for recirculation of water within the reactor, perhaps only during startup. All pumps are envisioned as being solar-powered.

The effluent from these units will be returned to the existing SPPTS via a buried 4-inch-diameter common drain pipe. Note that this may improve current treatment within the SPPTS, given that any excess carbon (i.e., unconsumed liquid carbon and/or entrained vegetable oil) will be routed through the existing sawdust/ZVI media in Cell 1, potentially stimulating resident bacteria and increasing denitrification. It should also be noted that use of a liquid carbon source should be evaluated for regulatory approval needs.

10.3 *Phase III Pilot-Scale Design Summary*

The Phase III pilot-scale testing facility will incorporate two buried 1,000-gallon tanks (measuring approximately 5 ft by 6 ft by 8 ft), one buried storage tank for the liquid carbon source and one for citrate, dosing apparatus for citrate (influent to both tanks) and the liquid carbon source (inert media only), appropriate solar power to supply dosing and pumping needs, and the necessary plumbing to support operation and monitoring. A conceptual sketch of the Phase III pilot-scale system layout is provided below.



Conceptual Drawing -- Not to Scale

11 Recommendations

Based on the information provided above, it is recommended that Phase III pilot-scale tests be conducted to validate the selected treatment approaches and provide the information on kinetics and HRT required for full-scale design. It is recommended that pilot testing of the preferred treatment approaches be conducted in two treatment cells: one filled with an enhanced reactive media consisting of walnut shells combined with food-grade vegetable oil, and the other filled with an inert media and supplemented with a brewery waste (e.g., 15% ethanol solution) from the MillerCoors brewery.

Performance data from the Phase III effort should be collected over the full range of seasons and across a fairly broad range of flow regimes to confirm the suitability and performance of these media and treatment approaches while also determining design specifications for a full-scale nitrate treatment system. Construction of the full-scale system will be the objective of Phase IV.

In addition to the concepts being evaluated through the Phase III pilot-scale tests, several issues should be evaluated in greater detail from an environmental compliance perspective and

discussed with the regulators to ensure their acceptance. Sodium citrate will be added as a chelating agent for the dissolved iron exiting the Phase II uranium treatment cell, and may remain at very low concentrations in the effluent from the SPPTS. A liquid carbon source will be added to one Phase III pilot cell, and may be present at very low concentrations in SPPTS effluent. The vegetable oil used to enhance the walnut shell media in the other Phase III pilot cell may also be present at very low concentrations in the SPPTS effluent. These substances are not currently used at the SPPTS.

In addition to the Phase III recommendations, the following additional tasks are recommended to determine short-term improvements to the current SPPTS system in order to meet discharge objectives under the current higher nitrate-loading conditions:

- Conduct tracer tests on the SPPTS to determine if short circuiting or loss of media reactivity is the primary cause for poor system performance;

- Conduct laboratory testing to evaluate the potential to amend the existing sawdust/ZVI media with a liquid organic compound, over the short term, to improve nitrate removal until a new full-scale system can be designed and installed in Phase IV.

Each of these two activities will also require more detailed evaluation from an environmental compliance perspective; as noted in Attachment A, tracer tests performed in the state of Utah required permitting.

12. References

DOE (U.S. Department of Energy), 1999. *Solar Ponds Plume Decision Document*.

DOE (U.S. Department of Energy), 2008. *Dispersivity Testing of Zero-Valent Iron Treatment Cells: Monticello, Utah, November 2005 Through February 2008.*

Doshi, S.M., 2006. *Bioremediation of Acid Mine Drainage Using Sulfate-Reducing Bacteria*. U.S. Environmental Protection Agency, Washington, D.C.

University of Waterloo, 1999. *Removal of Dissolved Uranium and Nitrate from Groundwater Using Reactive Materials: Laboratory Column Treatability Tests*. University of Waterloo Department of Earth Sciences, Waterloo Ontario, N2L 3G1.

Attachment A
Effectiveness of Current System and Rejuvenation of Existing Media

The focus of this document is to define the appropriate nitrate treatment media for Phase III pilot-scale testing, with the goal of eventual full-scale implementation via Phase IV. However, as shown in Table A-1, current system effluent water quality conditions suggest a short-term action is warranted to improve treatment efficiency until the construction of Phase IV is complete.

Table A-1
Example Results for Nitrate and Uranium in SPPTS Influent and Effluent Before (Validated Data) and After (Unvalidated Data) the Phase I Upgrades (Completed in October 2008)

Date	Nitrate/Nitrite as Nitrogen (mg/L)		Uranium (ug/L)		Approximate Average Flow Rate (gpm)
	Influent	Effluent[a]	Influent	Effluent[a]	
11/7/07	220	0.14	53	0.49	0.5
5/19/08	363	0.12 (J)	44.6	0.69	0.4
10/22/08	561.4	116.7	56.3	14.7	1.4
11/17/08	572.2	348.3	48.2	16.2	1.1
11/24/08	637.2	357.1	58.4	14.8	0.8
12/2/08	646.3	421	50.3	13.9	0.8

[a]Approval to formally change the system effluent monitoring point from the metering manhole (SPPMM01) to the new discharge line (SPOUT) was received on 11/20/08. Results shown for dates prior to 11/20/08 represent SPPMM01, and results for later dates represent SPOUT (concentrations at the two locations are very similar).
(J) Result was J-qualified, indicating it is estimated.
gpm = gallons per minute
mg/L = milligrams per liter
ug/L = micrograms per liter

Results at surface water performance location GS13 also show increasing concentrations, with nitrate concentrations (nitrate/nitrite as nitrogen) exceeding the Temporary Modification of 100 mg/L nitrate on two recent sampling dates.

There are at least two possible reasons why the system is not performing at the required level to acceptably remove nitrate and uranium:

1) Short-circuiting may be occurring and thereby reducing the effective hydraulic retention time (HRT); and/or

2) The sawdust/zero-valent iron (ZVI) media may have lost much of its reactivity and is not supplying enough reducing equivalents to effectively treat the additional nitrate loading.

If the loss of media reactivity is the most significant factor affecting the removal of nitrate, it may be possible to enhance the performance by amending (or "rejuvenating") the current media with a reactive liquid organic compound, such as emulsified food-grade vegetable oil or carbohydrate to enhance system performance over the short term until the Phase IV system retrofit/replacement is completed. Rejuvenating the existing media through the addition of biologically-accessible carbon may be the most cost-efficient and effective method to improve treatment efficiency over the short term. The existing sawdust, while still comprised of carbon, contains significantly less *bioavailable* carbon to support denitrifying bacteria than it did when fresh, and it is this carbon that supports denitrifying bacteria.

(Note: If it is determined that the primary reason for the increasing concentrations of nitrate in system effluent is short circuiting in Cell 1, rejuvenating the sawdust/ZVI media may have little or no effect on effluent concentrations. Consideration of how best to respond to short circuiting conditions will then be appropriate. Short circuiting in the uranium treatment cell is not of great importance, since that cell's function will be replaced in the spring of 2009 when Phase II is constructed.)

Conceptually, rejuvenating the existing media would entail installing temporary injection wells into the treatment cell using a direct-push drill rig. The wells would have slotted screens at the deepest 10-foot section. A suitable liquid organic compound would then be injected through the wells to enhance the reactivity of the media. This approach relies on the effective partitioning of the injected organic to the solid organic phase so that it is not immediately flushed through the media. Bench-scale testing should be conducted prior to implementing such an approach, and the need for regulatory approval should be evaluated and acted upon as necessary.

Step 1: Proposed Tracer Test for Existing SPPTS

Introduction

The existing sawdust/ZVI media has been in place for many years and during this time biotic (e.g., formation of biofilm and/or consumption of cellulose) and abiotic (e.g., gas generation and iron oxide precipitation from ZVI corrosion) reactions may have produced areas within the media that are not being contacted by groundwater flow. Alteration of the media in this way causes preferential flow (short circuiting) and reduces the capability of the media to treat water. Tracer tests are routinely used to determine flow and dispersion characteristics of flow-through media.

Monitoring results indicate that efficiency of the SPPTS has been decreasing and consequently effluent nitrate concentrations currently exceed project goals. For the rejuvenation effort to be effective, the contaminated water must make adequate contact with the sawdust-based biomedia. If preferential flow paths have developed within or around the media, efficiency could be significantly reduced. Piston-type flow, where the water passes through the media without significant preferential flow and minimal dispersivity, is ideal for maximizing biotreatment.

To help determine the ability of the media to maintain quasi-piston-type flow, a tracer test is proposed. With ideal piston flow, an injected tracer should exit the treatment system after the passing of one pore volume in the same concentration as the injectate. Ideal conditions are seldom, if ever, achieved. When effluent tracer concentrations are observed well before the passing of one pore volume, preferential flow or high dispersion is indicated. A temporal plot of effluent tracer concentration can be used to indicate preferential flow and measure dispersion within the media. These data can then be used to make informed decisions about media rejuvenation versus the need for media replacement or system reengineering.

Tracer Test Plan

Important criteria in selecting a tracer include:

- Easy to analyze accurately;
- Detectable at low concentrations;
- Environmentally acceptable and can be permitted easily;
- Inexpensive;
- Few safety, handling, and management issues;
- Non-reactive (does not adsorb or degrade) with the media or constituents in the water; and
- Will not affect flow dynamics (e.g., does not produce high-density solution).

A valid tracer test includes several important steps:

- Inject a sufficient mass of tracer to enable observation of breakthrough;

- Inject the tracer over a sufficient length of time; and

- Inject a sufficient concentration of tracer for accurate detection, while still low enough to not influence flow dynamics.

Dissolved bromide meets most of the above requirements for a suitable tracer and has a proven track record. Bromide has been shown not to react with ZVI and, being inorganic and hydrophyllic, is not likely to react significantly with the biomedia. Many tracer tests have been conducted using bromide and DOE-LM has substantial in-house experience with its use. Therefore, bromide is proposed for the tracer test. Although bromide can be measured in the field using an ion-selective electrode, interferences and temperature variation make this method unsuitable. Ion chromatography (IC) is a more accurate method and is less prone to interference. Experience with bromide tracer tests at the DOE-LM Monticello, Utah, treatment cells indicates that a dissolved bromide concentration of 200 mg/L is sufficient to measure breakthrough and does not cause density effects.

The SPPTS is currently operating at an average daily flow rate of approximately 0.8 gpm. At this flow rate, the calculated HRT in the sawdust/ZVI cell is approximately 14 days and that in the gravel/ZVI cell (used to treat uranium) is approximately 5 days, for a total calculated HRT of 19 days. Ideally, one full pore volume of tracer would be injected. Pore volumes of the

sawdust/ZVI and gravel/ZVI cells are approximately 18,000 and 6,000 gallons, respectively. Since the tracer test is mainly focused on the properties of the sawdust/ZVI media, one pore volume of this cell (18,000 gallons) will be injected. This is not to say that a tanker-truck of bromide solution will be used. Instead, a solution of 100 grams per liter (g/L) bromide will serve as the "parent" solution, and will be injected into the SPIN water stream at a rate that will produce influent water containing 200 mg/L bromide. A steady 0.8 gpm (3 liters per minute) flow rate requires injection of 6 mL per minute of the parent solution to produce the target 200 mg/L bromide concentration. A total of 15 kilograms (33 pounds) of sodium bromide (available in 50-pound bags, costing approximately $100) is needed, and will be mixed with approximately 39 gallons of distilled or deionized water to create the 150 liters of parent solution required for this study. (Note that flow into the SPPTS is actually pulsed, not uniform at 0.8 gpm; the injection of tracer solution will be automatic and flow-dependent, with the same parent and target influent concentrations as described above.)

The parent will be injected directly into the influent (SPIN line) in the adjacent valve vault. The amount of parent solution injected will be metered regularly by observing the level in a metered vessel to ensure proper operation of the injection pump. Generally, a piston pump is preferred for the injection so that the injectate can be pumped accurately against the pressure of the influent line. However, the very low pressure of the influent line at the SPPTS should permit use of most other types of pumps, including peristaltic. If none of the pumps currently available at the Site prove to be satisfactory, a solar-powered pump will need to be procured for this application. The amount of parent solution injected will be metered regularly by observing the level in a metered vessel to ensure proper operation of the injection pump. After 14 days of injection, the injection pumping will be discontinued, but sampling will continue.

Samples will be collected at two locations: (1) from the riser on the effluent line of the sawdust/ZVI cell, and (2) from the riser on the effluent line of the gravel/ZVI cell. Samples will be automatically collected twice daily (including weekends). Samples will also be collected occasionally from the system influent riser to ensure that the influent bromide concentration is near 200 mg/L, and from SPOUT to determine if there is any unexpected bypass of the entire system. Samples will be placed in 50-milliliter sampling tubes and analyzed for bromide by IC.

Tracer tests at the Monticello site indicated that approximately 3 pore volumes were sufficient to produce well-defined breakthrough curves. Therefore, sampling and analysis will continue for approximately 6 weeks to include the tails of the breakthrough curve; however, if sudden breakthrough occurs sampling may be terminated early.

Bromide breakthrough curves will be plotted and compared to modeled curves using varied dispersivity values. This method was effective in determining dispersion characteristics of the treatment media in the Monticello cells (DOE 2008). These interpretive methods ensure reasonable determination of the condition of the existing SPPTS treatment media for future use, either as-is or in some rejuvenated form (e.g., via addition of a carbon source).

Consultation under the Rocky Flats Legacy Management Agreement regarding any regulatory approval needed for injection of the tracer and subsequent discharge from the SPPTS will be

conducted. Regulatory approval, if any is required, is assumed to take at least several weeks to obtain.

Step 2: Media Rejuvenation

If results of the tracer test are positive and indicate groundwater flow makes good contact with the media (i.e., closer to ideal piston flow than preferential flow), media rejuvenation would be appropriate and is recommended. A discussion of media rejuvenation is presented above.

References

DOE (U.S. Department of Energy), 2008. *Dispersivity Testing of Zero-Valent Iron Treatment Cells: Monticello, Utah, November 2005 Through February 2008.*

Attachment B
Denitrification Bench-Scale Testing Protocol

Bench-scale tests to evaluate the effectiveness of various media at denitrification were conducted in 40-milliliter (mL) glass volatile organic analysis (VOA) vials. Three separate vials containing the same constituents were used for each test. The mass of the carbon source was determined by weighing the vial with and without its contents and the volume of carbon was determined by pipetting. Based on estimates of carbon usage and an assumed 3 gpm system flow rate, approximately 60 uL of ethanol was needed for each 40-mL test. As discussed in the Media Evaluation section above, brewery wastes were determined to be the best candidates for use in the Phase III pilot testing. MillerCoors Brewing Co., a local source for these products, provided samples of four different extracts that were used in the bench-scale testing (in these tests, referred to as Beer 1, 2, 3, and 4). Assuming these are approximately 25% as effective as pure ethanol, approximately 240 uL of beer extract was required for each test. Pure ethanol and an emulsified vegetable oil were also tested. Citrate (50 grams per liter [g/L] sodium citrate dihydrate) is being considered as a chelating agent for dissolved iron coming from the zero-valent iron (ZVI) reactor. Since citrate can also be utilized by microorganisms, it was included in these bench tests. Recent tests conducted to support the SPPTS Phase II effort indicated that approximately 100 uL of the citrate solution in 40 mL of Rocky Flats water is sufficient to chelate all the dissolved iron coming from a ZVI column.

The following tests were conducted initially:

Beer1	Beer2	Beer3	Beer4	Ethanol	Veg. Oil	Citrate
100 uL	100 uL	100 uL	100 uL	50 uL	100 uL	100 uL
200 uL	200 uL	200 uL	200 uL	100 uL	200 uL	200 uL
500 uL	500 uL	500 uL	500 uL	200 uL	500 uL	500 uL
				500 uL		

The mass of the carbon source was determined by weighing the vial with and without the carbon source and volume was determined by pipetting. Carbon sources containing suspended solids were allowed to settle and the test sample (100 to 500 microliters [uL]) was collected from the liquid portion (to avoid significant solids given that the solids would be difficult to pump in a field setting). An accurately weighed quantity (approximately 2 grams) of inoculum (soil collected from the SPP Discharge Gallery) were added to each vial. The vial was then filled to volume (no head space) with SPIN water and weighed again to determine the amount of SPIN water. Samples were then incubated at a temperature slightly above room temperature (30 degrees Celsius) and gently agitated by hand approximately daily. The higher temperature should accelerate reactions so that effects can be seen sooner.

Each test was sampled three times and each vial was sacrificial. In other words, three separate vials containing the same constituents were used for each test. This method eliminated any effects of atmospheric exposure and provided sufficient sample for analysis. Samples were collected from one set of vials after 1 week. Additional vials were sampled at later times depending on the results of the first set (at approximately 2 and 3 weeks). Each vial was

sampled separately with a pipet after being centrifuged or settled to remove solids. Proper dilutions were prepared and remaining nitrate concentrations were analyzed by ion chromatography (IC). Uranium was also analyzed on another split by laser-induced kinetic phosphorescence analysis (KPA). Oxidation reduction potential (ORP) and pH were measured in the opened vials using electrodes.

Controls were run using no inoculum or carbon source, using inoculum without the carbon source, and using the carbon source (500 uL for each carbon source) without inoculum. Duplicates were run on several samples for quality assurance.

Attachment C
Source and Price Information for Media Considered

Media Description	Contacted Company	Contact Person	Phone No./E-Mail	Unit Price
Plastic random-packing	Jaeger Products	Scott Gagliardi	(800) 678-0345 jmcevoy@jaeger.com	$22.50/ft^3 ($607.50/yd^3)
Pea gravel	Santa Fe Sand & Gravel	NA	720-903-8096	$40.63/yd^3
Honeywell polyurethane foam blocks and plastic cylinders	Honeywell	Bill Sheridan, John Irvin	847-736-9573 william.sheridan@honeywell.com; 303-987-6159, john.irvin@ honeywell.com	$20/yd^3
Walnut shells	ECO-Shell, Inc.	Rebecca Crowder	530-824-8794 rebecca@ecoshell.com	$200/ton (~$108/yd^3)
Sawdust/ZVI	A1 Organics, Eaton, CO Peerless Metal Powders & Abrasives	NA	970-454-3492 313-841-5400	$12.07/ yd^3 $1,000/ton (~$2,430/yd^3)
Liquid brewery waste – Three potential byproducts from brewery, one from outside source	MillerCoors Brewing Co., Golden, CO	Rick Paine, Spent Matls/Co-Products Mgr.	303-618-4122 rick.paine@coors.com	Waste beer $0.08/gal BCS $0.06/gal trub $0.06/gal
15% ethanol brewery waste	Merrick & Co.	Steve Wagner	303-353-3592 steve.wagner@ merrick.com	$0.30/gal
H60 Emulsified vegetable oil substrate (EVOS™)	Hepure Technologies Inc.	John Poulson	(732) 296-6652; john.poulson@hepure.com	$29.00/gal
MicroC/Micro CG™	Environmental Operating Solutions	Samuel Ledwell	508-743-8440 sledwell@ eosenvironmental.com	$1.80-$2.00/gal

ROCKY FLATS SITE
REGULATORY CONTACT RECORD

Purpose: Excavation by Xcel Energy for Valve Replacement on 12-inch Golden Pipeline

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Contact Record Approval Date: June 29, 2009

Site Contact(s) / Affiliation(s): Scott Surovchak, DOE; John Boylan, S.M. Stoller; Linda Kaiser, S.M. Stoller; Jeremiah McLaughlin, S.M. Stoller; Rick DiSalvo, S.M. Stoller

Regulatory Contact(s) / Affiliation(s): Carl Spreng, CDPHE

Discussion: Xcel Energy operates a natural gas line located within a utility easement in the Central Operable Unit (COU). Most of this natural gas line is beneath the ground surface. A valve station is located near the eastern boundary of the COU. The valve equipment will be replaced by Xcel Energy and/or its subcontractors (collectively called "Xcel"). The project description included in Attachment 1 to this contact record was provided by Xcel's consultant. Xcel will perform the work, and DOE will provide access to the work area in accordance with the utility easement. Rocky Flats personnel will not be involved directly with the work but will remain cognizant of the work and coordinate with Xcel to resolve any issues that arise while it is being performed.

CDPHE and site personnel informally consulted regarding this work on May 14, 2009.

The excavation involves actions prohibited by the institutional controls (ICs) incorporated in the Rocky Flats Legacy Management Agreement (RFLMA). The excavation work is a soil disturbance, and it will exceed the 3-foot depth limit set by ICs (RFLMA, Attachment 2, Table 4, Control 2) and thus requires pre-approved procedures.

The objective of IC 2, regarding excavations with a depth that exceeds 3 feet, is to maintain the current depth to subsurface contamination or contaminated structures. This IC also results in achieving compliance with the CDPHE risk management policy of ensuring that residual risks to the site user are at or below 1×10^{-6}. As discussed below, the proposed work achieves the risk management policy goal.

The excavated area will be backfilled with the excavated materials, and the elevations will approximate the preconstruction elevations. We do not anticipate that any excess excavated soils will remain after completion of the work. However, any excess soils may be used for minor fill or revegetation use at other appropriate locations on site.

Xcel has agreed to implement the best management practices in the *Erosion Control Plan for Rocky Flats Property Central Operable Unit, DOE-LM/1497-2007* (ECP) to provide erosion controls for the excavated materials so that run-on and runoff will be minimized. In addition, the disturbed area will be reseeded, and final erosion controls (e.g., erosion matting) will be installed and maintained until ECP revegetation success criteria are met.

CDPHE has requested that the following information be included in contact records for soil excavation:

1 - Provide information about any remaining subsurface structures in the vicinity so that the minimum cover assumption won't be violated (or state that there are none if that is the case)-

There are no remaining subsurface structures in the work area, other than the aforementioned natural gas line.

2 - Provide information about any former IHSSs/PACs or other known soil or groundwater contamination in the vicinity (or state that there is no known contamination)-

The excavation area is not in any former IHSSs/PACs. This excavation area is within the Windblown Area Exposure Unit (WBEU), which was evaluated in the *RCRA Facility Investigation-Remedial Investigation/Corrective Measures Study-Feasibility Study Report for the Rocky Flats Environmental Technology Site*, Appendix A, Comprehensive Risk Assessment, Volume 9 (CRA). Arsenic and plutonium-239/240 were identified as residual surface soil contaminants of concern for the WBEU. The East Trenches Plume exists in groundwater in this vicinity, but excavation will not extend to a depth that would intercept groundwater. The exposure scenarios evaluated in the CRA included excavation for maintenance purposes and incidental contact with groundwater, and based on the CRA, there would be no significant risk from excavation in this area.

3 - Resurvey any new surface established in subsurface soil, unless sufficient existing data is available to characterize the surface (or state that the excavated soil will be replaced and the original contours restored)-

All excavated soils are expected to be returned to the excavation as previously discussed, and original contours will be restored.

Closeout of Contact Record: This contact record will be closed when the excavations are backfilled and when seeding for revegetation and revegetation erosion controls, as needed, are completed.

Resolution: Carl Spreng, CDPHE, approved the excavation work as described in this contact record.

Contact Record Prepared by: Rick DiSalvo

Distribution:
Carl Spreng, CDPHE
Scott Surovchak, DOE
Linda Kaiser, S.M. Stoller
Rocky Flats Contact Record File

CR 2009-02 Attachment 1

Memorandum

Subject: Excavation Permit for Valve Replacement on Xcel 12" Golden Pipeline

Date: May 18, 2009

To: Scott Surovchak

From: David Cloutier, Olsson Associates (consultant for Xcel)

Background: On Monday April 20, 2009 representatives of Xcel Energy (Xcel) met with representatives of the Rocks Flats Site (RFS) to discuss the permitting requirements for an upcoming valve replacement project that Xcel must complete on the 12-inch Golden Pipeline where it crosses through the Central Operable Unit at the RFS. This area of RFS is subject to Institutional Controls (IC). IC requirements include the prohibition of soil disturbing activities except in accordance with an approved Erosion Control Plan and prohibition of excavations deeper than three feet unless approved by CDPHE. This memorandum, and the attached figures, provides the RFS management team with pertinent information regarding the excavation and erosion control best management practices to request approval for the valve replacement project. A description of the project is provided below.

1. The construction activities for the valve replacement project are scheduled to start on or about July 6, 2009 and are expected to be completed in one week. The excavation of the pipeline will occur in sequences so that the entire pipeline will not be exposed at one time and the amount of disruption of access along the road way will be reduced.

2. The construction site is shown on Figure 1 (attached).

3. The pipeline is reportedly buried at a depth of approximately six feet below ground surface (bgs). It is expected that the excavation would be less than six feet wide and the base of the excavation would be less than 10 feet bgs. Trench boxes would be used to stabilize the side walls of the trench and minimize the area of disturbance.

4. The construction activities for the valve replacement will require the excavation of approximately 226 feet of the 12-inch Golden Pipeline so that the malfunctioning valve and an existing pipeline casing can be removed. A temporary bypass pipeline will be installed around the valve to maintain service while the construction activities are underway. The pipeline will be cut on either side of the valve assembly, the malfunctioning valve will be removed, the section of pipeline that contains the valve will be routed above ground, the new valve will be installed (above ground), and the underground portion of the pipeline will be buried. The casing around the pipeline will be removed while the excavation is open and the pipeline is exposed.

5. Erosion control best management practices (BMPs) will include the following:

    - Snow fence will be installed around the perimeter of the work area as shown of Figure 2 to limit the area of disturbance by restricting traffic to the work area.

- The soil that is removed from the excavation to expose the pipe and valve will be placed in a soil pile (furrow) along the west side of the trench. The soil pile will be located at least eight feet back from the edge of the excavation.
- The excavated soil pile will be covered as necessary to prevent windblown soil or run off.
- Straw waddles will be placed along the toe of the west side of the excavated soil pile to prevent runoff from contacting the soil.
- Where the trench crosses the road and roadside ditch, straw bales and/or waddles will be used as necessary to divert potential drainage to the north or south of the work area and to reduce the velocity of the flow.
- Any leaks, spills, or drips will be cleaned up immediately and managed appropriately.

Contact Information for this project

1) Xcel Energy
   Eric Sweeney
   303-571-3323

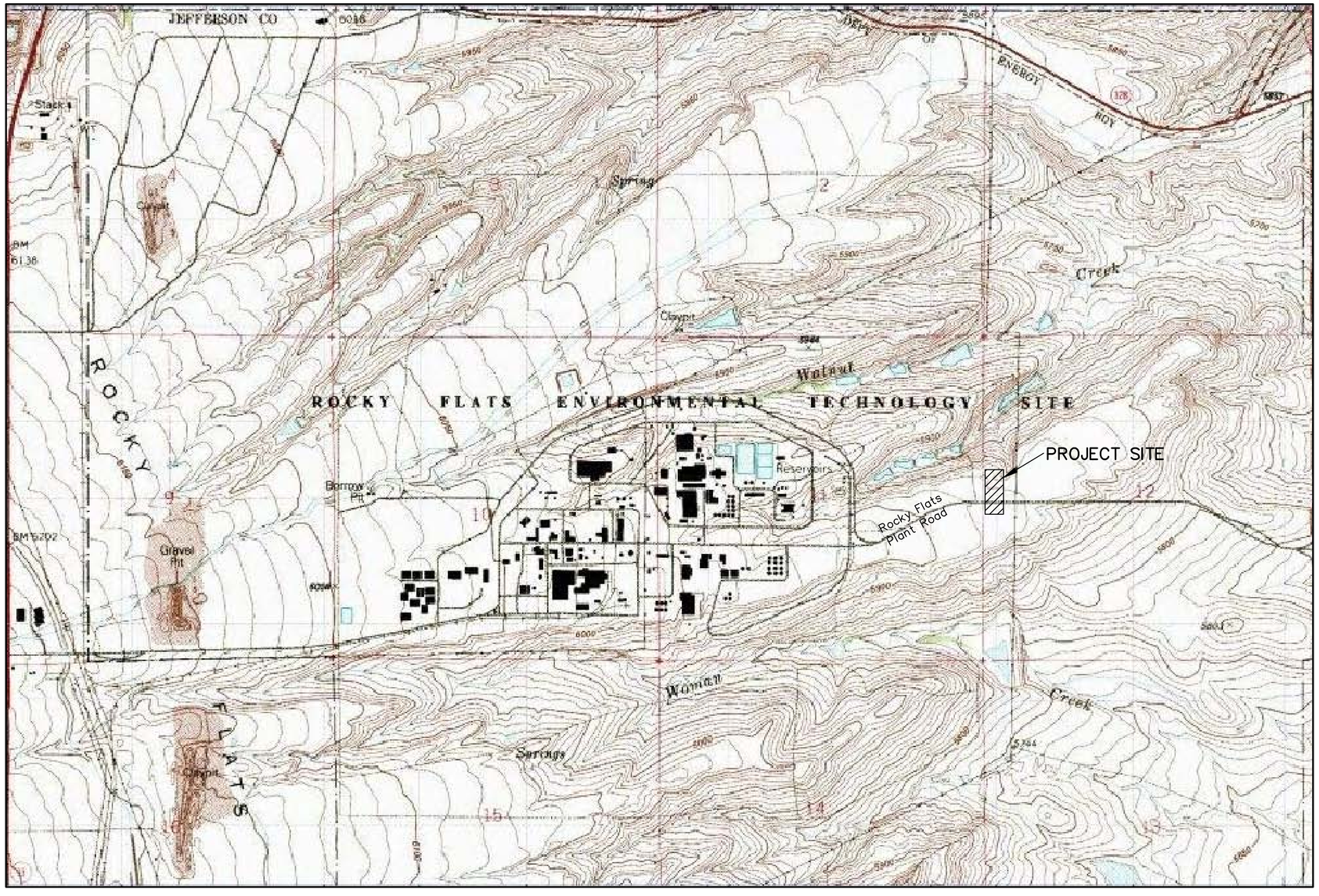
2) Pipeline Strategies, Inc.
   Mike Humberd
   719-520-9279

3) Olsson Associates, Inc.
   David Cloutier
   303-237-2072

STORMWATER MANAGEMENT PLAN
MAINLINE VALVE REPLACEMENT

SHEET INDEX

1	TS	COVER SHEET
2	SP	SITE PLAN



VICINITY MAP
N.T.S

DEVELOPER

XCEL ENERGY
1123 WEST 23RD AVENUE
DENVER, CO. 80223
CONTACT: ERIC SWEENY

SWMP ENGINEER

OLSSON ASSOCIATES
4690 TABLE MOUNTAIN DRIVE,
SUITE 200 GOLDEN, CO 80403
CONTACT: NICK HOLLAND
TEL: 303-237-2072
FAX: 303-520-7653

OLSSON ASSOCIATES
143 Union Boulevard, Suite 700
Lakewood, CO 80228-1825
TEL 720.962.6072
FAX 720.962.6195
www.oaconsulting.com

OLSSON ASSOCIATES ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS (HORIZONTAL OR VERTICAL). THE EXISTING UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS HOWEVER THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.

UNCC
UTILITY NOTIFICATION CENTER OF COLORADO
800.922.1987

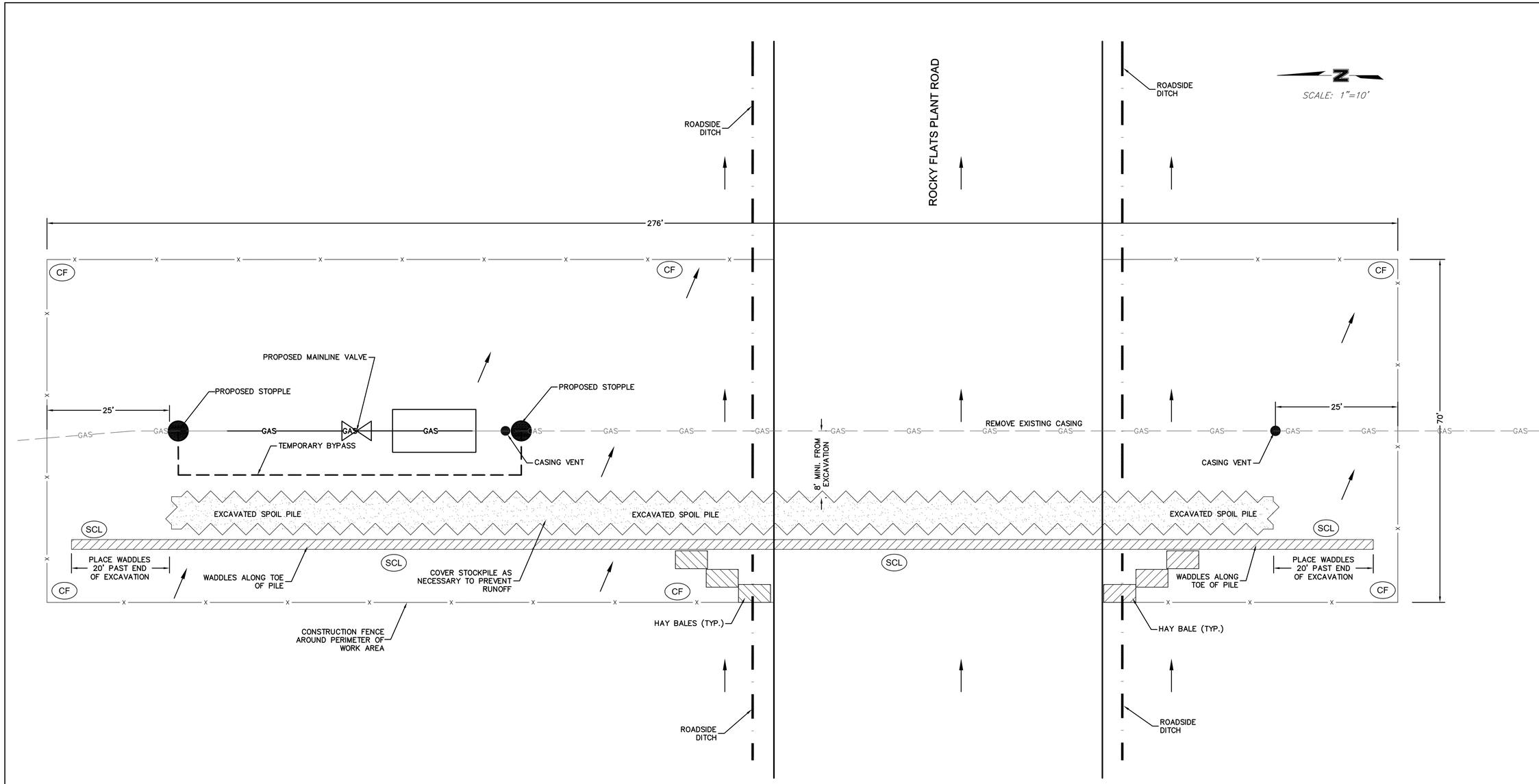
CALL 1-800-922-1987 SEVENTY TWO HOURS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REV. NO.	DATE	REVISIONS

MAINLINE VALVE REPLACEMENT
12-INCH GOLDEN PIPELINE
COLORADO
2009

drawn by: BKB
checked by: NH
approved by: DC
QA/QC by:
project no.:
drawing no.:
date: 05-11-09

DWG: F:\Projects\Golden 12-inch Pipeline\LDD 12-pipeline\dwg\P&Z\SWMP\MLV.dwg USER: bbeckley
DATE: May 11, 2009 10:11am XREFS: TB



NOTE:
DRAINAGE ON SITE FLOWS FROM WEST TO EAST WITH A 0.9 FOOT DROP IN ELEVATION.

LEGEND

GAS	12" EXISTING PIPELINE
GAS	12" PROPOSED PIPELINE ROUTE AND VALVE SET
X (CF)	CONSTRUCTION FENCE
	SPOIL PILE
SCL	SEDIMENT CONTROL LOG
	DIRECTION OF FLOW
	HAY BALES

OLSSON ASSOCIATES
143 Union Boulevard, Suite 700
Lakewood, CO 80228-1825
TEL 720.962.6772
FAX 720.962.6195
www.oaconsulting.com

OLSSON ASSOCIATES ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS (HORIZONTAL OR VERTICAL). THE EXISTING UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS HOWEVER THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.

UNCC UTILITY NOTIFICATION CENTER OF COLORADO 800.922.1987

CALL 1-800-922-1987 SEVENTY TWO HOURS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REV. NO.	DATE

REVISIONS

MAINLINE VALVE REPLACEMENT

12-INCH GOLDEN PIPELINE

COLORADO

2009

drawn by: BKB
checked by: NH
approved by: DC
QA/QC by:
project no.:
drawing no.:
date: 05-11-09

2 OF 2

DWG: F:\Projects\Golden 12-inch Pipeline\LDD 12-pipeline\dwg\P&Z\SWMP\MLV.dwg USER: bbeckley
DATE: May 11, 2009 10:12am XREFS: TB

ROCKY FLATS SITE
REGULATORY CONTACT RECORD

Purpose: Soil disturbance for road maintenance and improvement work involving the construction of roadside drainage ditches that will not return excavation to preexisting grade.

Contact Record Approval Date: 8/11/09

Site Contact(s)/Affiliation(s): Jeremiah McLaughlin, S.M. Stoller; Rick DiSalvo, S.M. Stoller

Regulatory Contact(s)/Affiliation(s): Carl Spreng, CDPHE

Discussion Maintenance, repair and upgrades to certain portions of gravel roads within the Central Operable Unit are planned for mid- to late August, 2009. Upgrades will include installing/repairing shallow drainage ditches along some portions for better precipitation run on and run off controls. These ditches are the same basic design as ditches approved under Contact record 2007-04 for the Phase III road repair/maintenance work conducted in August 2007.

One existing drainage ditch along the road bordering the east side of the Original Landfill east diversion channel (S-curve) will be extended and a new drainage ditch will be constructed along the south side of road to the Solar Ponds Plume Treatment System. When they are completed, the center of the ditches will be 1 foot below the existing grade with an approximately 3:1 taper up to the existing grade. The ditches will be lined with permanent erosion matting and the disturbed area will be reseeded.

The Rocky Flats Legacy Management Agreement (RFLMA), Attachment 2, Table 4, Institutional Control (IC) Number 3, stipulates that soil disturbance must be in accordance with the CDPHE-approved Erosion Control Plan (ECP) and that the soil surface must be restored to the preexisting grade after any soil-disturbance activity has occurred. Work will be done in accordance with the ECP, but of necessity, soil will not be restored to the preexisting grade where the ditches are to be constructed.

The ditches are needed to meet the design objective to facilitate drainage, and the construction is a field modification. DOE may implement field modifications that are consistent with the intent of the approved action (in this case, IC Number 3) upon approval by CDPHE, in accordance with RFLMA, paragraph 34. This contact record is to document CDPHE approval.

The objective of the IC is to maintain the current depth to subsurface contamination or contaminated structures. This IC also results in achieving compliance with the CDPHE risk management policy of ensuring that residual risks to the site user are at or below 1x10-6. Based on a review of the areas where ditches are to be constructed, and based on the limited aerial extent, the minor change in depth to subsurface contamination does not impact meeting the risk management policy.

CDPHE has requested that the following information be included in contact records for soil excavation related to this IC that will not return soil to the preexisting grade:

1) Provide information about any remaining subsurface structures in the vicinity so that the minimum cover assumption will not be violated (or state that there are none if that is the case).

None of the areas where ditches are planned to be constructed have remaining subsurface structures in the vicinity of the planned ditches.

2) Provide information about any former IHSSs/PACs or other known soil or ground water contamination in the vicinity (or state that there is no known contamination).

There is no known soil or ground water contamination in the vicinity of the planned ditches.

3) Resurvey any new surface established in subsurface soil, unless sufficient existing data is available to characterize the surface (or state that the excavated soil will be replaced and the original contours restored).

When completed, the center of the ditches will be 1 foot below the existing grade with a 3:1 taper up to the existing grade.

Closeout of Contact Record: This contact record will be closed when the work is completed and post-construction revegetation and erosion controls are in place.

Resolution

Carl Spreng, CDPHE, approved the placement of the ditches as described in this contact record.

Contact Record Prepared by: Jeremiah McLaughlin and Rick DiSalvo

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Distribution:
Carl Spreng, CDPHE
Scott Surovchak, DOE
Linda Kaiser, S.M. Stoller
Rocky Flats Contact Record
File

ROCKY FLATS SITE
REGULATORY CONTACT RECORD

Purpose: Replace East Trenches Plume Treatment System (ETPTS) media and make minor changes to the piping configuration.

Contact Record Approval Date: 9/15/09

Site Contact(s)/Affiliation(s): Scott Surovchak, U.S. Department of Energy (DOE); John Boylan, S.M. Stoller (Stoller); Rick DiSalvo, Stoller

Regulatory Contact(s)/Affiliation(s): Carl Spreng, Colorado Department of Public Health and Environment (CDPHE)

Discussion: A routine maintenance activity to remove the ETPTS spent treatment media (zero valent iron [ZVI] filings) and replace it with new ZVI media is scheduled for late September through October 2009. The last ETPTS media replacement was performed in 2005. The work proposed for 2009 was discussed at a consultation meeting with DOE, CDPHE, and Stoller staff on September 10, 2009.

The PVC piping in the two treatment cells will also be removed with the media (it is, by design, sacrificial). New PVC piping will be installed as part of the media replacement, but the piping configuration will be changed slightly to allow easier field operational alignment to provide either up flow or down flow of water through the media. Although the system plumbing was improved in 2006 to allow both of these flow configurations, the currently proposed upgrades will make these adjustments easier to effect and will eliminate subsurface valves that have proved problematic in some cases. The flexibility to switch the flow directions based on treatment system monitoring results allows flow characteristics to be optimized within the media as conditions warrant.

As part of this minor change to the piping configuration, a new concrete vault (approximately 6 feet wide by 7 feet long and 6 feet deep) will be installed between the two treatment cells to house the terminal ends of the piping from the cells. Removable piping sections with watertight couplings will be used within this vault to connect the pipes supporting each treatment cell to establish the desired flow configuration. Designing these pipes to be easily removable will facilitate potential maintenance needs, such as unclogging pipes. The influent lines will pass through the new vault before entering the treatment cells, and the effluent lines will pass through the new vault before flow is routed to the existing effluent manhole. A copy of the design drawing showing the plan view of the existing configuration and the new vault and piping is included as Attachment 1.

The work will include excavation to approximately 6 to 8 feet below ground surface to install the vault and piping. This excavation work will exceed the 3-foot depth limit specified by Rocky Flats Legacy Management Agreement (RFLMA) institutional control (IC) 2 (RFLMA, Attachment 2, Table 4, Control 2); thus, the procedures require preapproval.

Furthermore, IC 3 (RFLMA, Attachment 2, Table 4, Control 3) stipulates that soil disturbance must be in accordance with the CDPHE-approved Erosion Control Plan and that the soil surface must be restored to the preexisting grade after any soil-disturbance activity has occurred.

The objective of the ICs is to maintain the current depth to subsurface contamination or contaminated structures. These ICs also result in achieving compliance with the CDPHE risk management policy of ensuring that residual risks to the site user are at or below 1×10^{-6}. As discussed below, the proposed work achieves the risk management policy goal.

Excavation will be reduced to the extent feasible, and soils will be returned to approximately the preexisting grade. Excess soils from the excavation after the new vault is installed will be used in the immediate area to reduce the potential for ponding and enhance drainage away from the treatment cells and associated vaults, and any leftover soil will be spread in areas where additional soils may be used to facilitate revegetation. The best management practices in the *Erosion Control Plan for Rocky Flats Property Central Operable Unit, DOE-LM/1497-2007* (July 2007) will also be implemented to provide erosion controls for the construction area so that run-on and runoff will be minimized.

The ETPTS is expected to be shut down for several weeks to accomplish the work. Water within the treatment cells at the start of the project will be pumped out through the ETPTS effluent manhole. Water from precipitation in the excavation that may impact the construction work, or that accumulates in the treatment cells during the work, will be pumped to the ground in the area northwest of the excavation area. If water that collects in the ETPTS collection trench needs to be managed to reduce the levels in the trench, it will be transferred to the Mound Site Plume Treatment System.

CDPHE has requested that the following information related to ICs be included in contact records for soil excavation:

1) Provide information about any remaining subsurface structures in the vicinity so that the minimum cover assumption will not be violated (or state that there are none if that is the case).

The work is at the ETPTS. Except for ETPTS-related components, there are no other subsurface structures in the immediate vicinity.

2) Provide information about any former IHSSs/PACs [Individual Hazardous Substance Sites/Potential Areas of Concern] or other known soil or ground water contamination in the vicinity (or state that there is no known contamination).

The East Trenches Plume is upgradient of the ETPTS. There are no former IHSSs or PACs in the vicinity of the excavation area.

3) Resurvey any new surface established in subsurface soil, unless sufficient existing data is available to characterize the surface (or state that the excavated soil will be replaced and the original contours restored).

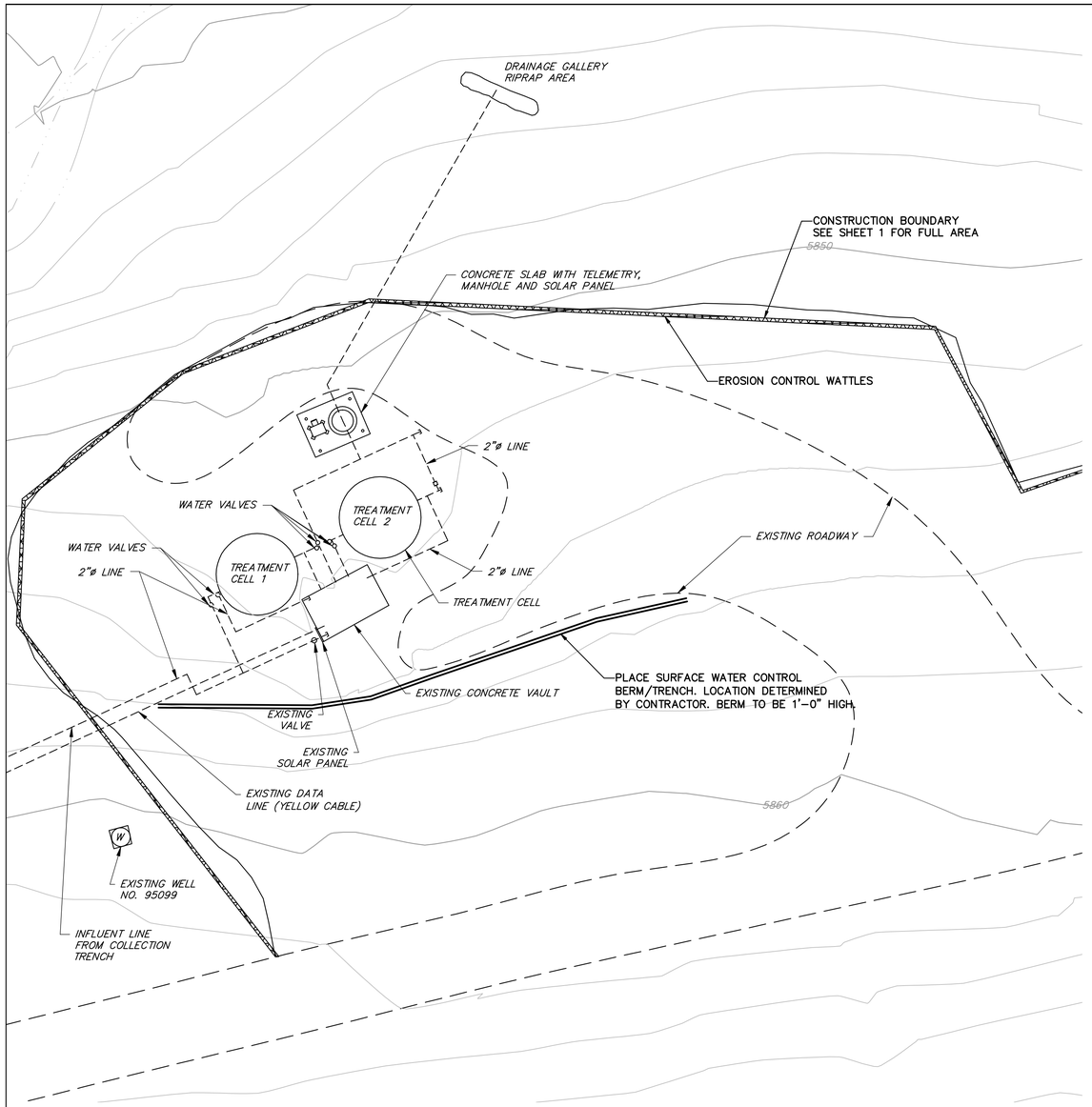
When completed, the surrounding soil will be generally consistent with the existing grade, with some very minor improvements to facilitate drainage and prevent ponding at the treatment cells. The new vault will protrude above the surface by about 1 foot.

Closeout of Contact Record: This contact record will be closed when the work is completed and post-construction revegetation and erosion controls are in place.

Resolution: Carl Spreng, CDPHE, approved this contact record.

Contact Record Prepared By: John Boylan and Rick DiSalvo

Distribution:
Carl Spreng, CDPHE
Scott Surovchak, DOE
Linda Kaiser, Stoller
Rocky Flats Contact Record
File



EXISTING CONDITION SITE PLAN

N

SCALE IN FEET

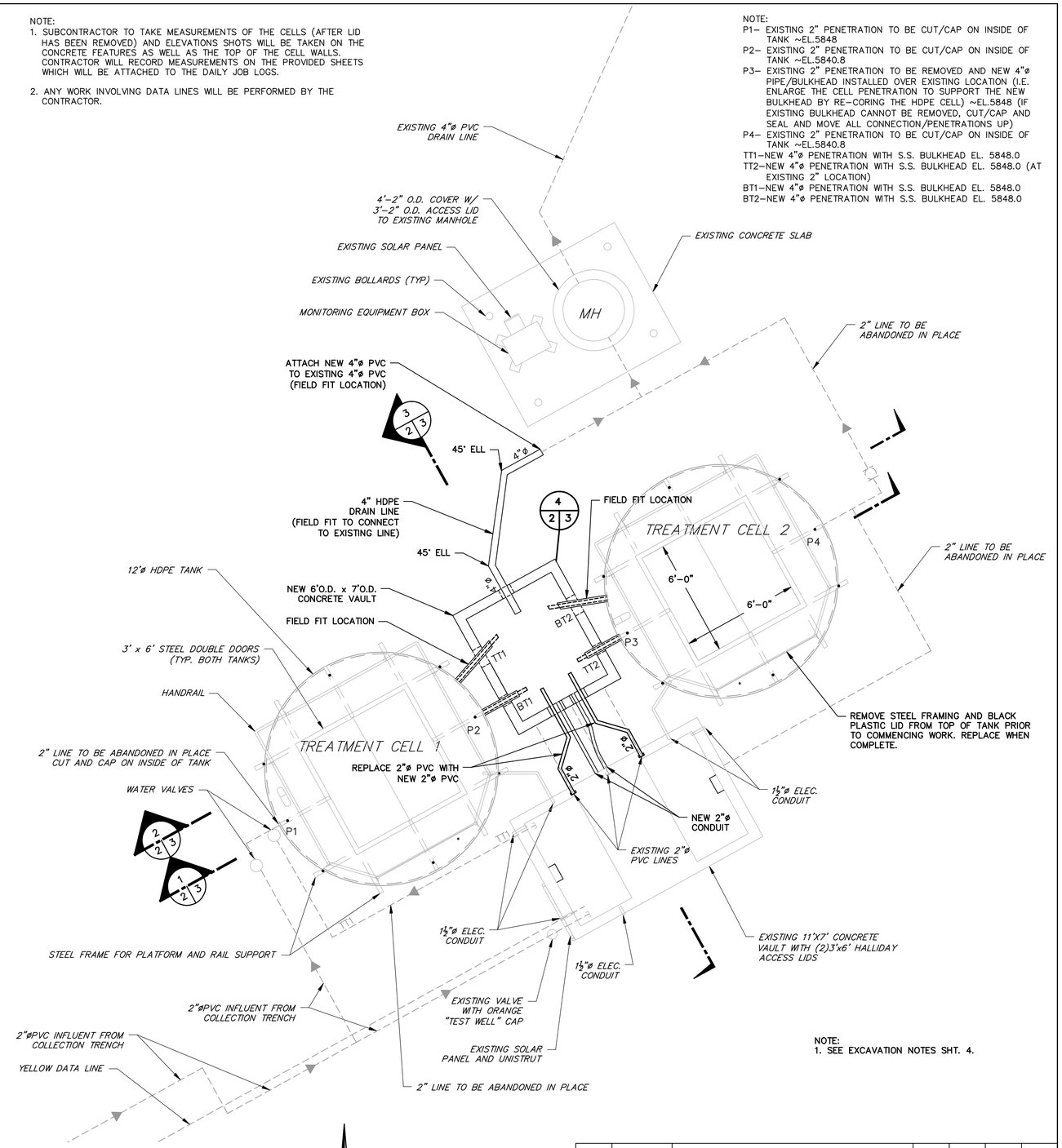
10 5 0 10 20 30

CONTOUR INTERVAL = 2 FOOT

NOTE:
1. SUBCONTRACTOR TO TAKE MEASUREMENTS OF THE CELLS (AFTER LID HAS BEEN REMOVED) AND ELEVATIONS SHOTS WILL BE TAKEN ON THE CONCRETE FEATURES AS WELL AS THE TOP OF THE CELL WALLS. CONTRACTOR WILL RECORD MEASUREMENTS ON THE PROVIDED SHEETS WHICH WILL BE ATTACHED TO THE DAILY JOB LOGS.

2. ANY WORK INVOLVING DATA LINES WILL BE PERFORMED BY THE CONTRACTOR.

NOTE:
P1– EXISTING 2" PENETRATION TO BE CUT/CAP ON INSIDE OF TANK ~EL.5848
P2– EXISTING 2" PENETRATION TO BE CUT/CAP ON INSIDE OF TANK ~EL.5840.8
P3– EXISTING 2" PENETRATION TO BE REMOVED AND NEW 4"ø PIPE/BULKHEAD INSTALLED OVER EXISTING LOCATION (I.E. ENLARGE THE CELL PENETRATION TO SUPPORT THE NEW BULKHEAD BY RE–CORING THE HDPE CELL) ~EL.5848 (IF EXISTING BULKHEAD CANNOT BE REMOVED, CUT/CAP AND SEAL AND MOVE ALL CONNECTION/PENETRATIONS UP)
P4– EXISTING 2" PENETRATION TO BE CUT/CAP ON INSIDE OF TANK ~EL.5840.8
TT1–NEW 4"ø PENETRATION WITH S.S. BULKHEAD EL. 5848.0
TT2–NEW 4"ø PENETRATION WITH S.S. BULKHEAD EL. 5848.0 (AT EXISTING 2" LOCATION)
BT1–NEW 4"ø PENETRATION WITH S.S. BULKHEAD EL. 5848.0
BT2–NEW 4"ø PENETRATION WITH S.S. BULKHEAD EL. 5848.0



NOTE:
1. SEE EXCAVATION NOTES SHT. 4.

N

PLAN VIEW

SCALE: 1" = 3'

LEGEND

TT	TOP OF TREATMENT CELL
BT	BOTTOM OF TREATMENT CELL
ELEC	ELECTRICAL
MH	MANHOLE
O.D.	OUTSIDE DIAMETER
P(1,2,3,4)	PENITRATION NUMBER

SUBMITTALS REQUIREMENTS:
1.0 SUBMITTALS–THE SUBCONTRACTOR SHALL PROVIDE SUBMITTALS REQUIRED BY THE SUBCONTRACT DOCUMENTS IN ACCORDANCE WITH THE WORK ORDER RELEASE AND THESE DRAWINGS. REVISE AND RESUBMIT ITEMS, AS NECESSARY, TO ESTABLISH COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.
1.2 GENERAL SUBMITTAL REQUIREMENTS
A. FOR REVIEW: REVIEW IS REQUIRED FOR EXTENSIONS OF DESIGN, CRITICAL MATERIALS, PROPOSED APPROVED EQUAL MATERIAL SUBSTITUTIONS, DEVIATIONS, EQUIPMENT THAT MUST BE CHECKED, COMPATIBILITY WITH THE ENTIRE SYSTEM, AND OTHER ITEMS AS DESIGNATED IN THE SUBCONTRACT DOCUMENTS THAT REQUIRE CONTRACTOR REVIEW.
B. FOR INFORMATION ONLY: ALL SUBMITTALS NOT REQUIRING CONTRACTOR REVIEW WILL BE FOR INFORMATION ONLY.
1.3 REQUIRED SUBMITTALS–BELOW ITEMS REQUIRE A SUBMITTAL. CONTRACTOR MAY REQUIRE ADDITIONAL MATERIAL SUBMITTALS DURING THE CONSTRUCTION PROCESS THAT ARE NOT INCLUDED ON THE BELOW LIST.
A. DELIVERY TICKETS (FOR INFORMATION)
B. EQUIPMENT LIST (FOR INFORMATION)
C. PEA GRAVEL (FOR REVIEW)
D. LIFTING PLAN (FOR REVIEW)
E. RUBBER BOOTS (FOR REVIEW)
F. BULKHEADS (FOR REVIEW)
G. HDPE–PVC CONNECTION (FOR REVIEW)
H. WATER FOR TESTING (FOR INFORMATION)

REVEGETATION/EROSION CONTROL NOTES:

1. PRE–CONSTRUCTION INSTALLATION OF WATTLES FOR EROSION CONTROL SHALL BE CONDUCTED BY SUBCONTRACTOR.
2. SUBCONTRACTOR IS RESPONSIBLE FOR MAINTENANCE/REPAIR OF EROSION CONTROLS THROUGHOUT THE DURATION OF THE PROJECT. THE EROSION CONTROL PLAN FOR ROCKY FLATS PROPERTY CENTRAL OPERABLE UNIT SHALL BE FOLLOWED ALONG WITH ANY ADDITIONAL SPECIFICATIONS/DIRECTION FROM THE CONTRACTOR.
3. PRIOR TO DEMOBILIZING AND AFTER COMPLETION OF THE CONSTRUCTION/PROJECT ACTIVITIES THE SUBCONTRACTOR SHALL SCARIFY ALL AREAS IDENTIFIED BY CONTRACTOR (EXCLUDING ROADS AND PARKING AREAS) THAT WERE DISTURBED BY THE PROJECT TO A DEPTH OF 6 INCHES.
4. REVEGETATION WILL BE CONDUCTED BY THE CONTRACTOR.
5. ALL STOCKPILED SOILS SHALL REMAIN INSIDE THE EROSION CONTROLS. AND SHALL HAVE WATTLES PLACED AROUND THEIR PERIMETER.
6. NO PROJECT ACTIVITIES OR STOCKPILING OF MATERIALS/SOILS ARE ALLOWED IN THE ADJACENT PREBLE'S MEADOW JUMPING MOUSE HABITAT OR WETLAND MITIGATION AREAS. THESE AREAS WILL BE FLAGGED (BY CONTRACTOR) AND SHOWN TO THE SUBCONTRACTOR DURING THE PRE–JOB CONFERENCE/BRIEFING.

REVISION NO.	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	PROJECT A/E	APPROVAL

U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION, COLORADO

Work Performed by
S.M. Stoller Corporation
Under DOE Contract
No. DE–AM01–07LM00060

PROJECT LOCATION: ROCKY FLATS SITE, JEFFERSON COUNTY, CO

REFERENCE

APPROVALS		
DRAWN BY	S. PITTON	9/17/09
ENGINEER	S. PITTON	9/17/09
PROJECT ENGINEER	S. PITTON	9/17/09
ENGINEERING MANAGER	M. MADRIL	9/17/09
PROJECT LEAD	J. BOYLAN	9/17/09
SITE MANAGER/LEAD	L. KAISER	9/17/09

ETPTS PLUMBING MODIFICATIONS

SITE PLAN

PROJECT NO. LTS–111–0056–10–006 | SHT. 2 OF 6

DRAWING NO. S05752–R00–P01–D+

M:\LTS\111\0056\10\006\S05752\S0575200.DWG 09/17/09 6:04pm pittons

ROCKY FLATS SITE
REGULATORY CONTACT RECORD

Purpose: Installation of snow fencing north of the Original Landfill (OLF) and approval of work after closeout of Contact Record.

Contact Record Approval Date: October 16, 2009

Site Contact(s) / Affiliation(s): Scott Surovchak, U.S. Department of Energy (DOE); Jeremiah McLaughlin, S.M. Stoller; Rick DiSalvo, S.M. Stoller

Regulatory Contact(s) / Affiliation(s): Carl Spreng, Colorado Department of Public Health and Environment (CDPHE)

Discussion: Snow fencing will be installed north of the OLF to minimize snow drifting that could cause snow and ice to build up on the OLF cover, as discussed during consultation regarding the OLF geotechnical investigation work (refer to RFLMA Contact Record 2008-07).

The snow-fence design includes nine sections of snow fence, with H-bracing on the ends of each section and fencing T-posts spaced between the H-braces. Each H-brace has two wood posts, each 4 inches in diameter. To place each post, a hole (1 foot in diameter) must be drilled, the post must be put in it, and the rest of the hole must be filled with post mix. T-posts are installed using a post driver.

Attachment 1 shows the planned location of each section of fencing in relation to the OLF waste footprint outline. The OLF has a soil cover at least 2 feet thick over the waste footprint. The southern ends of snow fence sections 7 through 9 are over the waste footprint.

The H-braces within the OLF waste footprint will be installed to a depth of not more than 2 feet below the surface, to stay within the OLF soil cover material depth. The H-braces outside the OLF waste footprint will be installed to a depth of approximately 3 feet below the surface. The T-posts inside and outside the OLF waste footprint will be installed to a depth of approximately 2 feet.

The construction involves excavation prohibited by the institutional controls (ICs) incorporated into the Rocky Flats Legacy Management Agreement (RFLMA). The post holes for the H-braces outside the OLF waste footprint may slightly exceed the 3-foot-depth limit specified by ICs (RFLMA, Attachment 2, Table 4, IC 2), and drilling, excavation, and construction on the cover of the OLF is prohibited, except for remedy-related purposes (RFLMA, Attachment 2, Table 4, IC 6). Thus, CDPHE must approve the planned excavations and snow-fence construction on the cover of the OLF.

The objective of IC 2, regarding excavations with a depth that exceeds 3 feet, is to maintain the current depth to subsurface contamination or contaminated structures. This IC also results in achieving compliance with the CDPHE risk management policy of ensuring that residual risks to the site user are at or below 1×10^{-6}. As discussed in the information involving soil excavation below, the proposed work achieves the objective and risk management policy goal.

The objective of IC 6 is to ensure the proper functioning of the landfill cover. Minimizing snow and ice buildup on the cover, as discussed in RFLMA Contact Record 2008-07, is consistent with this objective.

Soils removed from the post holes will be spread in the area of the holes to blend in with the surrounding soils and minimize the impact on existing vegetation. The best management practices in the July 2007 *Erosion Control Plan for Rocky Flats Property Central Operable Unit* (DOE-LM/1497-2007) will also be considered if erosion controls for the excavated materials or construction work are deemed necessary.

CDPHE has requested that the following information be included in Contact Records that involve soil excavation:

1 - Provide information about any remaining subsurface structures in the vicinity so that the minimum cover assumption won't be violated (or state that there are none if that is the case).

There are no remaining subsurface structures in the vicinity, so minimum cover assumptions will not be violated. A buried Xcel Energy natural gas line is located in the snow fence area north of the OLF. Utility locates will be done, and the location of the gas line will be marked prior to soil disturbance.

2 - Provide information about any former Individual Hazardous Substance Sites (IHSSs)/Potential Areas of Concern or other known soil or groundwater contamination in the vicinity (or state that there is no known contamination).

This OLF is former IHSS 115. The construction will take place in the 2-foot soil cover material in the OLF waste footprint, and will not impact the OLF waste.

3 - Resurvey any new surface established in subsurface soil, unless sufficient existing data is available to characterize the surface (or state that the excavated soil will be replaced and the original contours restored).

The final ground contours will approximate the pre-excavation contours. Excess soils generated from the excavation will be spread in with the surrounding soils.

Closeout of Contact Record: This Contact Record will be closed when the construction is completed.

The RFLMA Parties agreed, as documented in RFLMA Contact Record 2007-08, that the status of actions or activities in RFLMA Contact Records will be documented by DOE from time to time, and included in RFLMA quarterly or annual surveillance and maintenance reports for tracking purposes. The RFLMA Parties also agreed that to facilitate status reporting, Contact Records should include a short discussion of the anticipated actions or activities to close out the RFLMA Contact Record. Thus, RFLMA Contact Record 2007-08 and subsequent Contact Records now include the closeout discussion. However, under certain situations, activities previously approved in a Contact Record that has been closed out will need to be performed. For example, the snow fence posts will need to be maintained by replacing broken, bent or rotted posts and realigning the fence after heavy snow or wind. A simple notification and approval process has been developed for these situations, as described below.

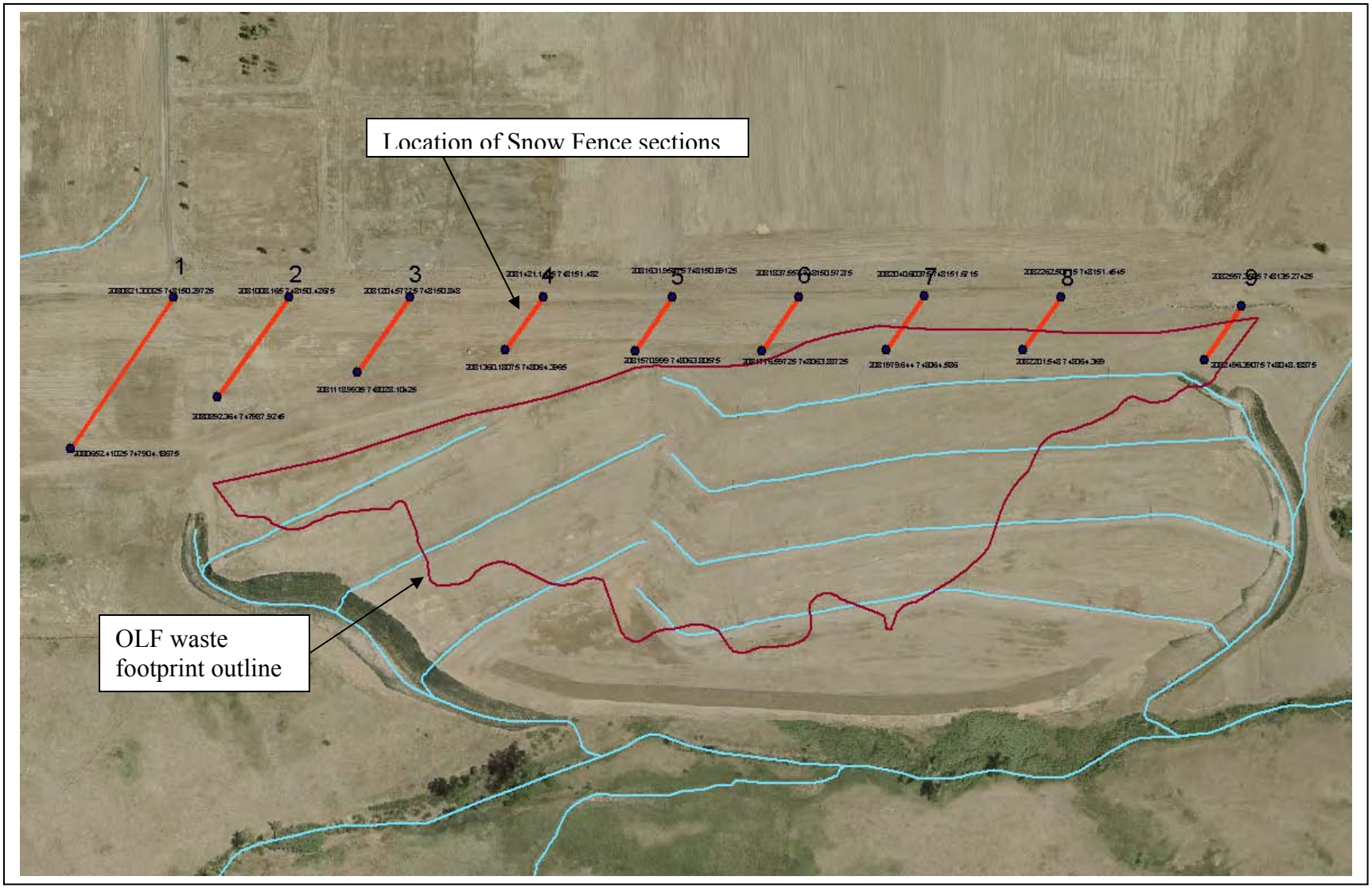
After this Contract Record is closed out, snow fence maintenance activities may be performed in accordance with it, after CDPHE has been notified of and approves the activities. The notification and approval may take place over the phone or in person, and followed up with an e-mail.

Similarly, CDPHE may approve activities previously covered by Contact Records that have been closed, even if the work was otherwise prohibited by ICs. CDPHE may receive notification of and approve the activities over the phone or in person, with e-mail follow-ups. The notification and approval of such work shall be reported in the next RFLMA annual report, in relation to the Contact Record that originally covered the work. This protocol is consistent with RFLMA paragraph 34.

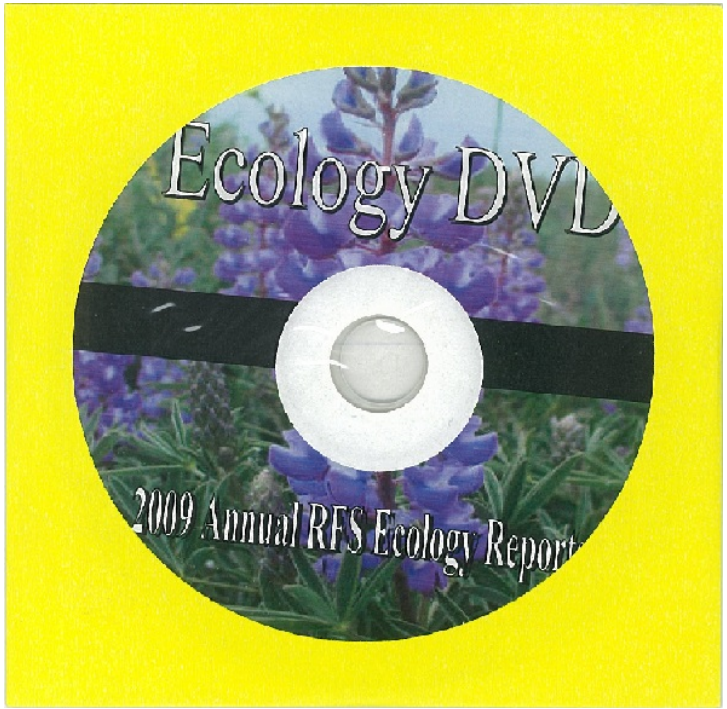
Resolution: The installation of the snow fence is approved as described in this Contact Record. The protocol for providing notification of, and approving, work for activities previously covered under other Contact Records is also approved.

Contact Record Prepared by: Rick DiSalvo

Distribution:
Carl Spreng, CDPHE
Scott Surovchak, DOE
Linda Kaiser, Stoller
Rocky Flats Contact Record
File


Location of Snow Fence sections
1
2
3
4
5
6
7
8
9
OLF waste
footprint outline

PD-A-000237

2009 Annual Ecology Report

This document is maintained in electronic form on DVD and may be requested by emailing rfinfo@LM.doe.gov.