**Section 742.APPENDIX C Tier 2 Illustrations and Tables**

**Section 742.TABLE F Methods for Determining Physical Soil Parameters**

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| Methods for Determining Physical Soil Parameters  |
| Parameter | Sampling Locationa | Method |
| ρb (soil bulk density) | Surface | ASTM-D 1556-90Sand Cone Methodb |
| ASTM-D 2167-94Rubber Balloon Methodb |
| ASTM-D 2922-91Nuclear Methodb |
| Subsurface | ASTM-D 2937-94Drive Cylinder Methodb |
| ρs (soil particle density) | Surface or Subsurface | ASTM-D 854-92Specific Gravity of Soilb |
| w (moisture content) | Surface or Subsurface | ASTM-D 4959-89 (Reapproved 1994)Standardb |
| ASTM-D D 4643-93 Microwave Ovenb |
| ASTM-D D2216-92Laboratory Determinationb |
| ASTM-D D3017-88 (Reapproved 1993)Nuclear Methodb |
| Equivalent USEPA Method (e.g., sample preparation procedures described in methods 3541 or 3550) |
| foc (fraction organic carbon content) | Surface or Subsurface | ASTM-D 2974-00Moisture, Ash, and Organic Matterappropriately adjusted to estimate the fraction of organic carbon as stated in Nelson and Sommers (1982)b |
| η or θT (total soil porosity) | Surface or Subsurface (calculated) | Equation S24 in Appendix C, Table A for SSL Model, or Equation R23 in Appendix C, Table C for RBCA Model, or Equation J&E16 in Appendix C, Table L for J&E Model |
| θa or θas (air-filled soil porosity) | Surface or Subsurface (calculated) | Equation S21 in Appendix C, Table A for SSL Model, or Equation R21 in Appendix C, Table C for RBCA Model, or Equation J&E18 in Appendix C, Table L for J&E Model |
| θw or θws (water-filled soil porosity) | Surface or Subsurface (calculated) | Equation S20 in Appendix C, Table A for SSL Model, or Equation R22 in Appendix C, Table C for RBCA Model, or Equation J&E17 in Appendix C, Table L for J&E Model |
| K (hydraulic conductivity) | Surface or Subsurface | ASTM-D 5084-90Flexible Wall Permeameterb |
| Pump Test |
| Slug Test |
| i (hydraulic gradient) | Surface or Subsurface | Field Measurement |

a. This is the location where the sample is collected

b As incorporated by reference in Section 742.120.

(Source: Amended at 37 Ill. Reg. 7506, effective May 15, 2013)