Table F-1. Hydrostratigraphic units in the vicinity of SRP[a,b,c]

Formation	Recharge	Discharge	Confining layers	Other characteristics
BARNWELL (& HAWTHORN)				
Surficial unit Miocene-Eocene Epoch, Tertiary Period 30 m thick in Separations Area	Winter rainfall is 31.2 cm/year. Total recharge is about 38 cm/year.	Onsite streams. Leakage through tan clay to McBean.	Tan clay at base; absent in M-Area	Fine to coarse sand and sandy clay with numerous clastic dykes (ironstone margin with clay center). "Tan clay" - 4-m thick unit at base of formation composed of 2 clay zones separated by a sandy zone. Tan clay is absent in A/M-Areas. Water-table aquifer in the central portion of SRP, but not in A/M-Areas. Water yield limited but sufficient for domestic use. Water table maps--Figs. 3-10, F-21, and F-24. L-Area cross-section--Fig. F-22. K_L = 0.6 m/day (Fig. F-19; also see Fig. F-14 and Table F-7). j = 0.2 - 0.25. I = 0.0188 (L-Area seepage basin to Steel Creek with 2-m head in basin). K_V(tan clay) = 1.6×10^{-3} m/day. $V_L = 365IK_L/j$ = 20.6 m/year. V_L= (14.5) (% gradient) m/year.

AW-1,
FE-2

Table F-1. Hydrostratigraphic units in the vicinity of SRP[a,b,c] (continued)

Formation	Recharge	Discharge	Confining layers	Other characteristics
BARNWELL (& HAWTHORN) (continued)				
				V_v = 2.1 m/year (unsaturated zone). Seepage rate from F-, H-, and M-Area seepage basins about 5.5 m/year because of constant discharges and low pH of waste streams.
MCBEAN				
Eocene Epoch, (Claiborne Group), Tertiary Period 24 m thick in Separations Area	From Barnwell (through tan clay in Central SRP). Offsite areas.	Upper Three Runs Creek and Four Mile Creek. Almost no leakage through the green clay to Congaree in central SRP; some leakage in A/M-Areas.	Tan clay at top; absent in A/M-Areas Green clay at base; discontinuous in A/M-Areas	Upper unit of clayey sands and sand; lower unit of calcareous clayey sand with void spaces that could result in rod drops or lost circulation during drilling operations. Calcareous zone with void spaces is not present in A/M-Areas. Corps of Engineers performed soil grouting of calcareous zone beneath major buildings. Green clay at base formation is 2 m thick in Separations Area, and supports head differences up to 24 m. Green clay is discontinuous in A/M-Areas, and thickens to 7 ml L-Area and to 18 m in the southeastern SRP. Water yields to wells moderate to large. Forms water-table aquifer in M-Area; elevations range from about 65 to 75 m.

AW-
FE-

Table F-1. Hydrostratigraphic units in the vicinity of SRP[a,b,c] (continued)

Formation	Recharge	Discharge	Confining layers	Other characteristics
MCBEAN (continued)				
				Water levels shown on Figs. 3-8, F-5, F-11, F-15, F-16, F-20, and F-33. Main body of contaminant plume in the A/M-Areas is moving at 7.6 m/year; this suggests K_L = 1.0 m/day. Outer fringe of plume is moving at about 76 m/year. Hydraulic conductivity of upper McBean is about twice that of lower McBean (0.13 versus 0.07 m/day; Table F-7). K_L = 0.9 m/day (Fig. F-19: also see Fig. F-14 and Table F-7). j = 0.20 - 0.25. I = 0.017. $V_L = 365IK_L/j$ = 27.9 m/year.
CONGAREE				
Eocene Epoch, (Claiborne Group), Tertiary Period 37 m thick in Separations Area	Principally in offsite areas; some leakage from McBean in A/M-Areas.	Savannah River and wetlands along upper Three Runs Creeks.	Green clay at top; discontinuous in A/M-Areas Pisolitic clay at base	Sand with some interbedded clay layers (absent in A/M-Areas). Becomes clayey sand in A/M-Areas, and is similar in character to McBean. Pervasive pisolitic clay at base correlates with similar clays in Gulf Coast.

AW-1, FE-2

Table F-1. Hydrostratigraphic units in the vicinity of SRP[a,b,c] (continued)

Formation	Recharge	Discharge	Confining layers	Other characteristics
CONGAREE (continued)				
		Almost no leakage downward through basal clay and upper Ellenton clay to Ellenton sands, or upward through green clay.	Top of Ellenton	Water yields to wells moderate to high: Central SRP: 2.5 m^3/min with 15-meter drawdown; A/M-Areas: 0.11 m^3/min with 9-meter drawdown. Water levels shown on Figs. 3-8, F-5, F-10, F-11, F-16, F-17, F-18, F-28, F-29, and F-33. $K_V = 1.8 \times 10^{-4}$ m/day (of basal clay) Hydraulic conductivity: F/H-Areas: K_L = 1.5 m/day (Table F-7; Fig. F-14). C/P-Areas: K_L = 40 m/day. A/M-Areas: K_L = 0.7 to 1.0 m/day. Effective porosity: F/H-Areas: j = 0.20. A/M-Areas: j = 0.14. I = 0.0015 to 0.005. $V_L = 365IK_L/j$ = F/H-Areas: 13.7 m/year. A/M-Areas: 3.2 m/year.

Table F-1. Hydrostratigraphic units in the vicinity of SRP[a,b,c] (continued)

Formation	Recharge	Discharge	Confining layers	Other characteristics
ELLENTON				
Upper Cretaceous (Period) or Paleocene Epoch of Tertiary Period 18 m thick in Separations Area No surface exposure	From underlying Tuscaloosa and offsite areas.	Upper clay layer of Tuscaloosa *may be discon-*tinuous or or contain sandy zones which permit communication.	Lower pisolitic clay of Congaree Upper clay layer of Ellenton Upper clay layer of Tuscaloosa; usually not effective confining layer	Upper 3-5 m thick lignitic clay, silty and sandy clay layer, *becoming thicker toward* northwest (10 m in A/M-Areas). Lower layer of medium-to-coarse clayey quartz sand. Permeable portion of Ellenton and upper Tuscaloosa considered to be single aquifer. Water levels shown on Figs. 3-8, F-5, F-10, F-12, F-27, and F-33. $K_v = 9.8 \times 10^{-5}$ m/day (of upper clay unit).
TUSCALOOSA				
Upper Cretaceous (Period) 180 m thick in Separations Area	Principally from offsite areas - outcrop area 15-50 km wide in South Carolina near the Fall Line and in major stream valley (see Figs. F-7 and F-31).	Upper Tuscaloosa to lower unit of Ellenton. Ground water beneath SRP flows to sink along Savannah River.	Upper clay layer of Ellenton Upper clay layer of Tuscaloosa; usually not effective confining layer Basal clay layer	Two aquifer units within Tuscaloosa separated by clay layer: Upper layer of clay, sandy clay, and clayey sand 18 m thick allows communication with Ellenton aquifer. Upper aquifer of well-sorted medium to coarse sand 46 m thick. Middle layer 12 m thick with one or more clay units. Lower aquifer of well-sorted medium to coarse sand 92 m thick.

AW-1, FE-2

Table F-1. Hydrostratigraphic units in the vicinity of SRP[a,b,c] (continued)

Formation	Recharge	Discharge	Confining layers	Other characteristics
TUSCALOOSA (continued)				
				Basal clay layer 12 m thick overlying saprolitic basement. Water yields to wells are large with 3.5-4.0 m^3/min wells having drawdowns of 6-12 meters at center of core of depression and during pumping tests. Drawdowns are typically 0.3 m 490-700 m from pumping well. Water levels shown on Figs. 3-8, F-5, F-6, F-7, F-8, F-9, F-10, F-11, F-12, F-16, F-22, F-27, F-28, F-29, and F-33. In central SRP, heads in Tuscaloosa are higher than Congaree heads; opposite is true in A/M-Areas. Differences beneath seepage basins are currently about: Area — Upward differential (m) L — 3.7 F — 7.6 H — 3.0 M — -5.5 Transmissivity (11 values): Mean is 1.5 x 10^6 ℓ/day/m^2. Mean is 1.4 x 10^6 ℓ/day/m^2. Storage coefficient (mean of 7 values) is 4.5 x 10^{-4}.

AW-1, FE-2

Table F-1. Hydrostratigraphic units in the vicinity of SRP[a,b,c] (continued)

Formation	Recharge	Discharge	Confining layers	Other characteristics
TUSCALOOSA (continued)				
				K_L = 40.8 m/day. j = 0.2 - 0.30. I = 0.0007. $V_L = 365IK_L/j$ = 52.2 m/year.

AW-1,
FE-2

[a]Additional descriptive information is presented in Table 3-8.

[b]Abbreviations:

K_L = Lateral hydraulic conductivity

K_V = Vertical hydraulic conductivity

I = Hydraulic gradient (decimal)

j = Effective porosity (decimal)

V_L = Lateral ground-water velocity

V_V = Vertical ground-water velocity

[c]Sources: Du Pont (1983c); Root (1983)