# APPENDIX E
# Percentage of In-Control Duplicate Pairs for Field Collocated Samples

| Monitoring Program | Media | Analyte | Percent of Pairs within Control Limit[a] |
|---|---|---|---|
| Livermore Site and Site 300 Ambient Air | Air Filters | Beryllium | 94% |
| Livermore Site and Site 300 Ambient Air | Air Filters | Uranium-235 | 75% |
| Livermore Site and Site 300 Ambient Air | Air Filters | Uranium-235/238 | 100% |
| Livermore Site and Site 300 Ambient Air | Air Filters | Uranium-238 | 75% |
| Livermore Site and Site 300 Ambient Air | Air Filters | Gross alpha | 60% |
| Livermore Site and Site 300 Ambient Air | Air Filters | Gross beta | 89% |
| Air Tritium | Silica Gel | Tritium | 76% |
| Livermore Site, Livermore Valley and Site 300 Ambient Radiation | Dosimeters | Radiation dose, average | 100% |
| Livermore Site, Livermore Valley and Site 300 Ambient Radiation | Dosimeters | Radiation dose, 90-days | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Arsenic | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Barium | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Bicarbonate Alk (as $CaCO_3$) | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Boron | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Bromide | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Cadmium | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Calcium | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Chloride | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Chromium | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Copper | 75% |
| Groundwater from Off-site Wells and Springs | Groundwater | Fluoride | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Gross alpha | 57% |
| Groundwater from Off-site Wells and Springs | Groundwater | Gross beta | 78% |
| Groundwater from Off-site Wells and Springs | Groundwater | Iron | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Magnesium | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Manganese | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Nickel | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Nitrate (as N) | 33% |
| Groundwater from Off-site Wells and Springs | Groundwater | Nitrate (as NO3) | 82% |

## E. Percentage of In-Control Duplicate Pairs for Field Collected Samples

| Monitoring Program | Media | Analyte | Percent of Pairs within Control Limit[a] |
|---|---|---|---|
| Groundwater from Off-site Wells and Springs | Groundwater | Ortho-Phosphate | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Perchlorate | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Potassium | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Selenium | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Sodium | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Specific Conductance | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Sulfate | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Total Alkalinity (as $CaCO_3$) | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Total Hardness (as $CaCO_3$) | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Total Phosphorus (as $PO_4$) | 67% |
| Groundwater from Off-site Wells and Springs | Groundwater | Total dissolved solids (TDS) | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Trichloroethene | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Trichlorotrifluoroethane | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Tritium | 83% |
| Groundwater from Off-site Wells and Springs | Groundwater | Uranium-233/234 | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Uranium 235 and 236 | 50% |
| Groundwater from Off-site Wells and Springs | Groundwater | Uranium-238 | 100% |
| Groundwater from Off-site Wells and Springs | Groundwater | Vanadium | 100% |
| Pre-construction Soil | Soil | 2-Butanone | 100% |
| Pre-construction Soil | Soil | Acetone | 73% |
| Pre-construction Soil | Soil | Arsenic | 94% |
| Pre-construction Soil | Soil | Barium | 82% |
| Pre-construction Soil | Soil | Beryllium | 100% |
| Pre-construction Soil | Soil | Chromium | 100% |
| Pre-construction Soil | Soil | Cobalt | 94% |
| Pre-construction Soil | Soil | Copper | 100% |

| Monitoring Program | Media | Analyte | Percent of Pairs within Control Limit[a] |
|---|---|---|---|
| Pre-construction Soil | Soil | Diesel Fuel | 0% |
| Pre-construction Soil | Soil | Fuel Oil (No. 2-Diesel) | 25% |
| Pre-construction Soil | Soil | Gross alpha | 67% |
| Pre-construction Soil | Soil | Gross beta | 100% |
| Pre-construction Soil | Soil | Lead | 88% |
| Pre-construction Soil | Soil | Mercury | 62% |
| Pre-construction Soil | Soil | Molybdenum | 82% |
| Pre-construction Soil | Soil | Nickel | 100% |
| Pre-construction Soil | Soil | Nitrate (as N) | 100% |
| Pre-construction Soil | Soil | Plutonium 239+240 | 100% |
| Pre-construction Soil | Soil | Selenium | 100% |
| Pre-construction Soil | Soil | Vanadium | 100% |
| Pre-construction Soil | Soil | Zinc | 94% |
| Livermore Site, Livermore Valley and Site 300 Soil | Soil | Beryllium | 100% |
| Livermore Site, Livermore Valley and Site 300 Soil | Soil | Cesium-137 | 100% |
| Livermore Site, Livermore Valley and Site 300 Soil | Soil | Plutonium-238 | 100% |
| Livermore Site, Livermore Valley and Site 300 Soil | Soil | Plutonium-239/240 | 100% |
| Livermore Site, Livermore Valley and Site 300 Soil | Soil | Potassium-40 | 100% |
| Livermore Site, Livermore Valley and Site 300 Soil | Soil | Radium-226 | 100% |
| Livermore Site, Livermore Valley and Site 300 Soil | Soil | Radium-228 | 100% |
| Livermore Site, Livermore Valley and Site 300 Soil | Soil | Thorium-228 | 100% |
| Livermore Site, Livermore Valley and Site 300 Soil | Soil | Uranium-235 | 100% |
| Livermore Site, Livermore Valley and Site 300 Soil | Soil | Uranium-238 | 33% |
| Livermore Site, Livermore Valley and Site 300 Vegetation | Vegetation | Tritium | 100% |
| Livermore Site Storm Water Runoff | Storm Water | Lead | 0% |
| Livermore Site Storm Water Runoff | Storm Water | Magnesium | 100% |

## E. Percentage of In-Control Duplicate Pairs for Field Collected Samples

| Monitoring Program | Media | Analyte | Percent of Pairs within Control Limit[a] |
|---|---|---|---|
| Livermore Site Storm Water Runoff | Storm Water | Total suspended solids | 100% |
| Livermore Site Storm Water Runoff | Storm Water | Chemical oxygen demand | 100% |
| Livermore Valley Wine | Wine | Tritium | 50% |
| Sanitary Sewer Discharge to Livermore WRD | Sewer Effluent | Gross beta | 85% |
| | | | |
| Sanitary Sewer Discharge to Livermore WRD | Sewer Effluent | Tritium | 84% |
| Sanitary Sewer Discharge to Livermore WRD | Sewer Effluent | Biochemical oxygen demand | 100% |
| Sanitary Sewer Discharge to Livermore WRD | Sewer Effluent | Bromodichloro methane | 100% |
| Sanitary Sewer Discharge to Livermore WRD | Sewer Effluent | Chloroform | 100% |
| Sanitary Sewer Discharge to Livermore WRD | Sewer Effluent | Dibromochloro methane | 100% |
| Sanitary Sewer Discharge to Livermore WRD | Sewer Effluent | Specific conductance | 100% |
| Sanitary Sewer Discharge to Livermore WRD | Sewer Effluent | Tritium | 84% |

(a) Control limit is set at 30-percent; an RPD (relative percent difference) > 30-percent is out of control. See Chapter 8, Section 8.2.3, for more information about RPDs. Data date April 28, 2021.