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**FINAL REPORT SUBSURFACE STRATIGRAPHY AND
STRUCTURE OF A/M AREA AT THE SAVANNAH RIVER SITE,
AIKEN COUNTY, SOUTH CAROLINA (U)**

by

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Westinghouse Savannah River Company
Savannah River Site
Aiken, South Carolina 29808

This is a Technical Report

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FINAL REPORT
SUBSURFACE STRATIGRAPHY AND STRUCTURE
OF
A/M AREA

at the

SAVANNAH RIVER SITE
Aiken County, South Carolina

August, 1991

Prepared by:

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INTRODUCTION

This study of stratigraphy and structure is part of the A/M Area Hazardous Waste Management Facility Post-Closure Care Permit process. A/M area (**Figure 1**) covers approximately 6 square miles in the northwestern part of the Savannah River Site (SRS). The area is within the Atlantic Coastal Plain Province, approximately 30 miles southeast of outcropping Appalachian metamorphic rocks of the Piedmont Province at the Fall Line. Located on the Aiken Plateau, its topographic relief is about 180 feet. Most of A/M area is drained by Tims Branch, which flows into Upper Three Runs, which in turn empties into the Savannah River. A small area in the extreme northwestern part of A/M area is drained by small, unnamed streams which flow toward the Savannah River floodplain.

This analysis is based on examination of lithologic and geophysical logs of 93 wells in the area (**Figure 2**), supplemented by logs from wells to the east, south, and west. The A/M well log data base is shown in **Table 1**. Paleontologic data are available from wells ABP-3B, MCB-5C, 6A, MSB-19A, 21TA, 23A, 26AA, 30A, 40TA, 55C, 66TA, and 84C. Age determinations were made by Bujak Davies Group, Calgary, Alberta; Clark Geological Services, Fremont, California; U.S. Geological Survey, Washington, D.C.; and Waanders Palynology Consulting, San Marcos, California. Paleontologic data are more abundant in wells downdip from A/M area, and lithologic correlation from these into A/M area provides additional control. Because of similarities in lithology among the various stratigraphic units and lateral facies changes within units, correlations are difficult. The interpretation presented in this report, therefore, may change as more wells are drilled.

The Coastal Plain section in A/M area, composed almost entirely of Late Cretaceous and Tertiary quartz sands and clays, is approximately 700 to 800 feet thick. Thin alluvial, colluvial, and possibly eolian sediments, of late Tertiary and Quaternary age occur at the surface in places. The Coastal Plain sediments were deposited in fluvial, deltaic, bay or lagoonal, and shallow marine environments and overlie Paleozoic (and Precambrian?) metamorphic rocks of the Appalachian orogen. Early Mesozoic sediments of the Newark Supergroup occur beneath the Cretaceous strata in the southeastern part of SRS, but they have not been found in A/M area. Regional dip of the Coastal Plain strata is to the southeast.

**CDM FEDERAL PROGRAMS CORPORATION
LOCATION OF THE A/M AREA
WITHIN THE SAVANNAH RIVER SITE
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

FIGURE NO.

1

**CDM FEDERAL PROGRAMS CORPORATION
LOCATION OF WELLS USED IN STUDY**

**SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

FIGURE NO.

2

TABLE 1

WELL LOG DATA USED IN THIS STUDY
SAVANNAH RIVER SITE
Aiken, South Carolina

WELLS	CORES			GEOPHYSICAL LOGS	
	Elevations of Interval Cored ft	Thickness of Interval Cored ft	Core Spacing*	Elevations of Interval Logged ft	Thickness of Interval Logged ft
ABP-3B	335-102	233	Continuous		
ABP-3C				348-105	243
ABP-8C				366-150	216
AC-2A	343-139	204	2 of 5	337-143	194
AMB-4				376-219	157
AMB-5				376-137	239
AMB-6				373-137	236
AMB-7	368-229	139	Continuous	366-229	137
ASB-6AA	341-61	280	Continuous	347-62	285
ASB-7	351-212	139	2 of 5		
ASB-8A	347-39	308	Continuous	347-23	324
ASB-8TA	49-12	37	Continuous	347-17	330
ASB-9B	306-124	202	Continuous		
ASB-9C	155-103	52	Continuous	304-109	195
MCB-2	320-181	139	Continuous		
MCB-4	348-203	145	Continuous		
MCB-5C	338-115	223	Continuous	335-121	214
MCB-6A	315-97	218	Continuous	327-98	229
MCB-7C				332-145	187
MSB-9A	357-263	94	Continuous		
MSB-10A	353-104	249	Continuous		
MSB-11A	363-123	240	Continuous	357-123	234
MSB-12TA	346-(-313)	659	Continuous	338-(-309)	647
MSB-13A	343-99	244	Continuous	337-98	239
MSB-14A	346-143	203	2 of 5	340-147	193
MSB-15A	365-163	202	2 of 5	359-165	194
MSB-16A	365-163	202	2 of 5	359-167	192
MSB-17A	266-154	112	2 of 5	350-156	194
MSB-18A	248-141	107	2 of 5	332-138	194
MSB-19A	298-96	202	2 of 5	292-98	194
MSB-20A	262-150	112	2 of 5	346-152	194
MSB-21TA	352-16	336	Continuous	352-10	342
MSB-22	357-155	202	2 of 5		
MSB-23A	370-90	280	2 of 5	369-65	304
MSB-23TA	120-54	66	Continuous	369-49	320
MSB-24A	379-127	252	2 of 5		
MSB-25A	365-113	252	2 of 5		
MSB-26A	359-159	200	2 of 5		
MSB-26AA	158-29	129	Continuous		
MSB-27TA	374-171	203	2 of 5	372-60	312
MSB-28A	252-151	101	2 of 5		
MSB-29TA	363-47	316	Continuous	363-52	311
MSB-30A	253-27	226	Continuous	348-33	315
MSB-31A	246-12	234	Continuous		
MSB-32				247-40	207
MSB-33TA				251-7	244
MSB-34TA	381-(-279)	660	2 of 5	375-(-279)	654

TABLE 1
(continued)

WELLS	CORES			GEOPHYSICAL LOGS	
	Elevations of Interval Cored <i>ft</i>	Thickness of Interval Cored <i>ft</i>	Core Spacing*	Elevations of Interval Logged <i>ft</i>	Thickness of Interval Logged <i>ft</i>
MSB-35TA				348-34	214
MSB-36TA	338-38	300	Continuous	338-40	298
MSB-37A	380-262	118	Continuous		
MSB-37TA				374-(-4)	378
MSB-38TA				352-32	320
MSB-39TA				338-40	298
MSB-40TA	318-9	309	Continuous	316-23	293
MSB-41TA	321-18	303	Continuous	323-12	311
MSB-42TA	376-35	340	Continuous	371-25	346
MSB-43TA				355-41	314
MSB-44A				370-118	252
MSB-45A				374-120	254
MSB-46A				368-122	246
MSB-47TA	367-38	329	Continuous		
MSB-48C	349-156	193	Continuous		
MSB-48TA				356-74	282
MSB-49A	132-62	70	Continuous	329-65	264
MSB-49B	332-106	226	Continuous		
MSB-50B	221-127	94	Continuous		
MSB-51B	260-123	137	Continuous	258-121	137
MSB-52B	319-202	117	Continuous		
MSB-53B	191-73	118	Continuous	339-78	261
MSB-53C	342-172	170	Continuous		
MSB-54TA	371-67	304	Continuous	369-84	285
MSB-55C	256-158	98	Continuous	362-161	201
MSB-55TA				362-55	307
MSB-61C	316-141	175	Continuous	312-145	167
MSB-66TA	370-32	338	Continuous	375-76	299
MSB-67B	352-83	269	Continuous	359-87	272
MSB-68B				349-114	235
MSB-69TA	368-18	350	Continuous	374-22	352
MSB-70C				355-143	212
MSB-71B				337-104	233
MSB-72B				321-143	178
MSB-73B				337-100	237
MSB-82C	361-152	209	Continuous	367-97	270
MSB-83C	359-160	199	Continuous	366-164	202
MSB-84C	350-166	184	Continuous	354-168	186
MSB-85C	367-155	212	Continuous		
MSB-85TA				374-70	304
MSB 86C				351-141	210
RWM-4				360-126	234
RWM-5				361-103	258
RWM-6				347-138	209
RWM-7				345-141	204
RWM-8				346-100	246

NOTE: Elevations are relative to mean sea level.

*2 of 5 indicates 2 feet of every 5 feet were cored.

METHODS

Lithologic cores with diameters of approximately 2 to 4 inches were available for most wells. Geologists examined these megascopically and with a binocular microscope in the SRS geology laboratory. The cores were sampled at either 1- or 2-foot intervals and the following properties described:

- Percentages of pebbles and granules, sand, silt and clay, and carbonate
- Modal and maximum grain size
- Sorting
- Roundness
- Induration
- Color
- Percentages of muscovite, lignite, glauconite
- Occurrence of sulfides
- Occurrence of fossils
- Fluorescence under ultraviolet light (for heavy minerals)
- Sedimentary structures

The Wentworth-Udden scale was used for grain sizes. Sorting was estimated for sands according to this scale:

Well sorted	90% of sample within two sand sizes
Moderately sorted	90% of sample within three sand sizes
Poorly sorted	90% of sample within four sand sizes
Very poorly sorted	90% of samples within more than four sand sizes

Lithologic logs at a scale of 1 inch to 10 feet were prepared from the data and used in correlation and stratigraphic description.

Geophysical logs were available for most wells. Most logs record natural gamma radiation, spontaneous potential, and various resistivity curves.

Samples from most of the higher stratigraphic units were sieved. In the tables of sieve analysis data, the porosity and permeability estimates were derived from size frequency distributions according to an empirical method adapted from Beard and Weyl (1973).

STRATIGRAPHIC COLUMN

The identification and nomenclature of stratigraphic units in this study are influenced by both lithostratigraphic and biostratigraphic concepts. Recent regional studies of Atlantic Coastal Plain stratigraphy have emphasized mapping of unconformity-bounded units (e.g., Colquhoun et al., 1983), a practice followed in this report.

The Coastal Plain stratigraphic units identified in A/M area are:

- Miocene(?)
 - "Upland Unit"

- Late Eocene
 - Barnwell Group
 - Tobacco Road Sand*
 - Dry Branch Formation*

- Middle Eocene
 - Upper Orangeburg Group
 - Santee Formation*

- Early Eocene
 - Lower Orangeburg Group
 - Congaree Formation*
 - Upper Black Mingo Group
 - Fourmile Member of the Fishburne Formation*

- Early and Late Paleocene
 - Lower Black Mingo Group
 - Ellenton Formation*

- Late Cretaceous

- Lumbee Group

- Steel Creek Member of the Peedee Formation*

- Black Creek Formation*

- Middendorf Formation*

- Cape Fear Formation

Typical lithologic and geophysical characteristics of the stratigraphic units are shown in logs of well HPC-1, 6 miles southeast of A/M area (Figure 3), and well MSB-69TA in the northern part of A/M area (Figure 4). Correlation of these units with others in the Gulf and Atlantic coastal plains is shown in Figure 5, and is based mostly on the work of Carter (1983), Colquhoun et al. (1983), Gorday (1985), Hazel et al. (1977), Huddlestun and Hetrick (1985), and Prowell et al. (1985).

Stratigraphic concepts at SRS have changed greatly in the last few years as a result of an intensive stratigraphic research program. Several changes in stratigraphic nomenclature and assignment of formation boundaries have been made since the report by Fallaw and Sargent (1986) on A/M area. The major revisions are:

- Most formations are placed into groups.
- The Cape Fear Formation is added to the stratigraphic column as a result of additional deep wells at SRS.
- The upper part of the Middendorf of 1986 is placed in the Black Creek Formation because of regional correlation studies.
- The upper part of the Black Creek of 1986 is assigned to the Steel Creek Member of the Peedee Formation as a result of regional studies.
- The variegated clay below the lowest sand of the Ellenton Formation is assigned to the Steel Creek rather than the Ellenton because its contact with underlying sand appears more gradational than the upper contact.
- The lower part of the Congaree Formation of 1986 is now assigned to the Fourmile Member of the Fishburne Formation as a result of new paleontologic data.
- The term "McBean" is placed by "Santee" because the latter has priority.
- The top of the Dry Branch is picked several tens of feet higher than in the previous report as a result of regional correlation studies.

LEGEND

- MODERATELY AND WELL-SORTED SAND
- SILTY, CLAYEY SAND
- INTERBEDDED SAND, SILT AND CLAY
- CLAY AND SILT
- NR NO CORE RECOVERY

WELL LOCATED APPROXIMATELY 6 MILES
SOUTHEAST OF A/M AREA.

CDM FEDERAL PROGRAMS CORPORATION
LOG OF HPC-1 SHOWING PICKS OF STRATIGRAPHIC UNITS

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

3

LEGEND

- [White Box] MODERATELY AND WELL-SORTED SAND
- [White Box] SILTY, CLAYEY SAND
- [Hatched Box] INTERBEDDED SAND, SILT AND CLAY
- [Hatched Box] CLAY AND SILT
- [NR Box] NO CORE RECOVERY

CDM FEDERAL PROGRAMS CORPORATION
LOG OF MSB-69 SHOWING PICKS OF STRATIGRAPHIC UNITS
SAVANNAH RIVER SITE
 AIKEN, SOUTH CAROLINA

FIGURE NO.

4

TIME UNITS	SOUTHERN ALABAMA	EASTERN GEORGIA	SAVANNAH RIVER SITE	SOUTHEASTERN SOUTH CAROLINA	EASTERN NORTH CAROLINA	EASTERN VIRGINIA & MARYLAND
QUATERNARY			ALLUVIUM			
PLIOCENE						
MIOCENE	PENSACOLA CLAY	ALTAMAHA FM	"UPLAND UNIT"?	HAWTHORNE FM	PUNGO RIVER FM	CHOPTANK FM
OLIGOCENE						
Eocene	JACKSONIAN	YAZOO FM	TOBACCO ROAD SAND DRY BRANCH FM	COOPER FM		CHICKAHOMINY FM
		MOODYS BRANCH FM	* CLINCHFIELD FM	CROSS FM	SPRING GARDEN MBR OF CASTLE HAYNE LIMESTONE	
CLAIBORNIAN	LISBON FM	McBEAN MBR OF LISBON	SANTEE FM	SANTEE LIMESTONE	CASTLE HAYNE LIMESTONE	PINEY POINT FM
	TALLAHATTA FM		CONGAREE FM			NANJEMOY FM
SABINIAN	HATCHETIGBEE FM	HUBER FM	FOUR MILE MBR OF FISHBURN FM	FISHBURN FM	BEAUFORT GROUP	AQUA FM
	TUSCAHOMA FM		* SNAPP MBR OF WILLIAMSBURG FM	WILLIAMSBURG FM		
	NANAFALIA FM		ELLENTON FM	RHEMS FM		
MIDWAYAN	PORTERS CREEK CLAY					BRIGHTSEAT FM
	CLAYTON FM					
MAESTRICHTIAN	PRAIRIE BLUFF CHALK		STEEL CREEK MBR OF PEEDEE FM	PEEDEE FM	PEEDEE FM	SEVERN FM
	RIPLEY FM					
	DEMOPOLIS CHALK					
CAMPANIAN	MOOREVILLE FM	GAILLARD FM	BLACK CREEK FM	BLACK CREEK FM	BLACK CREEK FM	MATAWAN FM
SANTONIAN	EUTAW FM		MIDDENDORF FM ?	MIDDENDORF FM ?	MIDDENDORF FM ?	MAGOTHY FM
			CAPE FEAR FM ?	CAPE FEAR FM ?	CAPE FEAR FM ?	PATAPSCO FM
CONIACIAN TURONIAN CENOMANIAN	TUSCALOOSA GROUP					
TRIASSIC						
NEWARK SUPERGROUP						
PALEOZOIC						

* NOT PRESENT IN A/M AREA

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CORRELATION CHART

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

5

The stratigraphic columns for the 1986 Fallaw and Sargent study are compared to the recent interpretation in **Figure 6**.

FALLAW AND SARGENT, 1986

Upland Unit
Tobacco Road Sand
Dry Branch Formation
McBean Formation
Congaree Formation
Ellenton Formation
Black Creek Formation
Middendorf Formation

No Vertical Scale

THIS STUDY

Upland Unit	
Tobacco Road Sand	Barnwell Group
Dry Branch Formation	
Santee Formation	Orangeburg Group
Congaree Formation	
Fourmile Member of Fishburne Formation	Black Mingo Group
Ellenton Formation	
Steel Creek Member of Peedee Formation	Lumbee Group
Black Creek Formation	
Middendorf Formation	
Cape Fear Formation	

CDM FEDERAL PROGRAMS CORPORATION
**COMPARISON OF STRATIGRAPHIC COLUMN OF THIS STUDY
 WITH THAT OF FALLAW AND SARGENT (1986)**

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

6

STRATIGRAPHIC DESCRIPTIONS

In the discussions of stratigraphy and structure, compass directions are given with respect to SRS north, which is 36°22' west of true North, and elevations are in feet with respect to mean sea level. The tops of the units are tabulated in Table 2 and were picked from existing lithologic and geophysical logs. Because lateral and vertical facies changes are characteristic of the stratigraphic units, the lithologic descriptions below are generalizations.

BASEMENT

None of the wells in the data base were drilled through the Coastal Plain section. Nearby deep wells indicate that metamorphic Appalachian rocks lie at elevations of about 300 to 400 feet below sea level in A/M area.

CAPE FEAR FORMATION

The lowermost Coastal Plain unit has not been penetrated by wells in A/M area. Two deep wells about two miles southeast of the center of A/M area, PT-1 and P-30, provide some information. There, the Cape Fear is composed mostly of gray, medium to very coarse, pebbly, muddy quartz sands which are feldspathic in the lower part of the unit. The sands tend to fine upward, and sorting is poor to moderate. Clay beds up to 3 feet thick are interbedded with the sands, and the sediments are moderately to well indurated. The top of the Cape Fear is picked where cleaner, looser sands of the Middendorf overlie the muddy sands of the Cape Fear. The Cape Fear formation has a much lower resistivity on geophysical logs (Figure 3). The contact is probably unconformable. The top of the formation in these wells is at an elevation of approximately 350 feet below sea level (bsl) and the formation is about 40 feet thick. The Cape Fear is not known to crop out in the South Carolina Coastal Plain. It is probably an upper delta plain or estuarine deposit, and its high clay content indicates low permeability. Paleontologic data from downdip SRS wells indicate that the Cape Fear is Santonian (early Late Cretaceous). It has been traced updip into the vicinity of A/M area in wells PT-1 and P-30 by correlation with lithologic and geophysical logs.

TABLE 2

ELEVATIONS OF TOPS OF STRATIGRAPHIC UNITS RELATIVE TO MEAN SEA LEVEL
 (A dash indicates that the unit appears to be missing from the well.)
 SAVANNAH RIVER SITE
 Aiken, South Carolina

WELLS	STRATIGRAPHIC UNITS						
	Middendorf	Black Creek	Steel Creek	Ellenton	Fourmile Lower Sand	Fourmile Clayey Zone	Fourmile
ABP-3B				111	140	144	160
ABP-8C							160
AC-2A							160
ASB-6AA			60	94	130	137	162
ASB-7							
ASB-8A			71	102	133	135	169
ASB-9B					146	148	164
ASB-9C				120			
MCB-5C				120	*132	*143	154
MCB-6A				117	138	142	154
MCB-7C							157
MSB-9A				*151	*156	*157	*164
MSB-10A			116	147	158	163	163
MSB-11A			127	148	155	158	173
MSB-12TA	-249	-38	73	112	136	156	163
MSB-13A				127	143	171	171
MSB-14A					*148	*157	166
MSB-15AA				*143	*152	*164	*174
MSB-16A							174
MSB-17BB					*130	*145	*150
MSB-18A						148	148
MSB-19A				106	133	137	173
MSB-20A							157
MSB-21TA			64	114	123	133	136
MSB-23A			95	134	155	158	168
MSB-24A					145	149	172
MSB-25A						122	172
MSB-26A					*147	*148	157
MSP-26AA			91	133			
MSB-27TA			104	133	138	148	*158
MSB-29TA			113	136	162	165	192
MSB-30A			93	117	123	133	170
MSB-31A			114	140	146	152	182
MSB-32			92	118	141	145	164
MSB-33TA			82	104	117	147	158
MSB-34TA	-225	-1	103	142	162	168	173
MSB-35TA			117	140	152	154	162
MSB-36TA			97	143	152	158	174
MSB-37TA			104	130	152	154	160
MSB-38TA			114	142	145	149	163
MSB-39TA			102	140	149	153	172
MSB-40TA			100	142	149	150	159

TABLE 2
(continued)

WELLS	STRATIGRAPHIC UNITS						
	Middendorf	Black Creek	Steel Creek	Ellenton	Fourmile Lower Sand	Fourmile Clayey Zone	Fourmile
MSB-41TA			81	126	159	161	180
MSB-42TA			97	120	136	152	174
MSB-43TA			108	128	141	159	184
MSB-44A				134	141	156	170
MSB-45A				140	152	157	174
MSB-46A			120	145	147	150	176
MSB-47TA			91	134	135	147	194
MSB-48C					142	162	183
MSB-48TA			109	138			
MSB-49A			69	111	132	147	164
MSB-50							179
MSB-51B					147	151	179
MSB-52B							*172
MSB-53B			126	140	152	155	176
MSB-54TA			119	123	154	162	198
MSB-55C			122	145	153	169	205
MSB-61C					147	148	177
MSB-66TA			73	122	156	160	176
MSB-67B				133	142	160	190
MSB-68B				127	135	148	184
MSB-69TA			112	132	142	157	192
MSB-70C							150
MSB-71B					128	134	174
MSB-72B							147
MSB-73B				129	141	149	179
MSB-82C						160	195
MSB-83C						166	198
MSB-84C						179	210
MSB-85C					143	158	192
MSB-85TA			106	116			
MSB-86C				144	151	168	183
RWM-1							*173
RWM-2				*133	*152	*154	*164
RWM-3				*139	*145	*149	*168
RWM-4				*132	141	159	174
RWM-5			*120	143	167	172	178
RWM-6					150	154	182
RWM-7				145	148	157	171
RWM-8				117	142	158	165
RWM-9				*142	*155	*165	*176
RWM-10			*118	*147	*148	*157	*165
RWM-11				*143	*162	*168	*173
SRW-2A				82	109	128	160
SRW-9A				103	123	148	179
SRW-12A						136	158
SRW-13A				83	103	126	159
SRW-16A						132	172

TABLE 2
(continued)

WELLS						
	Congaree	Santee	Dry Branch	Tobacco Road	Upland	Surface
ABP-1A	*190	*221	*275	*330	*357	357
ABP-2A	*188	*218	*272	*315	*369	369
ABP-3E	193	221	275	320	351	351
ABP-4A	*187	*218	*274	*320	*362	362
ABP-6D		*218	*272	*315	*363	363
ABP-7D		*215	*270	*318	*362	362
ABP-8C	194	222	275	*315	-	368
AC-2A	183	214	298	305	343	343
ACB-1A			*292	*-	*357	357
ACB-2A			*280	*-	*347	357
ACB-3A		*212	*285	*-	*348	348
ACB-4A			*296	*-	*355	355
AMB-4		*233	312	361	378	378
AMB-5		*233	315	365	377	377
AMB-6		*233	318	365	375	375
AMB-7		*230	300	353	368	368
AOB-1		*220	*303	*-	*339	339
AOB-2		*218	*300	*-	*343	343
AOB-3			*301	*-	*351	351
ARP-1A		*216	*275	*312	*353	353
ARP-2	*193	*216	*275	*312	*335	335
ARP-3	*200	*222	*276	*316	*337	337
ARP-4	*196	*216	*275	*312	*344	344
ASB-1A		*215	*303	*323	*347	347
ASB-2A			*303	*320	*346	346
ASB-3A			*298	*315	*343	343
ASB-4			*302	*317	*334	334
ASB-5A			*306	*320	*343	343
ASB-6AA	182	215	304	320	348	350
ASB-7		216	308	325	351	351
ASB-8A	193	226	307	328	347	347
ASB-9B	191	226	271	292	306	306
ASB-9C						307
MCB-2	182	230	270	326	-	326
MCB-4		223	279	348	348	348
MCB-5C	194	226	280	318	338	338
MCB-6A	196	230	277	305	330	330
MCB-7C	193	229	279	313	335	335
MCB-8D		*225	*278	*338	*-	338
MCB-9D		*227	*280	*340	*-	340
MSB-1A			*292	*309	*351	351
MSB-2A		*223	*296	*310	*350	350
MSB-3A			*295	*315	*357	357
MSB-4A			*293	*310	*352	352

TABLE 2
(continued)

WELLS						
	Congaree	Santee	Dry Branch	Tobacco Road	Upland	Surface
MSB-5A			*297	*-	*342	342
MSB-6A			*294	*-	*341	341
MSB-7A		*225	*294	*-	*342	342
MSB-8A		*225	*288	*-	*342	342
MSB-9A	*194	*224	*298	318	357	357
MSB-10A	193	223	307	314	353	353
MSB-11A	198	223	307	333	363	363
MSB-12TA	194	217	294	300	346	346
MSB-13A	195	225	290	-	343	343
MSB-14A	193	220	291	308	346	346
MSB-15A	195	230	300	312	365	365
MSB-15AA						367
MSB-16A	195	227	300	332	365	365
MSB-17A	174	205	291	*-	356	356
MSB-17BB						357
MSB-18A	197	225	294	*-	338	338
MSB-19A	186	218	265	-	298	298
MSB-20A	180	211	292	*-	352	352
MSB-21TA	162	196	296	316	352	352
MSB-22	195	225	295	315	357	357
MSB-23A	188	216	305	342	371	371
MSB-24A	193	225	302	352	379	379
MSB-25A	212	245	318	-	365	365
MSB-26A	163	205	297	330	359	359
MSB-26AA						359
MSB-27TA	178	209	297	335	374	374
MSB-28A	170	206	*297	328	353	353
MSB-29TA	209	244	322	345	363	363
MSB-30A	188	219	305	332	353	353
MSB-31A	198	224	*309	*-	346	346
MSB-32	186	234	253	-	-	253
MSB-33TA	185	224	255	-	-	255
MSB-34TA	193	228	314	356	381	381
MSB-35TA	184	215	300	*-	350	350
MSB-36TA	195	228	303	323	338	338
MSB-37TA	190	224	305	334	380	380
MSB-38TA	193	225	304	*-	354	354
MSB-39TA	203	226	290	*308	339	339
MSB-40TA	189	229	306	318	-	318
MSB-41TA	204	234	293	-	321	321
MSB-42TA	202	230	293	348	374	374
MSB-43TA	200	246	323	338	355	355
MSB-44A	190	232	308	*-	374	374
MSB-45A	214	242	324	*350	379	379

TABLE 2
(continued)

WELLS						
	Congaree	Santee	Dry Branch	Tobacco Road	Upland	Surface
MSB-46A	206	237	308	*-	370	370
MSB-47TA	209	243	323	367	-	367
MSB-48C	199	223	333	*358	*360	360
MSB-48TA						360
MSB-49A	199	228	286	-	332	332
MSB-50	203	208	-	-	-	221
MSB-51B	196	227	260	-	-	260
MSB-52B	*198	225	271	319	-	319
MSB-53B						342
MSB-53C	208	234	311	342	-	342
MSB-54TA	216	228	325	355	371	371
MSB-55C	220	239	320	*343	366	366
MSB-61C	206	234	285	-	316	316
MSB-65D		*220	*311	*312	*347	347
MSB-66TA	197	231	320	355	380	380
MSB-67B	210	242	328	341	363	363
MSB-68B	202	237	324	*344	*354	354
MSB-69TA	214	232	321	335	379	379
MSB-70C	178	216	288	*-	*360	360
MSB-71B	202	230	290	*-	*343	343
MSB-72B	184	218	299	*326	*-	326
MSB-73B	205	235	279	*-	*338	338
MSB-82C	211	234	320	344	371	371
MSB-83C	219	233	309	345	370	370
MSB-84C	224	239	318	360	-	360
MSB-85C	215	234	336	351	378	378
MSB-85TA						378
MSB-86C	200	224	334	*351	*355	355
RWM-1	*198	*223	*307	*333	*363	363
RWM-2	*180	*213	*302	*338	*371	371
RWM-3	*192	*218	*298	*348	*376	376
RWM-4	195	227	307	*332	364	364
RWM-5	212	245	318	*-	365	365
RWM-6	198	224	309	*-	347	347
RWM-7	192	220	311	*306	347	347
RWM-8	197	221	300	*-	346	346
RWM-9	*214	*240	*324	*360	*378	378
RWM-10	*195	*224	*293	*310	*353	353
RWM-11	*193	*228	*313	*356	*381	381
SRW-2A	175	222	282	307	319	319
SRW-9A	195	211	-	-	251	251
SRW-12A	180	198	234	-	-	234
SRW-13A	172	205	265	276	296	296
SRW-16A	199	228	295	304	345	345

*Picked from structure-contour maps, not from logs; not as accurate, therefore, as other data.

LUMBEE GROUP

The Lumbee, which is approximately 400 feet thick in A/M area based on regional mapping, consists of fluvial and deltaic quartz sands, pebbly sands, and clays. The Middendorf, Black Creek and Peedee formations are quite similar lithologically. The tops were picked at the tops of three clays or clayey zones within the mostly sandy section. These clays tend to be variegated, the colors probably having developed from oxidation during periods of nondeposition.

Middendorf Formation

The two deepest wells in A/M area, MSB-12 and MSB-34, cored into but not through the Middendorf. The top of the formation is picked at the top of an interbedded clay and sand interval (Figure 3) which is overlain by massive tan sand. The interbedded clays have higher gamma ray counts on geophysical logs than the overlying massive sand. In MSB-12 the top is 249 feet bsl, and in MSB-34 it is 225 feet bsl, placing the top of the formation approximately 130 feet higher than in the type well HPC-1 (Figure 3) with respect to depth below ground level. The quartz sands of the Middendorf are medium to very coarse, very poorly to moderately sorted, and slightly to moderately indurated. Pebbly zones occur sporadically throughout. Clay beds are up to about 10 feet thick. The section contains tan, purple, and gray strata. Muscovite is common sporadically throughout, but not as abundant as in the overlying Black Creek Formation. The interbedded sand and clay zone penetrated in A/M should have low vertical permeability. Nearby deep wells indicate that a sandier, more permeable zone occurs below.

The irregular bedding and variation in sorting suggest a fluvial environment of deposition. The upper clays, which are oxidized in places, may lie immediately below an unconformity. The Middendorf is not well dated at SRS, but regional studies suggest a Santonian (early Late Cretaceous) age (Prowell et al., 1985). In wells PT-1 and P-30, located about two miles southeast of the center of A/M area, the Middendorf is about 100 feet thick with the top at a depth of about 590 feet below ground surface. It crops out northwest of SRS.

Black Creek Formation

Only MSB-12 and MSB-34 cored into the Black Creek Formation in A/M area. The upper

contact is picked at the top of a clay about 15 feet thick. The clay has a higher gamma ray count and lower resistivity on geophysical logs than the adjacent sands (**Figure 3**). The top is 38 feet bsl in MSB-12 and 1 foot bsl in MSB-34. Most of the unit consists of medium and coarse quartz sand. Sorting varies from very poorly to well sorted. Pebbly beds occur throughout. Clay clasts are common and clay laminae fairly common. The sands are generally micaceous, more so than in the Middendorf, and feldspar and pyrite are rare. The sands are slightly indurated and are mostly tan, but some beds are white, gray, and yellow. The Black Creek in A/M area appears to be composed of two thick, fining upward sequences. In MSB-12, the well with the better core recovery in the Black Creek, the lower sequence consists of a sand zone about 120 feet thick which is topped by a clay about 8 feet thick. The upper sequence has a lower sand zone about 65 feet thick, topped by a clay about 15 feet thick. In MSB-34, the clay in the lower sequence is about 35 feet thick. The clays at the top of the lower sequence are oxidized in places, indicating that deposition of the Black Creek may have been interrupted by a period of weathering. The oxidized upper clay probably also indicates an unconformity. The clays should have low permeability, but the sands probably are highly permeable.

The sediments of the formation have the characteristics of fluvial deposits, with the clays at the tops of the two sequences perhaps being formed in a lower delta plain environment. Black Creek sediments from downdip SRS wells have yielded Campanian (middle Late Cretaceous) and Maestrichtian (late Late Cretaceous) paleontologic ages at SRS; the unit has been traced into A/M area by correlation of lithologic and geophysical logs. The Black Creek is 211 feet thick in MSB-12 and 224 feet thick in MSB-34. It crops out northwest of SRS.

Steel Creek Member of the Peedee Formation

The top of the Steel Creek Member (**Figures 4 and 7**) is picked at the top of a massive clay below sands and clays which have been dated paleontologically as Paleocene in A/M area and above sands and clays which have been dated as Cretaceous downdip at SRS. Samples from the clay in well P-19, located about 8 miles downdip from A/M area, yielded Late Cretaceous dates. Correlation with lithologic and geophysical logs indicates that this is the same clay picked as being at the top of the Steel Creek in A/M area. The clay, which is variegated with gray, red, purple, yellow, and orange in places, and dark gray to light gray elsewhere, is thought to have been affected by weathering during a period of regression which occurred at the end of the Cretaceous. The darker clays tend to be pyritic and may have been stained by

LEGEND

- WELL CLUSTER
- 106 ELEVATION (msl)
- 100— STRUCTURE CONTOUR
(10 foot interval)

1000 0 1000 2000
SCALE IN FEET

CDM FEDERAL PROGRAMS CORPORATION
STRUCTURE-CONTOUR MAP OF
TOP OF STEEL CREEK MEMBER
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

7

the overlying dark sediments of the Ellenton Formation. Assignment of the clay above the highest Cretaceous sand to the Steel Creek is in accord with the sand-to-clay fining upward sequences that seem to be prevalent in the Lumbee Group. In downdip wells which had better core recovery in the Cretaceous section than those in A/M area, the contact between the clay and the underlying sand appears more gradational than the contact with the overlying sand. It is quite possible, however, that at least the upper part of the clay is part of the overlying Ellenton. In A/M area, the only age determinations from the clay by palynological laboratories are "early Paleocene", "Paleocene?", and "Eocene?".

Poorly to moderately sorted sands, 1 to 2 feet thick, occur in a few places in the lower part of the clay. The clay has a high gamma ray count and low resistivity relative to the overlying and underlying sands on geophysical logs. Because the youngest Cretaceous sediments differ lithologically from the type Peedee Formation in northeastern South Carolina, they are referred to in this report as the Steel Creek Member of that formation. Steel Creek is in the south-central part of SRS.

The quartz sands underlying the massive clay are mostly medium and coarse, and poorly to well sorted. Pebbly zones and clay balls are common. Feldspar is common in a few wells and sulfides are rare. The sands are quite micaceous, as much as 20% in places. Tan, brown, white, gray, yellow, and orange are the most common colors, but in some wells the sands immediately below the upper clay are dark gray and black. Sieve analysis results of sands are in Table 3, with estimated porosity and permeability.

Steel Creek Member sands have the characteristics of fluvial deposition. The massive clay may be a lower deltaic plain sediment. The lower sandy zone has high permeability. The upper clay should have an important influence on vertical groundwater movement. It is 55 feet thick in MSB-30 but thins to the northeast (Figure 8), where it may be missing (the wells with "0" thickness were logged by well-site geologists and not in the geology laboratory). The Steel Creek Member upper massive clay and lower sand is 111 feet thick in MSB-12 and 104 feet thick in MSB-34. It probably crops out northwest of SRS but is difficult to distinguish from the underlying Black Creek. A few Maestrichtian (late Late Cretaceous) paleontologic samples have been recovered from the Steel Creek in downdip SRS wells and the unit has been correlated into A/M area with lithologic and geophysical logs.

TABLE 3
SIZE DISTRIBUTION PARAMETERS WITH
ESTIMATES OF POROSITY AND PERMEABILITY OF
STEEL CREEK SAND
SAVANNAH RIVER SITE
Aiken, South Carolina

WELL	ELEVATION <i>ft</i>	3RD QUARTILE <i>mm</i>	2ND QUARTILE <i>mm</i>	1ST QUARTILE <i>mm</i>	CLAY & SILT %	TRASK SORTING	POROSITY %	PERMEABILITY <i>darcies</i>	PERMEABILITY <i>meters/sec</i>	PERMEABILITY <i>gal/day/sq ft</i>
MSB-49	57-52	1.30	0.84	0.50	6	1.61	34	160	1.6E-03	2912
MSB-69	80-75	1.18	0.66	0.35	9	1.84	32	80	7.7E-04	1456

CDM FEDERAL PROGRAMS CORPORATION
ISOPACH MAP OF CLAY AT TOP OF STEEL CREEK MEMBER

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

8

Black Mingo Group

The Black Mingo consists of early Paleocene, late Paleocene, and early Eocene quartz sands and clays. The Paleocene deposits, which are deltaic, are generally more poorly sorted, more clayey, and darker in color than the shallow marine Eocene sediments. The late Paleocene Williamsburg Formation, which is present in the central and southeastern parts of SRS, does not appear to be present in A/M area. The Black Mingo Group is approximately 30 to 100 feet thick in A/M area.

Ellenton Formation

The top of the Ellenton (**Figures 4 and 9**) is picked in most wells at the top of a fining upward sequence where relatively poorly sorted, micaceous sands topped by a clay are overlain by cleaner, lighter colored sands. On geophysical logs, a high gamma ray count relative to the overlying unit is typical of the Ellenton. The sharpness of the contact suggests that it is probably unconformable.

In places in A/M area, the Ellenton is dark gray to black, poorly sorted, fine to coarse, clayey, silty, quartz sand and dark, kaolinitic clay and clayey silt. Muscovite, feldspar, iron sulfide and lignite are common, and induration is slight to moderate. This facies is similar to the type Ellenton near the center of SRS (Siple, 1967). In other places, the sands and clays are tan, light gray, yellow, brown, purple, and orange, are better sorted, and tend to lack the sulfide and lignite found in the dark sediments, although the mica remains common in places. Both facies contain pebbly zones. More wells in A/M area are cored in the lighter facies than the darker. It is difficult to distinguish the lighter colored Ellenton sediments from those of the lower Steel Creek. **Figure 10** shows the distribution of the two facies. The formation has the lithologic and paleontologic characteristics of a deltaic deposit. The light facies may represent upper delta plain, channel-dominant environments, and the dark may represent lower delta plain, bay-dominant environments.

In general, the Ellenton consists of two fining upward, sand-to-clay sequences. Both Midwayan (early Paleocene) and early Sabinian (late Paleocene) dates have been obtained from dinoflagellate assemblages in the Ellenton in A/M area, as well as elsewhere at SRS. One early

LEGEND

- WELL CLUSTER
- 133 ELEVATION (msl)
- 120— STRUCTURE CONTOUR (10 foot interval)

CDM FEDERAL PROGRAMS CORPORATION STRUCTURE-CONTOUR MAP OF TOP OF ELLENTON FORMATION SAVANNAH RIVER SITE AIKEN, SOUTH CAROLINA

FIGURE NO.

9

CDM FEDERAL PROGRAMS CORPORATION
FACIES MAP OF ELLENTON FORMATION

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

10

early Paleocene dinoflagellate assemblage is (identifications and age assignment by the U.S. Geological Survey):

Well MSB 23A, elevation 125 feet

Cordosphaeridium fibrospinosum

Diphyes colligerum

Operculodinium centrocarpum

Palaeocystodinium golzowense

Palaeoperidinium pyrophorum

Peridiniacean cyst sp. A of Edwards (1980)

Spinidinium densispinatum

Spiniferites septatus

A late Paleocene assemblage is (identifications and age assignment by Waanders Palynology Consulting, Inc.):

Well MSB-66TA, elevation 119 feet

Microplankton

Alterbia acutula

A. dilwynensis

A. distincta

Ceratiopsis speciosa

Cordosphaeridium cantharellum

Eisenackia crassitabulata

Palaeocystodinium gabonense

Spinidinium echinoideum

Turbiosphaera filosa

Spores and pollen

Appendicisporites crenimurus

Cicatricosisporites dorogensis

Bombacacidites reticulatus

The two fining upward sequences may correspond to the two different ages, and may be separated by an unconformity; the Ellenton may be divided into two formations in the future.

Individual clay beds up to about 20 feet thick occur in the Ellenton. Clay and clayey silt beds make up approximately one-third of the unit except in the northeastern part of A/M area, where they are fewer and thinner. The clays and silts and the poorly sorted, muddy sands, in combination with the clay at the top of the Steel Creek, should influence groundwater movement. **Figure 11** shows the total thickness of beds with low permeability in the Ellenton. They thin in the same area as the clay at the top of the Steel Creek (**Figure 8**) and may be missing in the northeast (the well with "0" thickness was logged by the well-site geologist and not in the geology laboratory). The formation as a whole is from 4 to 50 feet thick in A/M wells (**Figure 12**). The Ellenton is exposed in stream valleys northwest of SRS.

Fourmile Member of the Fishburne Formation

The top of the Fourmile Member is picked on geophysical logs where the gamma ray count decreases slightly into the overlying Congaree Formation (**Figures 4 and 17**). This gamma ray change appears to correlate with a zone in well PBF-3, located about 9 miles downdip, which was dated paleontologically as late Sabinian (early Eocene), equivalent to the Fishburne Formation in southeastern South Carolina. Because the early Eocene deposits at SRS are lithologically different from the type Fishburne, they are referred to as the Fourmile Member of that formation. Fourmile Branch is in the southwestern part of SRS.

In some wells, a thin clay occurs at the top of the Fourmile, but the upper part of the Fourmile and the overlying Congaree are probably hydrologically connected in most places in A/M area. The contact is probably unconformable. The Fourmile and Congaree sands are very similar, the Fourmile being slightly more clayey and micaceous.

Fourmile sands are tan, orange, yellow, brown, and white, fine to coarse, moderately to well sorted, and loose. A few pebbly zones occur, especially at the base. A clayey zone of varying thickness, referred to as the "middle Congaree clay" by Fallaw and Sargent (1986), separates an upper sand from a lower sand. The two sands (**Figures 13 and 17**) are similar, both being loose and fairly well sorted, with the lower one having more clay laminae, slightly more mica, and being more poorly sorted. The lower sand is from 1 to 34 feet thick in A/M wells (**Figure 14**), and the upper is from 0 to 50 feet thick (**Figure 18**). The sands are probably

LEGEND

- WELL CLUSTER
- 26 THICKNESS
- 30 — ISOPACH CONTOUR
(10 foot interval)

1000 0 1000 2000
SCALE IN FEET

CDM FEDERAL PROGRAMS CORPORATION
ISOPACH MAP OF LOW PERMEABILITY BEDS
IN THE ELLENTON FORMATION
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

11

**CDM FEDERAL PROGRAMS CORPORATION
ISOPACH MAP OF ELLENTON FORMATION**

**SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

FIGURE NO.

12

LEGEND

- WELL CLUSTER
- 146 ELEVATION (msl)
- 120— STRUCTURE CONTOUR (10 foot interval)

1000 0 1000 2000
SCALE IN FEET

CDM FEDERAL PROGRAMS CORPORATION
STRUCTURE-CONTOUR MAP OF
TOP OF LOWER FOURMILE SAND
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

13

LEGEND

- WELL CLUSTER
- 33 THICKNESS
- 20 — ISOPACH CONTOUR
(10 foot interval)

1000 0 1000 2000
SCALE IN FEET

CDM FEDERAL PROGRAMS CORPORATION ISOPACH MAP OF LOWER FOURMILE SAND

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

14

LEGEND

- WELL CLUSTER
- 152 ELEVATION (msl)
- 150— STRUCTURE CONTOUR (10 foot interval)

1000 0 1000 2000
SCALE IN FEET

**CDM FEDERAL PROGRAMS CORPORATION
STRUCTURE-CONTOUR MAP OF
TOP OF FOURMILE CLAYEY ZONE
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

FIGURE NO.

15

**CDM FEDERAL PROGRAMS CORPORATION
ISOPACH MAP OF FOURMILE CLAYEY ZONE**

**SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

FIGURE NO.

16

CDM FEDERAL PROGRAMS CORPORATION

STRUCTURE-CONTOUR MAP OF TOP OF FOURMILE MEMBER

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

17

**CDM FEDERAL PROGRAMS CORPORATION
ISOPACH MAP OF UPPER FOURMILE SAND**

**SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

FIGURE NO.

18

highly permeable. Sieve analysis data of sands, with porosity and permeability estimates, are in **Tables 4 and 5**.

The clayey zone within the Fourmile Member of the Fishburne Formation (**Figure 15**) is a distinctive clay layer up to 12 feet thick in some wells, and a sequence of alternating sand and clay beds in others. A moderate gamma ray high and low resistivity are usually logged through this interval. The clayey zone appears to vary in stratigraphic position, sometimes appearing low in the Fourmile and sometimes at or near the top, suggesting the presence of several stratigraphically distinct clayey zones. The interval is gray, tan, yellow, green, orange, brown, and purple. In the northern part of A/M area, in wells MSB-55 and MSB-84, dark gray to black, fissile, well-indurated silty clays occur which are very similar to parts of the Ellenton but have been dated palynologically as early as early Eocene. One sample of this material yielded the following assemblage (identifications and age assignment by Waanders Palynology Consulting, Inc.):

Well MSB 55C, elevation 159 feet

Microplankton

Lanternosphaeridium lanosum

Turbiosphaera filosa

Wetzelilla articulata

Pollen and spores

Schizoporis parvus

Cicatricosisporites dorogensis

Casuarinidites pulcher

Liliacidites dividius

Momipites tenuipolus

M. triradiatus

Tricolpopollenites hians

Tricolporopollenites explanata

K. Truschii

TABLE 4
SIZE DISTRIBUTION PARAMETERS WITH
ESTIMATES OF POROSITY AND PERMEABILITY OF
LOWER FOURMILE SAND
SAVANNAH RIVER SITE
Aiken, South Carolina

WELL	ELEVATION <i>ft</i>	3RD QUARTILE <i>mm</i>	2ND QUARTILE <i>mm</i>	1ST QUARTILE <i>mm</i>	CLAY & SILT %	TRASK SORTING	POROSITY %	PERMEABILITY <i>darcies</i>	PERMEABILITY <i>meters/sec</i>	PERMEABILITY <i>gal/day/sq ft</i>
MSB-53	152-147	0.86	0.58	0.38	3	1.50	34	87	8.4E-04	1583
MSB-66	140	0.79	0.62	0.68	1	1.07	42	290	2.8E-03	5278

TABLE 5

SIZE DISTRIBUTION PARAMETERS WITH
ESTIMATES OF POROSITY AND PERMEABILITY OF
UPPER FOURMILE SAND
SAVANNAH RIVER SITE
Aiken, South Carolina

WELL	ELEVATION <i>ft</i>	3RD QUARTILE <i>mm</i>	2ND QUARTILE <i>mm</i>	1ST QUARTILE <i>mm</i>	CLAY & SILT %	TRASK SORTING	POROSITY %	PERMEABILITY <i>darcies</i>	PERMEABILITY <i>meters/sec</i>	PERMEABILITY <i>gall/day/sq ft</i>
MSB-48	180-175	0.67	0.54	0.38	2	1.33	37	100	9.7E-04	1820
MSB-55	189-184	0.26	0.20	0.14	2	1.37	36	13	1.3E-04	237
MSB-66	167	0.24	0.22	0.18	2	1.15	41	27	2.6E-04	491
MSB-82	177-172	0.20	0.17	0.15	1	1.18	40	17	1.6E-04	309
MSB-83	183-178	0.21	0.18	0.14	3	1.21	40	15	1.5E-04	273
MSB-84	195-190	0.23	0.18	0.15	2	1.23	40	16	1.6E-04	291
MSB-85	173-168	0.32	0.26	0.22	1	1.22	40	37	3.6E-04	673

Sieve analysis data (with estimates of porosity and permeability), of a sand within the clayey zone are in **Table 6**. The clayey zone is from 1 to 30 feet thick (**Figure 16**) and may affect groundwater movement.

The Fourmile sands probably formed in a shallow marine environment, with the clays accumulating in bays or lagoons. The unit crops out northwest of SRS, where it has been mapped as part of the Huber Formation (Nystrom and Willoughby, 1982).

ORANGEBURG GROUP

The Orangeburg Group consists of shallow marine, early and middle Eocene quartz sands, clays, and calcareous deposits. It is up to approximately 90 feet thick in A/M wells and less than 30 feet thick in lower elevations of stream valleys in the southeastern part of the area.

Congaree Formation

The top of the Congaree (**Figures 4 and 19**) is picked where clean, well-sorted sands are overlain by the more clayey and poorly sorted sediments of the Santee Formation. On geophysical logs, the Congaree has a lower gamma ray count and higher resistivity. The Congaree is a fine to coarse, moderately and well-sorted quartz sand. It is loose to slightly indurated and is yellow, tan, orange, and brown. In some wells, a tan clay layer about 2 feet thick occurs at or near the base. The formation, which has the characteristics of a shallow marine deposit, has high permeability. Sieve analysis data are in **Table 7**, with estimates of porosity and permeability. One sample from A/M area has been paleontologically correlated with the Tallahatta Formation, which is early Claibornian or early (and middle?) Eocene (identifications and age assignment by U.S. Geological Survey):

Well MSB-18, sample elevation 153 feet

Achilleodinium biformoides

Cordosphaeridium fibrospinosum

C. gracile

Diphyes colligerum

Pentadinium favatum

TABLE 6

SIZE DISTRIBUTION PARAMETERS WITH
ESTIMATES OF POROSITY AND PERMEABILITY OF
SAND WITHIN FOURMILE CLAYEY ZONE
SAVANNAH RIVER SITE
Aiken, South Carolina

WELL	ELEVATION <i>ft</i>	3RD QUARTILE <i>mm</i>	2ND QUARTILE <i>mm</i>	1ST QUARTILE <i>mm</i>	CLAY & SILT %	TRASK SORTING	POROSITY %	PERMEABILITY <i>darcies</i>	PERMEABILITY <i>meters/sec</i>	PERMEABILITY <i>gall/day/sq ft</i>
MSB-71	135-130	0.23	0.19	2.40	2	1.18	40	20	1.9E-04	364

LEGEND

- WELL CLUSTER
- 186 ELEVATION (msl)
- 200— STRUCTURE CONTOUR (10 foot interval)

1000 0 1000 2000
SCALE IN FEET

**CDM FEDERAL PROGRAMS CORPORATION
STRUCTURE-CONTOUR MAP OF
TOP OF CONGAREE FORMATION
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

FIGURE NO.

19

TABLE 7
SIZE DISTRIBUTION PARAMETERS WITH
ESTIMATES OF POROSITY AND PERMEABILITY OF
CONGAREE SAND
SAVANNAH RIVER SITE
Aiken, South Carolina

WELL	ELEVATION <i>ft</i>	3RD QUARTILE <i>mm</i>	2ND QUARTILE <i>mm</i>	1ST QUARTILE <i>mm</i>	CLAY & SILT %	TRASK SORTING	POROSITY %	PERMEABILITY <i>darcies</i>	PERMEABILITY <i>meters/sec</i>	PERMEABILITY <i>gal/day/sq ft</i>
MSB-38	168-163	0.23	0.16	0.11	6	1.43	36	8	7.2E-05	136
MSB-70	177-174	0.36	0.25	0.18	3	1.42	36	18	1.7E-04	328
MSB-72	156-151	0.20	0.18	0.15	2	1.16	41	18	1.7E-04	328

Tectatodinium pellitum

Wetzelicella lunaris

The Congaree is from 3 to 49 feet thick in A/M area wells (Figure 20). It probably crops out in stream valleys in the southeastern part of the area.

Santee Formation

The top of the Santee (Figures 4 and 21) is picked on geophysical logs where Santee sediments with lower resistivity are overlain by the more resistive Dry Branch sediments. In general, the gamma ray count is higher than in the adjacent stratigraphic units. On most lithologic logs, the contact, which is probably unconformable, can be picked where the better sorted Dry Branch sediments overlie the more argillaceous Santee deposits. This unit has been referred to in the past as the "McBean Formation" (Veatch and Stephenson, 1911; Siple, 1967; Fallaw and Sargent, 1986), but the term "Santee" has priority (Sloan, 1908). The sediments in A/M area are not similar to those of the type Santee in the central South Carolina Coastal Plain and should be assigned to member status. There are several other facies of this age present at SRS, however, and more work is needed before the terminology of the Santee deposits can be established.

The Santee in A/M area is mostly orange and yellow, fine to coarse, poorly to well-sorted quartz sand. Pebbles and clay clasts are common in places, and muscovite is fairly common. The sediments are loose to moderately indurated. There does not appear to be an extensive, continuous layer of green clay at the bottom nor an extensive tan clay at the top, as occurs in other places at SRS, but clay and silt layers up to 4 feet thick of gray, green, tan, and other colors occur sporadically at various stratigraphic horizons within the Santee. Clay laminae are common throughout the formation. In MSB-40, a 7-foot section of micritic, shelly limestone was encountered within a 28-foot section composed mostly of glauconitic, poorly sorted sand, with a thin clay at the top. This is the only carbonate known in the area. Sediments and fossils indicate that the formation formed in shallow marine and bay or lagoonal environments. Several Santee paleontological samples from A/M wells have yielded upper Claibornian (late

LEGEND

- WELL CLUSTER
- 38 THICKNESS
- 20 — ISOPACH CONTOUR
(10 foot interval)

CDM FEDERAL PROGRAMS CORPORATION **ISOPACH MAP OF CONGAREE FORMATION** **SAVANNAH RIVER SITE** **AIKEN, SOUTH CAROLINA**

FIGURE NO.

20

middle Eocene) ages. One dinoflagellate assemblage is (with identifications and age assignment by the U.S. Geological Survey):

Well MSB-19A, elevation 192 feet

Achilleodinium bifurmoides

Cordosphaeridium gracile

C. inodes

Heteraulacacysta porosum

Hystriehokolpoma salacia

Kisselovia coleothrypta

Muratodinium fimbriatum

Operculodinium centrocarpum

Pentadinium goniferum

Pentadinium laticinctum

Phthanoperidinium comatum

Polysphaeridium zoharyi

Spiniferites pseudofurcatus

Thalassiphora pelagica

Because of the clay and silt beds, the Santee as a whole has a relatively low vertical permeability, although some sands have high permeability. It thins in the northern part of A/M area and in stream valleys in the southeast where it probably crops out. Table 8 shows sieve analysis data for Santee sands, with estimates of porosity and permeability. Thickness of the formation is from 5 to 48 feet in A/M wells (Figure 22).

HARNWELL GROUP

The late Eocene Dry Branch and Tobacco Road formations consist mostly of shallow marine quartz sands containing sporadic clay layers. The basal late Eocene Clinchfield Formation, which occurs downdip at SRS, could not be identified in A/M area. Thickness of the group varies from 0 feet, in stream valleys in the southeastern part of the area, to about 130 feet.

Dry Branch Formation

The top of the Dry Branch (Figures 4 and 23) is picked on geophysical logs where a low

TABLE 8

SIZE DISTRIBUTION PARAMETERS WITH
ESTIMATES OF POROSITY AND PERMEABILITY OF
SANTÉE SAND
SAVANNAH RIVER SITE
Aiken, South Carolina

WELL	ELEVATION <i>ft</i>	3RD QUARTILE <i>mm</i>	2ND QUARTILE <i>mm</i>	1ST QUARTILE <i>mm</i>	CLAY & SILT %	TRASK SORTING	POROSITY %	PERMEABILITY <i>darcies</i>	PERMEABILITY <i>meters/sec</i>	PERMEABILITY <i>gal/day/sq ft</i>
MSB-47	237-232	0.34	0.20	0.13	10	1.60	34	9	8.7E-05	164
MSB-51	220-219	0.13	0.10	0.08	17	1.26	40	4	3.9E-05	73
MSB-51	206	0.56	0.31	0.14	14	2.04	30	15	1.5E-04	273
MSB-61	225-224	0.53	0.38	0.22	3	1.55	34	37	3.6E-04	673
MSB-61	220-218	0.16	0.13	0.12	4	1.15	41	10	9.7E-05	182
MSB-66	227	0.57	0.32	0.14	6	2.02	30	15	1.5E-04	273

LEGEND

- WELL CLUSTER
- 33 THICKNESS
- 30 — ISOPACH CONTOUR
(5 foot interval)

1000 0 1000 2000
SCALE IN FEET

**CDM FEDERAL PROGRAMS CORPORATION
ISOPACH MAP OF SANTEE FORMATION**

**SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

FIGURE NO.

22

gamma ray count in the cleaner Dry Branch sands sharply increases in the more argillaceous Tobacco Road sands. On most lithologic logs, the contact, which is probably conformable, is marked by an increase in silt and clay percentage. The Dry Branch is composed of orange, brown, tan, and yellow, fine to coarse, poorly to well-sorted quartz sand. Pebbly layers are common, and induration is slight to moderate. Clay laminae are common, and layers up to 8 feet thick of tan, green, yellow, and brown clay occur in places at various stratigraphic levels within the formation. The calcareous Griffins Landing Member of the Dry Branch, which occurs downdip at SRS, is not present in A/M area, nor, probably, is the Twiggs Clay Member (Huddleston and Hetrick, 1985), although the clays in the Dry Branch in A/M area have lithologic characteristics of the Twiggs. The lower part of the Barnwell in A/M area appears to be the Irwinton Sand Member of the Dry Branch Formation, but the lowermost part is possibly equivalent to the Clinchfield Formation.

The Dry Branch crops out in stream valleys, and the thickness is from 0 feet to 110 feet in A/M wells (**Figure 24**). It appears to have been deeply incised in the eastern part of the area preceding deposition of the "upland unit". The Dry Branch sands probably accumulated in a shallow marine environment, with the clays being deposited in bays or lagoons. The sands should have high permeability. **Table 9** gives the results of sieve analysis of some sands, with porosity and permeability estimates. Jacksonian (late Eocene) fossils have been found in the Dry Branch in downdip SRS wells, and the unit has been traced into A/M area by correlating with lithologic and geophysical logs.

Tobacco Road Sand

The top of Tobacco Road (**Figures 4 and 25**) is picked where comparatively well-sorted sands are overlain by more poorly sorted sands, pebbly sands, and clays of the "upland unit". It is difficult to pick the contact on geophysical logs. The Tobacco Road is orange, red, brown, yellow, tan, and purple. Fine to coarse sands, poorly to well sorted, compose almost the entire formation. Pebbly layers are common, especially near the base. Clay clasts are fairly common, and clay layers up to 4 feet thick were found in some wells. The Tobacco Road crops out in several places in A/M area. The thickness of the formation varies from 0 feet, where erosion before and after deposition of the overlying "upland unit" has removed it, up to about 80 feet (**Figure 26**). It is mapped as missing in much of the eastern part of the area, based on subsurface information; this could be investigated by field mapping. The formation's higher silt and clay content probably gives it a lower permeability than the Dry Branch. The

LEGEND

- WELL CLUSTER
- 47 THICKNESS
- 30 — ISOPACH CONTOUR
(10 foot interval)

CDM FEDERAL PROGRAMS CORPORATION **ISOPACH MAP OF DRY BRANCH FORMATION** **SAVANNAH RIVER SITE** **AIKEN, SOUTH CAROLINA**

FIGURE NO.

24

TABLE 9

SIZE DISTRIBUTION PARAMETERS WITH
ESTIMATES OF POROSITY AND PERMEABILITY OF
DRY BRANCH SAND
SAVANNAH RIVER SITE
Aiken, South Carolina

WELL	ELEVATION <i>ft</i>	3RD QUARTILE <i>mm</i>	2ND QUARTILE <i>mm</i>	1ST QUARTILE <i>mm</i>	CLAY & SILT %	TRASK SORTING	POROSITY %	PERMEABILITY <i>darcies</i>	PERMEABILITY <i>meters/sec</i>	PERMEABILITY <i>gall/day/sq ft</i>
MSB-49	233-230	1.55	0.31	0.18	4	2.89	27	4	3.9E-05	73
MSB-49	230-229	0.62	0.34	0.22	5	1.69	33	25	2.4E-04	455

**CDM FEDERAL PROGRAMS CORPORATION
STRUCTURE-CONTOUR MAP OF
TOP OF TOBACCO ROAD SAND
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

FIGURE NO.

25

Tobacco Road was probably deposited in a shallow marine environment and has been dated as late Jacksonian (late late Eocene) down dip from SRS in Georgia (Huddleston and Hetrick, 1985). It has been traced into the vicinity of A/M area by correlation of outcrops (Nystrom and Willoughby, 1982). Sieve analysis data for Tobacco Road sand are in **Table 10**.

"UPLAND UNIT"

Capping the higher areas in much of the southwestern Coastal Plain of South Carolina is a deposit of poorly sorted, clayey, silty, pebbly, and cobbly quartz sands, conglomerates, and clays with extreme lateral and vertical variation. The South Carolina Geological Survey has been mapping it as the informally named "upland unit" (Nystrom and Willoughby, 1982). It partially corresponds to sediments previously mapped at SRS as the Hawthorn Formation (Siple, 1967).

In A/M area (**Figure 27**), these sediments are mostly fine to very coarse, clayey, silty quartz sands. They are pebbly in places and contain layers of conglomerate, are very poorly to poorly sorted, and are moderately indurated. Weathered feldspar grains are abundant in places. Clay lenses interbedded with these sands are up to 50 feet thick. Colors common in the unit are yellow, orange, purple, red, brown, and tan. The occurrence of the "upland" is somewhat sporadic, and the thickness varies from 0 feet to approximately 60 feet (**Figure 28**). The distribution of the unit as mapped is based on subsurface data and could be investigated by field mapping. The sediments, which have low permeability, were probably deposited in high energy fluvial channels, point bars, floodplains, and abandoned channels. The "upland" has not been dated paleontologically, but it may correlate with the Miocene Altamaha Formation in Georgia (Nystrom et al., 1986).

TABLE 10

SIZE DISTRIBUTION PARAMETERS WITH
ESTIMATES OF POROSITY AND PERMEABILITY OF
TOBACCO ROAD SAND
SAVANNAH RIVER SITE
Aiken, South Carolina

WELL	ELEVATION <i>ft</i>	3RD QUARTILE <i>mm</i>	2ND QUARTILE <i>mm</i>	1ST QUARTILE <i>mm</i>	CLAY & SILT %	TRASK SORTING	POROSITY %	PERMEABILITY <i>darcies</i>	PERMEABILITY <i>meters/sec</i>	PERMEABILITY <i>gal/day/sq ft</i>
MSB-42	306-296	1.13	0.65	0.34	2	1.82	32	80	7.7E-04	1456

LEGEND

- WELL CLUSTER
- 298 ELEVATION (msl)
- [0] UNIT MISSING
- 200-- OUTCROP, TOPOGRAPHIC CONTOUR (10 foot interval)

CDM FEDERAL PROGRAMS CORPORATION
STRUCTURE-CONTOUR MAP OF TOP OF "UPLAND UNIT"

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

27

LEGEND

- WELL CLUSTER
- 33 THICKNESS
- 20 — ISOPACH CONTOUR
(10 foot interval)

1000 0 1000 2000
SCALE IN FEET

CDM FEDERAL PROGRAMS CORPORATION ISOPACH MAP OF "UPLAND UNIT"

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

FIGURE NO.

28

STRUCTURE

The cross-sections of A/M area (Figures 29 through 36) were drawn using the structure-contour maps as a guide between wells, because the maps provide three-dimensional control. The structure-contour maps and the cross-sections show northeasterly trending structures through A/M area. Although the trend may be at least partially determined by the distribution of wells, it may also reflect geologic structure. In general, a structural high and two flanking lows trend northeast from the southwest part of the area through its center. Structural relief tends to decrease upward. On most structure-contour maps, these structures appear to die out in the northern part of the area, where they are replaced by homoclinal dip to the south-southeast. The same trend appears on some of the isopach maps (Figure 8, for example), with thin areas on the isopach maps generally following the trends of the structural highs. This suggests that the structures were active during deposition of some of the stratigraphic units. Other isopach maps (Figure 20, for example) do not show this. The trend also appears somewhat vaguely on the Ellenton facies map (Figure 10) and on the topographic maps of the area. The axes of these trends do not exactly coincide, but the similarities merit further consideration.

These trends may be controlled by basement faulting. A basement fault trending northeast through A/M area can be mapped from seismic reflection surveys. Such a fault, if active during deposition of Coastal Plain sediments, could have influenced structural patterns and sedimentary thicknesses. The clay at the top of the Steel Creek Member could also be a controlling factor because of differential compaction. In general, the clay is thick in structurally low areas and thin in structurally high areas. Thick clay sections would have compacted more than areas with thin clay, resulting in a topographic low after deposition. During deposition of the overlying sedimentary unit, thicker sediments would tend to accumulate in low areas and again compact more. The pattern on the surface of the Cretaceous clay could thus be propagated up through the Tertiary section. These events would have been modified by other processes of sedimentation and erosion.

The Coastal Plain section may be cut by faulting. Figure 32 suggests possible faulting near well MSB-26. The linear zone of northward dip trending northeasterly between MSB-34 and

SITE 5
A

ELEVATION
(Ft. MSL) MSB
40

MSB
36

RWM MSB
31

MSB
46

UPLAND

DRY BRANCH

MSB
46

RWM
9
(Projected)

MSB
45

RWM
11
(Projected)

MSB
34

MSB
66

SITE N
A'

MSB
67

MSB
82

MSB
55

MSB
84

ELEVATION
(FT. MSL)

500

VERTI

LEGEND

1'E N
A'

1SB ELEVATION
84 (FL. MSL)

HORIZONTAL
SCALE IN FEET

VERTICAL EXAGGERATION - 25X

LEGEND

- MODERATELY AND WELL-SORTED SAND
- SILTY, CLAYEY SAND
- INTERBEDDED SAND, SILT AND CLAY
- CLAY AND SILT
- LIMESTONE

REMARKS	
CHKD	
DRWN	
DATE	
REV. NO.	

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	

RAMS CORPORATION

SILTY, CLAYEY SAND

INTERBEDDED SAND

CLAY AND SILT

LIMESTONE

SCREEN ZONE

CONFIGURATION BASED ON STRUCTURE

FOR WELLS MSB-45, -46, RWM-6,
PARTS OF MSB-31 AND -55, NO C
LITHOLOGY INFERRED FROM GEOPHYS
NEARBY WELLS.

280
260
240
220
200
180
160
140
120
100
80

SILTY, CLAYEY SAND

INTERBEDDED SAND, SILT AND CLAY

CLAY AND SILT

LIMESTONE

SCREEN ZONE

CONFIGURATION BASED ON STRUCTURE-CONTOUR MAPS

FOR WELLS MSB-45, -46, RWM-6, -9, -11 AND PARTS OF MSB-31 AND -55, NO CORE DATA AVAILABLE; LITHOLOGY INFERRED FROM GEOPHYSICAL LOGS AND NEARBY WELLS.

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FEDERAL PROGRAMS CORPORATION

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

CROSS-SECTION A-A'

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA
CROSS-SECTION A-A'

PROJECT NO.

SHEET NO.

30

SITE W
B

ELEVATION MSB
(Ft. MSL) 43

W

MSB
29

MSB
67

MSB
68

ASB
8

UPLAND

DO

DO

SITE E
B'

ASB
8

MSB
53

MSB
61

ELEVATION
(Ft., MSL)

HORIZONTAL
SCALE IN FEET

VERTICAL EXAGGERATION - 25X

LEGEND

MODERATELY AND WELL-SORTED SAND

SILTY, CLAYEY SAND

00 1000

25X

WELL-SORTED SAND

0

AMS CORPORATION	DESIGNED BY: _____	REV. NO.	DATE	DRWN	CHKD	REMARKS
	DRAWN BY: _____					
	CHECKED BY: _____					
	APPROVED BY: _____					
	DATE: _____

LEGEND

CONFIGURATION
FOR WELL
LITHOLOGICAL
NEARBY

LEGEND

MODERATELY AND WELL--SORTED SAND

SILTY, CLAYEY SAND

INTERBEDDED SAND, SILT AND CLAY

CLAY AND SILT

SCREEN ZONE

CONFIGURATION BASED ON STRUCTURE--CONTOUR MAPS.

FOR WELLS MSB-43 AND -68, NO CORE DATA AVAILABLE;
LITHOLOGY INFERRED FROM GEOPHYSICAL LOGS AND
NEARBY WELLS.

WELL-SORTED SAND

AND

AND, SILT AND CLAY

URE-CONTOUR MAPS.

CCRE DATA AVAILABLE;
SCAL LOGS AND

CDM
FEDERAL PROGRAMS CORPORATION

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA
CROSS-SECTION B-B'

CONFIGURATION BASED ON STRUCTURE-CONTOUR MAPS.

FOR WELLS MSB-43 AND -68, NO CORE DATA AVAILABLE;
LITHOLOGY INFERRED FROM GEOPHYSICAL LOGS AND
NEARBY WELLS.

RE-CONTOUR MAPS.

CORE DATA AVAILABLE;
SCAL LOGS AND

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA
CROSS-SECTION B-B'

PROJECT NO.

SHEET NO.

31

SITE NW
C

ELEVATION
(Ft. MSL)

MSB
30

MSB
28

MSB
28

MSB
26

RWM
2

MSB
23

RWM
9
(Projected)

MSB
45

MSB
44

SITE SE
C'

MSB
44

MSB
41 ELEVATION
(Ft. MSL)

HORIZONTAL
SCALE IN FEET

VERTICAL EXAGGERATION - 25X

LEGEND

MODERATELY AND WELL-SORTED SAND

SILTY, CLAYEY SAND

INTERBEDDED SAND SILT AND CLAY

AMS CORPORATION

DESIGNED BY: _____

DRAWN BY: _____

CHECKED BY: _____

APPROVED BY: _____

DATE: _____

REV. NO.	DATE	DRWN	CHKD	REMARKS

SILTY, CLAYEY SAND

INTERBEDDED SAND, SILT AND CLAY

CLAY AND SILT

SCREEN ZONE

CONFIGURATION BASED ON STRUCTURE-CONTOUR

FOR WELLS MSB-44, -45, RWM-2, -9 AND MSB-28 AND -30, NO CORE DATA AVAILABLE; LITHOLOGY INFERRED FROM GEOPHYSICAL LOGS NEARBY WELLS.

ILTY, CLAYEY SAND

INTERBEDDED SAND, SILT AND CLAY

CLAY AND SILT

SCREEN ZONE

SED ON STRUCTURE-CONTOUR MAPS.

14, -45, RWM-2, -9 AND PARTS OF
, NO CORE DATA AVAILABLE;
ID FROM GEOPHYSICAL LOGS AND

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA
CROSS-SECTION C-C'

CDM

FEDERAL PROGRAMS CORPORATIC

CONFIGURATION BASED ON STRUCTURE-CONTOUR MAPS.

FOR WELLS MSB-44, -45, RWM-2, -9 AND PARTS OF
MSB-28 AND -30, NO CORE DATA AVAILABLE;
LITHOLOGY INFERRED FROM GEOPHYSICAL LOGS AND
NEARBY WELLS.

SED ON STRUCTURE-CONTOUR MAPS.

4, -45, RWM-2, -9 AND PARTS OF
NO CORE DATA AVAILABLE;
D FROM GEOPHYSICAL LOGS AND

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

CROSS-SECTION C-C'

PROJECT NO.

SHEET NO.

32

SITE NW

D

ELEVATION MSB
(Ft. MSL) 71

MSB
20

MSB
12

RWM
8

MSB
13

MSB
39

Lost
Lake

TOBACCO ROAD

TOBACCO ROAD

MSB
36

MSB
33

SITE SE

D'

SB
13

MSB ELEVATION
51 (Ft. MSL)

Tims Branch

500 0 500 1000

HORIZONTAL
SCALE IN FEET

VERTICAL EXAGGERATION - 25X

LEGEND

MODERATELY AND WELL-SORTED SAND

SILTY, CLAYEY SAND

INTERBEDDED SAND, SILT AND CLAY

HORIZONTAL
SCALE IN FEET

VERTICAL EXAGGERATION - 25X

LEGEND

MODERATELY AND WELL-SORTED SAND

SILTY, CLAYEY SAND

INTERBEDDED SAND, SILT AND CLAY

CLAY AND SILT

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____
APPROVED BY: _____
DATE: _____

RAMS CORPORATION

CONFIGURATION BASED ON STRUCTURE-CONTOUR MAPS.

FOR WELLS MSB-33, -39, -71, RWM-8 AND PARTS OF MSB-20, NO CORE DATA AVAILABLE; LITHOLOGY INFERRED FROM GEOPHYSICAL LOGS AND NEARBY WELLS.

MODERATELY AND WELL-SORTED SAND

SILTY, CLAYEY SAND

INTERBEDDED SAND, SILT AND CLAY

CLAY AND SILT

SCREEN ZONE

CONFIGURATION BASED ON STRUCTURE--CONTOUR MAPS.

FOR WELLS MSB--33, -39, -71, RWM--8 AND PARTS OF
MSB--20, NO CORE DATA AVAILABLE; LITHOLOGY INFERRED
FROM GEOPHYSICAL LOGS AND NEARBY WELLS.

CDM
FEDERAL PROGRAMS CORPORATION

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA

CROSS-SECTION D-D'

CONFIGURATION BASED ON STRUCTURE-CONTOUR MAPS.
 FOR WELLS MSB-33, -39, -75, RM-8 AND PARTS OF
 MSB-20, NO CORE DATA AVAILABLE. LITHOLOGY INFERRED
 FROM GEOPHYSICAL LOGS AND NEARBY WELLS.

— 100

— 80

— 60

— 40

— 20

— 0

CONFIGURATION BASED ON STRUCTURE-CONTOUR MAPS.

FOR WELLS MSD-33, -39, -71, RWM-8 AND PARTS OF
MSB-20, NO CORE DATA AVAILABLE; LITHOLOGY INFERRED
FROM GEOPHYSICAL LOGS AND NEARBY WELLS.

SAVANNAH RIVER SITE

AIKEN, SOUTH CAROLINA

CROSS-SECTION D-D'

PROJECT NO.

SHEET NO.

33

SITE SW
E

ELEVATION
(Ft. MSL.)

RWM MSB
2 23

MSB
24

RWM MSB
11 34

MSB
37

A

SITE
E'

ASB
6

ASB
8

MSB
48

MS
86

UPLAND

TOBACCO ROAD

DRY BRANCH

A

SITE NE E'

ELEVATION
(Ft. MSL)

SB
48

MSB
86

500 0 500

HORIZONTAL
SCALE IN FEET

VERTICAL EXAGGERATION - 25X

LEGEND

	MODERATELY AND WELL-SORTED SAND
	SILTY, CLAYEY SAND
	INTERBEDDED SAND, SILT AND CLAY
	CLAY AND SILT
	LIMESTONE

REMARKS

CHKD

DRWN

DATE

REV.
NO.

DESIGNED BY: _____

DRAWN BY: _____

CHECKED BY: _____

APPROVED BY: _____

DATE: _____

AMS CORPORATION

CLAY AND SILT

LIMESTONE

SCREEN ZONE

CONFIGURATION BASED ON
STRUCTURE--CONTOUR MAPS.

FOR WELLS MSB--73, --86, RWM1
--2, --4, --11, AND PARTS OF
MSB--18 AND --37, NO CORE DATA
AVAILABLE; LITHOLOGY INFERRED
FROM GEOPHYSICAL LOGS AND
NEARBY WELLS.

60

CONFIGURATION BASED ON
STRUCTURE-CONTOUR MAPS.

FOR WELLS MSB-73, -86, RWM-1,
-2, -4, -11, AND PARTS OF
MSB-18 AND -37, NO CORE DATA
AVAILABLE; LITHOLOGY INFERRED
FROM GEOPHYSICAL LOGS AND
NEARBY WELLS.

CDM

FEDERAL PROGRAMS CORPORATI

SAVANNAH RIVER SITE

AIKEN, SOUTH CAROLINA

CROSS-SECTION E-E'

FROM GEOPHYSICAL LOGS AND
NEARBY WELLS.

60

40

20

0

FOR WELLS MSB-73, -86, RWM-1,
-2, -4, -11, AND PARTS OF
MSB-18 AND -37, NO CORE DATA
AVAILABLE; LITHOLOGY INFERRED
FROM GEOPHYSICAL LOGS AND
NEARBY WELLS.

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA
CROSS-SECTION E-E'

PROJECT NO.

SHEET NO.

34

SITE SW
F

ELEVATION
(ft. MSL.)

SRW
12

1-200000

MSB
20

MSB
21

MSB
26

MSB
27

RWM MSB
11 34

MSB
66

SITE NE

F'

ELEVATION
(ft. MSL)

MSB
47

MSB
48

REMARKS

CHKD

DRWN

DATE

REV.
NO.

DESIGNED BY:

CHECKED BY:

DESIGNED BY:

APPROVED BY:

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____
APPROVED BY: _____
DATE: _____

**CDM
FEDERAL PROGRAMS CORPORATION**

80 —

60 —

40 —

20 —

0 —

LEGEND

MODERATELY AND WELL-SORTED SAND

SILTY, CLAYEY SAND

INTERBEDDED SAND, SILT AND CLAY

CLAY AND SILT

SCREEN ZONE

500 0 500

HORIZONTAL
SCALE IN FEET

VERTICAL EXAGGERATION

CONFIGURATION BASED ON STRUCTURE

FOR WELLS MSB-11, RWM-11, SRW-11
MSB-20 AND -27, NO CORE DATA AVAILABLE
INFERR'D FROM GEOPHYSICAL LOGS, C-
LOGS AND NEARBY WELLS

500 1000

AL
FEET

ION - 25X

CTURE-CONTOUR MAPS.

SRW-12, AND PARTS OF
TA AVAILABLE; LITHOLOGY
OGS, DRILLER'S LITHOLOGIC

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA
CROSS-SECTION F-F'

PROJECT NO.

SHEET NO.

35

CDM FEDERAL PROGRAMS CORPORATION

PART OF CROSS-SECTION A-A' WITH FAULT INTERPRETATION

SAVANNAH RIVER SITE

AIKEN, SOUTH CAROLINA

FIGURE NO.

36

MSB-66 (Figures 7 and 30) also suggests possible faulting (Figure 36), but the dip as mapped is less than 5°, and the evidence for faulting is not compelling. Because of the numerous unconformities in the updip part of the Coastal Plain, irregular, non-planar surfaces of stratigraphic units would be expected to result from stream erosion and differential compaction.

WELL SCREENS

The stratigraphic units in which wells have been screened are listed in **Table 11**, and the same data are listed by unit in **Table 12**. **Tables 13 and 14** are similar ones for filter zones. The evaluations with respect to mean sea level were determined by measuring from ground surface. If ground surface elevation or height of top of casing above ground surface was not available, it was assumed that top of casing was approximately 2.5 feet above ground surface. If no data on filter zones were available, it was assumed that the top of the filter zone was 6 feet above the top of the screen, and the bottom was 4 feet below the bottom of the screen.

TABLE 11

STRATIGRAPHIC UNITS IN WHICH WELL SCREENS ARE PLACED
 (Screen Zones are Elevations in Feet With Respect to Mean Sea Level)
 SAVANNAH RIVER SITE
 Aiken, South Carolina

WELL	DATA SOURCE	SCREEN ZONE	STRATIGRAPHIC UNIT
ABP 1A	1	204-174	*CONGAREE, SANTEE
ABP 1DD	1	228-208	*SANTEE, DRY BRANCH
ABP 2A	1	208-178	*CONGAREE, SANTEE
ABP 2DD	1	222-202	*SANTEE, DRY BRANCH
ABP 3	2	236-206	SANTEE, DRY BRANCH
ABP 3C	1	165-160	CONGAREE
ABP 4A	1	212-182	*CONGAREE, SANTEE
ABP 4DD	1	223-203	*SANTEE, DRY BRANCH
ABP 6D	1	223-203	*SANTEE, DRY BRANCH
ABP 7D	1	226-206	*SANTEE, DRY BRANCH
ABP 8C	1	191-186	CONGAREE
ABP 8D	1	228-208	SANTEE, DRY BRANCH
AC 2A	1	146-141	UPPER FOURMILE
AC 2B	1	237-217	DRY BRANCH
ACB 1A	2	270-250	*DRY BRANCH
ACB 2A	2	253-233	*DRY BRANCH
ACB 3A	1	238-208	*SANTEE, DRY BRANCH
ACB 4A	2	259-239	*DRY BRANCH
AMB 4	3	242-221	SANTEE, DRY BRANCH
AMB 5	3	242-222	SANTEE, DRY BRANCH
AMB 6	3	243-223	SANTEE, DRY BRANCH
AMB 7	3	238-218	SANTEE, DRY BRANCH
AOB 1	3	248-218	*SANTEE, DRY BRANCH
AOB 2	3	250-220	*DRY BRANCH
AOB 3	3	244-224	*DRY BRANCH
ARP 1A	1	233-203	*SANTEE, DRY BRANCH
ARP 2	1	220-190	*CONGAREE, SANTEE, DRY BRANCH
ARP 3	1	217-187	*CONGAREE, SANTEE
ARP 4	1	225-195	*SANTEE, DRY BRANCH
ASB 1A	1	247-217	*DRY BRANCH
ASB 2A	1	246-216	*DRY BRANCH
ASB 3A	2	253-233	*DRY BRANCH
ASB 4	2	256-226	*DRY BRANCH
ASB 5A	1	248-218	*DRY BRANCH
ASB 6A	1	248-218	DRY BRANCH
ASB 6AA	1	83-78	ELLENTON
ASB 7	2	231-211	SANTEE, DRY BRANCH
ASB 8	2	227-207	SANTEE, DRY BRANCH
ASB 8A	1	83-78	ELLENTON
ASB 8B	1	128-123	LOWER FOURMILE
ASB 8C	1	188-183	CONGAREE
ASB 8TA	1	25-19	STEEL CREEK

TABLE 11
(continued)

WELL	DATA SOURCE	SCREEN ZONE	STRATIGRAPHIC UNIT
ASB 9	2	236-216	SANTEE, DRY BRANCH
ASB 9B	1	164-159	UPPER FOURMILE
ASB 9C	1	182-177	CONGAREE
MCB 2	2	204-184	SANTEE
MCB 4	2	226-206	SANTEE, DRY BRANCH
MCB 5	2	225-205	SANTEE
MCB 5C	1	161-156	CONGAREE
MCB 6	3	220-200	SANTEE
MCB 6C	1	170-165	CONGAREE
MCB 7C	1	160-155	UPPER FOURMILE, CONGAREE
MCB 8D	1	227-207	*SANTEE, DRY BRANCH
MCB 9D	1	228-208	*SANTEE, DRY BRANCH
MSB 1A	2	253-223	*DRY BRANCH
MSB 2A	2	252-222	*SANTEE, DRY BRANCH
MSB 3A	2	259-229	*DRY BRANCH
MSB 4A	2	254-224	*DRY BRANCH
MSB 5A	2	249-219	*DRY BRANCH
MSB 6A	2	243-213	*DRY BRANCH
MSB 7A	2	244-214	*SANTEE, DRY BRANCH
MSB 8A	2	244-214	*SANTEE, DRY BRANCH
MSB 9A	2	144-139	ELLENTON
MSB 9B	2	209-204	SANTEE
MSB 9C	2	241-221	SANTEE, DRY BRANCH
MSB 10A	1	123-118	ELLENTON
MSB 10B	1	155-150	LOWER FOURMILE
MSB 10C	1	210-205	SANTEE
MSB 10D	1	250-230	DRY BRANCH
MSB 11A	1	135-130	ELLENTON
MSB 11B	1	166-161	UPPER FOURMILE
MSB 11C	1	181-176	CONGAREE
MSB 11D	1	208-203	SANTEE
MSB 11E	1	251-231	DRY BRANCH
MSB 11F	1	243-223	DRY BRANCH
MSB 12A	1	121-116	LOWER FOURMILE
MSB 12B	1	161-156	UPPER FOURMILE
MSB 12C	1	183-178	CONGAREE
MSB 12D	1	244-224	DRY BRANCH
MSB 12TA	1	-104- (-114)	BLACK CREEK
MSB 12TB	1	14- (-6)	STEEL CREEK
MSB 13A	1	135-130	LOWER FOURMILE
MSB 13B	1	177-172	CONGAREE
MSB 13C	1	243-223	SANTEE, DRY BRANCH
MSB 14A	1	164-144	LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 14B	1	194-189	CONGAREE, SANTEE
MSB 14C	1	244-224	DRY BRANCH

TABLE 11
(continued)

WELL	DATA SOURCE	SCREEN ZONE	STRATIGRAPHIC UNIT
MSB 15A	1	167-162	*FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 15AA	1	147-142	ELLENTON, LOWER FOURMILE
MSB 15C	1	261-241	DRY BRANCH
MSB 15D	1	241-221	SANTEE, DRY BRANCH
MSB 16A	1	166-161	UPPER FOURMILE
MSB 16C	1	244-224	SANTEE, DRY BRANCH
MSB 17A	1	159-154	CONGAREE
MSB 17B	1	190-185	SANTEE
MSB 17BB	1	137-132	*FOURMILE CLAYEY ZONE
MSB 17C	1	253-233	DRY BRANCH
MSB 17D	1	233-213	DRY BRANCH
MSB 18A	1	162-157	CONGAREE
MSB 18B	1	197-192	CONGAREE
MSB 18C	1	227-207	SANTEE, DRY BRANCH
MSB 19A	1	120-115	LOWER FOURMILE
MSB 19B	1	148-143	UPPER FOURMILE
MSB 19C	1	218-198	SANTEE
MSB 20A	1	161-156	UPPER FOURMILE, CONGAREE
MSB 20C	1	232-212	DRY BRANCH
MSB 21A	1	158-153	CONGAREE
MSB 21B	1	147-142	CONGAREE
MSB 21C	1	232-212	DRY BRANCH
MSB 21TA	1	24-19	STEEL CREEK
MSB 22	1	242-222	SANTEE, DRY BRANCH
MSB 23	1	251-231	DRY BRANCH
MSB 23A	1	62-52	STEEL CREEK
MSB 23B	1	177-172	CONGAREE
MSB 23TA	1	65-60	STEEL CREEK
MSB 24	1	244-224	SANTEE, DRY BRANCH
MSB 24A	1	179-169	UPPER FOURMILE, CONGAREE
MSB 25	1	245-225	SANTEE
MSB 25A	1	170-160	UPPER FOURMILE
MSB 26	1	241-221	DRY BRANCH
MSB 26A	1	179-169	SANTEE
MSB 26B	1	137-132	ELLENTON, LOWER FOURMILE
MSB 27	1	244-224	DRY BRANCH
MSB 27A	1	202-192	SANTEE
MSB 27B	1	170-164	CONGAREE
MSB 27TA	1	56-50	STEEL CREEK
MSB 28	1	231-211	DRY BRANCH
MSB 28A	1	158-153	CONGAREE
MSB 29A	1	125-119	ELLENTON
MSB 29B	1	153-148	LOWER FOURMILE
MSB 29C	1	181-176	UPPER FOURMILE

TABLE 11
(continued)

WELL	DATA SOURCE	SCREEN ZONE	STRATIGRAPHIC UNIT
MSB 29D	1	229-209	SANTEE
MSB 29DD	1	250-230	SANTEE, DRY BRANCH
MSB 29TA	1	66-60	STEEL CREEK
MSB 30A	1	37-27	STEEL CREEK
MSB 30AA	1	98-92	STEEL CREEK, ELLENTON
MSB 30B	1	130-124	FOURMILE CLAYEY ZONE
MSB 30C	1	237-217	SANTEE, DRY BRANCH
MSB 30CC	1	165-160	UPPER FOURMILE
MSB 31A	1	22-12	STEEL CREEK
MSB 31B	1	157-152	UPPER FOURMILE
MSB 31C	1	236-216	SANTEE, DRY BRANCH
MSB 31CC	1	181-176	UPPER FOURMILE
MSB 32	1	218-198	SANTEE
MSB 33	1	229-209	SANTEE, DRY BRANCH
MSB 33A	1	90-84	ELLENTON
MSB 33B	1	128-122	FOURMILE CLAYEY ZONE
MSB 33C	1	173-167	CONGAREE
MSB 33TA	1	25-20	STEEL CREEK
MSB 34A	1	118-113	ELLENTON
MSB 34B	1	187-182	CONGAREE
MSB 34C	1	241-221	SANTEE, DRY BRANCH
MSB 34TA	1	-93- (-103)	BLACK CREEK
MSB 34TB	1	76-66	STEEL CREEK
MSB 35A	1	131-125	ELLENTON
MSB 35B	1	171-165	CONGAREE
MSB 35D	1	256-236	DRY BRANCH
MSB 35TA	1	40-35	STEEL CREEK
MSB 36A	1	102-96	STEEL CREEK, ELLENTON
MSB 36B	1	165-159	UPPER FOURMILE
MSB 36C	1	195-189	CONGAREE
MSB 36D	1	250-229	DRY BRANCH
MSB 36TA	1	55-50	STEEL CREEK
MSB 37A	1	74-69	STEEL CREEK
MSB 37B	1	144-138	LOWER FOURMILE
MSB 37C	1	182-176	CONGAREE
MSB 37D	1	246-226	DRY BRANCH
MSB 37TA	1	37-32	STEEL CREEK
MSB 38B	1	144-139	ELLENTON, LOWER FOURMILE
MSB 38C	1	166-161	UPPER FOURMILE, CONGAREE
MSB 38D	1	237-217	SANTEE, DRY BRANCH
MSB 38TA	1	31-26	STEEL CREEK
MSB 39A	1	113-107	ELLENTON
MSB 39B	1	151-145	LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 39C	1	201-195	CONGAREE
MSB 39D	1	240-220	SANTEE, DRY BRANCH
MSB 39TA	1	51-46	STEEL CREEK

TABLE 11
(continued)

WELL	DATA SOURCE	SCREEN ZONE	STRATIGRAPHIC UNIT
MSB 40A	1	118-112	ELLENTON
MSB 40B	1	156-150	UPPER FOURMILE
MSB 40C	1	193-187	CONGAREE, SANTEE
MSB 40D	1	237-216	SANTEE, DRY BRANCH
MSB 40TA	1	31-25	STEEL CREEK
MSB 41A	1	89-83	ELLENTON
MSB 41B	1	115-109	ELLENTON
MSB 41C	1	153-147	LOWER FOURMILE
MSB 41D	1	248-227	SANTEE, DRY BRANCH
MSB 41TA	1	28-23	STEEL CREEK
MSB 42A	1	131-125	LOWER FOURMILE
MSB 42B	1	168-162	UPPER FOURMILE
MSB 42C	1	206-200	CONGAREE, SANTEE
MSB 42D	1	249-228	SANTEE, DRY BRANCH
MSB 42TA	1	47-42	STEEL CREEK
MSB 43A	1	142-136	LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 43B	1	177-171	UPPER FOURMILE
MSB 43D	1	222-201	SANTEE
MSB 43DD	1	243-223	SANTEE
MSB 43TA	1	42-37	STEEL CREEK
MSB 44A	1	134-124	ELLENTON
MSB 44B	1	185-175	CONGAREE
MSB 44C	1	240-230	SANTEE, DRY BRANCH
MSB 45A	1	140-130	ELLENTON
MSB 45B	1	190-180	CONGAREE
MSB 45C	1	244-234	SANTEE, DRY BRANCH
MSB 46A	1	130-120	ELLENTON
MSB 46B	1	189-179	CONGAREE
MSB 46C	1	247-237	DRY BRANCH
MSB 47B	1	171-166	UPPER FOURMILE
MSB 47C	1	202-197	CONGAREE
MSB 47D	1	246-226	SANTEE, DRY BRANCH
MSB 47TA	1	55-50	STEEL CREEK
MSB 48C	1	180-175	UPPER FOURMILE
MSB 48D	1	243-222	SANTEE, DRY BRANCH
MSB 49A	1	77-73	ELLENTON
MSB 49B	1	116-111	LOWER FOURMILE
MSB 49D	1	236-216	SANTEE, DRY BRANCH
MSB 50B	1	155-150	UPPER FOURMILE
MSB 50D	1	211-191	CONGAREE, SANTEE
MSB 51B	1	160-155	UPPER FOURMILE
MSB 51D	1	219-199	SANTEE
MSB 51DD	1	236-216	SANTEE, DRY BRANCH
MSB 52B	1	171-166	*UPPER FOURMILE
MSB 52D	1	251-231	DRY BRANCH

TABLE 11
(continued)

WELL	DATA SOURCE	SCREEN ZONE	STRATIGRAPHIC UNIT
MSB 53B	1	152-147	LOWER FOURMILE
MSB 53C	1	193-189	CONGAREE
MSB 53D	1	245-224	SANTEE, DRY BRANCH
MSB 54B	1	136-131	LOWER FOURMILE
MSB 54C	1	176-171	UPPER FOURMILE
MSB 54D	1	244-223	SANTEE, DRY BRANCH
MSB 54TA	1	81-76	STEEL CREEK
MSB 55C	1	189-184	UPPER FOURMILE
MSB 55D	1	246-224	SANTEE, DRY BRANCH
MSB 61C	1	180-175	UPPER FOURMILE, CONGAREE
MSB 61D	1	235-216	SANTEE, DRY BRANCH
MSB 65D	1	244-225	*DRY BRANCH
MSB 66B	1	143-138	LOWER FOURMILE
MSB 66C	1	171-166	UPPER FOURMILE
MSB 66D	1	249-219	SANTEE, DRY BRANCH
MSB 66TA	1	35-30	STEEL CREEK
MSB 67B	1	135-130	ELLENTON, LOWER FOURMILE
MSB 67C	1	174-169	UPPER FOURMILE
MSB 67D	1	241-222	SANTEE
MSB 68B	1	132-127	LOWER FOURMILE
MSB 68C	1	171-166	UPPER FOURMILE
MSB 68D	1	239-220	SANTEE, DRY BRANCH
MSB 69B	1	144-139	LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 69C	1	175-170	UPPER FOURMILE
MSB 69D	1	240-221	SANTEE, DRY BRANCH
MSB 69TA	1	80-74	STEEL CREEK
MSB 70C	1	179-174	CONGAREE, SANTEE
MSB 71B	1	136-131	FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 72B	1	156-151	CONGAREE
MSB 73B	1	136-131	LOWER FOURMILE
MSB 82C	1	177-172	UPPER FOURMILE
MSB 83C	1	183-178	UPPER FOURMILE
MSB 84C	1	195-190	UPPER FOURMILE
MSB 85C	1	173-168	UPPER FOURMILE
MSB 86C	4	165-160	FOURMILE CLAYEY ZONE
RWM 1	1	233-173	*CONGAREE, SANTEE, DRY BRANCH
RWM 2	1	211-201	* SANTEE
		191-181	*SANTEE
		171-161	*UPPER FOURMILE, CONGAREE
		151-141	*LOWER FOURMILE
RWM 3	1	216-206	*SANTEE
		196-186	*SANTEE, CONGAREE
		176-166	*UPPER FOURMILE, CONGAREE
		156-146	*FOURMILE CLAYEY ZONE, UPPER FOURMILE

TABLE 11
(continued)

WELL	DATA SOURCE	SCREEN ZONE	STRATIGRAPHIC UNIT
RWM 4	1	212-202 192-182 171-161 140-130	SANTEE CONGAREE UPPER FOURMILE LOWER FOURMILE, ELLENTON
RWM 5	1	217-207 197-187 166-156 145-135	CONGAREE, SANTEE CONGAREE LOWER FOURMILE ELLENTON, LOWER FOURMILE
RWM 6	1	220-209 189-178 168-158 152-142	SANTEE UPPER FOURMILE, CONGAREE UPPER FOURMILE LOWER FOURMILE, FOURMILE CLAYEY ZONE
RWM 7	1	217-207 197-186 176-166 155-145	SANTEE CONGAREE, SANTEE UPPER FOURMILE, CONGAREE LOWER FOURMILE, FOURMILE CLAYEY ZONE
RWM 8	1	198-188 177-167 141-131 120-110	CONGAREE, SANTEE CONGAREE LOWER FOURMILE ELLENTON, LOWER FOURMILE
RWM 9	1	221-211 200-190 169-159 143-133	*CONGAREE, SANTEE *CONGAREE *FOURMILE CLAYEY ZONE, UPPER FOURMILE *ELLENTON, LOWER FOURMILE
RWM 10	1	216-206 195-185 159-149 138-128	*SANTEE *CONGAREE *FOURMILE CLAYEY ZONE, UPPER FOURMILE *ELLENTON
RWM 11	1	215-205 200-189 184-174 153-143	*SANTEE *CONGAREE, SANTEE *CONGAREE *LOWER FOURMILE
SRW 2	3	229-199	SANTEE, DRY BRANCH
SRW 2A	1	98-88	LOWER FOURMILE
SRW 2B	1	163-153	UPPER FOURMILE, CONGAREE
SRW 9	3	196-164	UPPER FOURMILE, CONGAREE, SANTEE
SRW 9A	1	124-114	LOWER FOURMILE, FOURMILE CLAYEY ZONE
SRW 9B	1	163-153	UPPER FOURMILE
SRW 12A	1	114-104	FOURMILE CLAYEY ZONE
SRW 12B	1	156-146	UPPER FOURMILE
SRW 12C	1	199-179	CONGAREE, SANTEE, DRY BRANCH
SRW 13A	1	104-94	LOWER FOURMILE, FOURMILE CLAYEY ZONE
SRW 13B	1	164-154	UPPER FOURMILE, CONGAREE
SRW 13C	1	226-196	CONGAREE, SANTEE

TABLE 11
(continued)

WELL	DATA SOURCE	SCREEN ZONE	STRATIGRAPHIC UNIT
SRW 16A	1	144-119	FOURMILE CLAYEY ZONE, UPPER FOURMILE UPPER FOURMILE SANTEE, DRY BRANCH
SRW 16B	1	170-160	
SRW 16C	1	235-205	

*Estimated from structure-contour maps rather than logs; not as accurate, therefore, as other data.

Data Source Key:

- 1 - Well construction diagrams
- 2 - Computer printout WELLDAT2
- 3 - HP inventory ESH-EMS-900037
- 4 - Personal communication, SRS personnel

TABLE 12

WELL SCREENS IN STRATIGRAPHIC UNITS
SAVANNAH RIVER SITE
Aiken, South Carolina

BLACK CREEK	STEEL CREEK	ELLENTON	LOWER FOURMILE	FOURMILE CLAYEY ZONE	UPPER FOURMILE	CONGAREE	SANTEE	DRY BRANCH
MSB-12TA MSB-34TB	ASB-8TA	ASB-6AA	ASB-8B	MSB-14A	AC-2A	ABP-1A	ABP-1A	ABP-1DE
	MSB-12TB	ASB-8A	MSB-10B	MSB-15A	ASB-9B	ABP-2A	ABP-1DD	ABP-2DD
	MSB-21TA	MSB-9A	MSB-12A	MSB-17BB	MCB-7C	ABP-3C	ABP-2A	ABP-3
	MSB-23A	MSB-10A	MSB-13A	MSB-30B	MSB-11B	ABP-4A	ABP-2DD	ABP-4DD
	MSB-23TA	MSB-11A	MSB-14A	MSB-33B	MSB-12B	ABP-8C	ABP-3	ABP-6D
	MSB-27TA	MSB-15AA	MSB-15AA	MSB-39B	MSB-14A	ARP-2	ABP-4A	ABP-7D
	MSB-29TA	MSB-26B	MSB-19A	MSB-43A	MSB-15A	ARP-3	ABP-4DD	ABP-8D
	MSB-30A	MSB-29A	MSB-26B	MSB-69B	MSB-16A	ASB-8C	ABP-6D	AC-2B
	MSB-30AA	MSB-30AA	MSB-29B	MSB-71B	MSB-19B	ASB-9C	ABP-7D	ACB-1A
	MSB-31A	MSB-33A	MSB-37B	MSB-86C	MSB-20A	MCB-5C	ABP-8D	ACB-2A
	MSB-33TA	MSB-34A	MSB-38B	RWM-3	MSB-24A	MCB-6C	ACB-3A	ACB-3A
	MSB-34TB	MSB-35A	MSB-39B	RWM-6	MSB-25A	MCB-7C	AMB-4	ACB-4A
	MSB-35TA	MSB-36A	MSB-41C	RWM-7	MSB-29C	MSB-11C	AMB-5	AMB-4
	MSB-36A	MSB-38B	MSB-42A	RWM-9	MSB-30CC	MSB-12C	AMB-6	AMB-5
	MSB-36TA	MSB-39A	MSB-43A	RWM-10	MSB-31B	MSB-13B	AMB-7	AMB-6
	MSB-37A	MSB-40A	MSB-49B	SRW-9A	MSB-31CC	MSB-14B	AOB-1	AMB-7
	MSB-37TA	MSB-41A	MSB-53B	SRW-12A	MSB-36B	MSB-17A	ARP-1A	AOB-1
	MSB-38TA	MSB-41B	MSB-54B	SRW-13A	MSB-38C	MSB-18A	ARP-2	AOB-2
	MSB-39TA	MSB-44A	MSB-66B	SRW-16A	MSB-40B	MSB-18B	ARP-3	AOB-3
	MSB-40TA	MSB-45A	MSB-67B		MSB-42B	MSB-20A	ARP-4	ARP-1A
	MSB-41TA	MSB-46A	MSB-68B		MSB-43B	MSB-21A	ASB-7	ARP-2
	MSB-42TA	MSB-49A	MSB-69B		MSB-47B	MSB-21B	ASB-8	ARP-4
	MSB-43TA	MSB-67B	MSB-73B		MSB-48C	MSB-23B	ASB-9	ASB-1A
	MSB-47TA	RWM-4	RWM-2		MSB-50B	MSB-24A	MCB-2	ASB-2A
	MSB-54TA	RWM-5	RWM-4		MSB-51B	MSB-27B	MCB-4	ASB-3A
	MSB-66TA	RWM-8	RWM-5		MSB-52B	MSB-28A	MCB-5	ASB-4
	MSB-69TA	RWM-9	RWM-6		MSB-54C	MSB-33C	MCB-6	ASB-5A
		RWM-10	RWM-7		MSB-55C	MSB-34B	MCB-8D	ASB-6A
			RWM-8		MSB-61C	MSB-35B	MCB-9D	ASB-7
			RWM-9		MSB-66C	MSB-36C	MSB-2A	ASB-8
			RWM-11		MSB-67C	MSB-37C	MSB-7A	ASB-9
			SRW-2A		MSB-68C	MSB-38C	MSB-8A	MCB-4
			SRW-9A		MSB-69C	MSB-39C	MSB-9B	MCB-8D
			SRW-13A		MSB-71B	MSB-40C	MSB-9C	MCB-9D

TABLE 12
(continued)

BLACK CREEK	STEEL CREEK	ELLENTON	LOWER FOURMILE	FOURMILE CLAYEY ZONE	UPPER FOURMILE	CONGAREE	SANTEE	DRY BRANCH
					MSB-82C MSB-83C MSB-84C MSB-85C RWM-2 RWM-3 RWM-4 RWM-6 RWM-7 RWM-9 RWM-10 SRW-2B SRW-9 SRW-9B SRW-12B SRW-13B SRW-16A SRW-16B	MSB-42C MSB-44B MSB-45B MSB-46B MSB-47C MSB-50D MSB-53C MSB-61C MSB-70C MSB-72B RWM-1 RWM-2 RWM-3 RWM-4 RWM-5 RWM-6 RWM-7 RWM-8 RWM-9 RWM-11 SRW-2B SRW-9 SRW-12C SRW-13B SRW-13C	MSB-10C MSB-11D MSB-13C MSB-14B MSB-15D MSB-16C MSB-17B MSB-18C MSB-19C MSB-22 MSB-24 MSB-25 MSB-26A MSB-27A MSB-29D MSB-29DD MSB-30C MSB-31C MSB-32 MSB-33 MSB-34C MSB-38D MSB-39D MSB-40C MSB-40D MSB-41D MSB-42C MSB-42D MSB-43D MSB-43DD MSB-44C MSB-45C MSB-47D MSB-48D MSB-49D	MSB-1A MSB-2A MSB-3A MSB-4A MSB-5A MSB-6A MSB-7A MSB-8A MSB-9C MSB-10D MSB-11E MSB-11F MSB-12D MSB-13C MSB-14C MSB-15C MSB-15D MSB-16C MSB-17C MSB-17D MSB-18C MSB-20C MSB-21C MSB-22 MSB-23 MSB-24 MSB-26 MSB-27 MSB-28 MSB-29DD MSB-30C MSB-31C MSB-33 MSB-34C MSB-35D

TABLE 12
(continued)

BLACK CREEK	STEEL CREEK	ELLENTON	LOWER FOURMILE	FOURMILE CLAYEY ZONE	UPPER FOURMILE	CONGAREE	SANTEE	DRY BRANCH
							MSB-50D MSB-51D MSB-51DD MSB-53D MSB-54D MSB-55D MSB-61D MSB-66D MSB-67D MSB-68D MSB-69D MSB-70C RWM-1 RWM-2 RWM-3 RWM-4 RWM-5 RWM-6 RWM-7 RWM-8 RWM-9 RWM-10 RWM-11 SRW-2 SRW-9 SRW-12C SRW-13C SRW-16C	MSB-36D MSB-37D MSB-38D MSB-39D MSB-40D MSB-41D MSB-42D MSB-44C MSB-45C MSB-46C MSB-47D MSB-48D MSB-49D MSB-51DD MSB-52D MSB-53D MSB-54D MSB-55D MSB-61D MSB-65D MSB-66D MSB-68D MSB-69D RWM-1 SRW-2 SRW-12C SRW-16C

TABLE 13
STRATIGRAPHIC UNITS IN WHICH FILTER ZONES ARE PLACED
(Filter Zones are Elevations in Feet With Repsect to Mean Sea Level)
SAVANNAH RIVER SITE
Aiken, South Carolina

WELL	DATA SOURCE	FILTER ZONE	STRATIGRAPHIC UNIT
ABP 1A	1	238-203	*SANTEE, DRY BRANCH
ABP 1DD	1	238-178	*SANTEE, DRY BRANCH
ABP 2A	1	234-178	*CONGAREE, SANTEE, DRY BRANCH
ABP 2DD	1	230-198	*SANTEE, DRY BRANCH
ABP 3	2	242-202	*SANTEE, DRY BRANCH
ABP 3C	1	172-144	*UPPER FOURMILE, CONGAREE
ABP 4A	1	227-177	*CONGAREE, SANTEE, DRY BRANCH
ABP 4DD	1	231-199	*SANTEE, DRY BRANCH
ABP 6D	1	231-198	*SANTEE, DRY BRANCH
ABP 7D	1	234-202	*SANTEE, DRY BRANCH
ABP 8C	1	197-150	*UPPER FOURMILE, CONGAREE, SANTEE
ABP 8D	1	229-198	*SANTEE, DRY BRANCH
AC 2A	1	163-138	UPPER FOURMILE, CONGAREE
AC 2B	1	255-213	SANTEE, DRY BRANCH
ACB 1A	2	276-246	*DRY BRANCH
ACB 2A	2	259-229	*DRY BRANCH
ACB 3A	1	248-208	*SANTEE, DRY BRANCH
ACB 4A	2	265-235	*DRY BRANCH
AMB 4	2	270-213	*SANTEE, DRY BRANCH
AMB 5	2	256-212	*SANTEE, DRY BRANCH
AMB 6	2	249-212	*SANTEE, DRY BRANCH
AMB 7	2	250-212	*SANTEE, DRY BRANCH
AOB 1	2	254-214	*SANTEE, DRY BRANCH
AOB 2	2	256-216	*SANTEE, DRY BRANCH
AOB 3	2	250-220	*DRY BRANCH
ARP 1A	1	243-203	*SANTEE, DRY BRANCH
ARP 2	1	235-190	*CONGAREE, SANTEE, DRY BRANCH
ARP 3	1	225-187	*CONGAREE, SANTEE, DRY BRANCH
ARP 4	1	234-188	*CONGAREE, SANTEE, DRY BRANCH
ASB 1A	1	249-217	*DRY BRANCH
ASB 2A	1	256-216	*DRY BRANCH
ASB 3A	2	259-229	*DRY BRANCH
ASB 4	2	262-222	*DRY BRANCH
ASB 5A	1	257-218	*DRY BRANCH
ASB 6A	1	263-218	DRY BRANCH
ASB 6AA	1	89-70	ELLENTON
ASB 7	2	240-207	*SANTEE, DRY BRANCH
ASB 8	2	236-203	SANTEE, DRY BRANCH
ASB 8A	1	92-70	STEEL CREEK, ELLENTON
ASB 8B	1	137-113	LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE
ASB 8C	1	197-173	CONGAREE, SANTEE
ASB 8TA	1	34-8	STEEL CREEK

TABLE 13
(continued)

WELL	DATA SOURCE	FILTER ZONE	STRATIGRAPHIC UNIT
ASB 9	2	245-212	SANTEE, DRY BRANCH
ASB 9B	1	170-149	UPPER FOURMILE, CONGAREE
ASB 9C	1	193-157	UPPER FOURMILE, CONGAREE, SANTEE
MCB 2	2	213-181	CONGAREE, SANTEE
MCB 4	2	235-203	SANTEE, DRY BRANCH
MCB 5	2	234-202	SANTEE, DRY BRANCH
MCB 5C	1	170-153	UPPER FOURMILE, CONGAREE
MCB 6	2	229-197	SANTEE
MCB 6C	1	179-162	CONGAREE
MCB 7C	1	169-152	UPPER FOURMILE, CONGAREE
MCB 8D	1	236-204	*SANTEE, DRY BRANCH
MCB 9D	1	237-205	*SANTEE, DRY BRANCH
MSB 1A	2	261-223	*DRY BRANCH
MSB 2A	2	260-222	*SANTEE, DRY BRANCH
MSB 3A	2	267-229	*DRY BRANCH
MSB 4A	2	267-224	*DRY BRANCH
MSB 5A	2	257-219	*DRY BRANCH
MSB 6A	2	268-213	*DRY BRANCH
MSB 7A	2	255-214	*SANTEE, DRY BRANCH
MSB 8A	2	257-214	*SANTEE, DRY BRANCH
MSB 9A	2	150-135	*ELLENTON
MSB 9B	2	215-200	*SANTEE
MSB 9C	2	250-221	*SANTEE, DRY BRANCH
MSB 10A	1	127-105	STEEL CREEK, ELLENTON
MSB 10B	1	165-138	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 10C	1	220-202	SANTEE
MSB 10D	1	256-229	DRY BRANCH
MSB 11A	1	150-130	ELLENTON, LOWER FOURMILE
MSB 11B	1	177-160	UPPER FOURMILE, CONGAREE
MSB 11C	1	188-176	CONGAREE
MSB 11D	1	215-201	SANTEE
MSB 11E	1	260-230	DRY BRANCH
MSB 11F	1	246-222	SANTEE, DRY BRANCH
MSB 12A	1	134-116	LOWER FOURMILE
MSB 12B	1	170-155	FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE
MSB 12C	1	190-178	CONGAREE
MSB 12D	1	258-221	DRY BRANCH
MSB 12TA	1	-94-(-118)	BLACK CREEK
MSB 12TB	1	24-(-11)	STEEL CREEK
MSB 13A	1	144-127	LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 13B	1	182-172	CONGAREE
MSB 13C	1	249-219	SANTEE, DRY BRANCH
MSB 14A	1	171-144	LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE
MSB 14B	1	199-189	CONGAREE, SANTEE
MSB 14C	1	271-222	DRY BRANCH

TABLE 13
(continued)

WELL	DATA SOURCE	FILTER ZONE	STRATIGRAPHIC UNIT
MSB 15A	1	173-160	FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 15AA	1	154-137	*ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 15C	1	267-240	DRY BRANCH
MSB 15D	1	249-215	SANTEE, DRY BRANCH
MSB 16A	1	171-160	UPPER FOURMILE
MSB 16C	1	252-224	SANTEE, DRY BRANCH
MSB 17A	1	166-154	CONGAREE
MSB 17B	1	201-184	SANTEE
MSB 17BB	1	145-124	*LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 17C	1	272-231	DRY BRANCH
MSB 17D	1	238-206	DRY BRANCH
MSB 18A	1	167-150	CONGAREE
MSB 18B	1	202-191	CONGAREE, SANTEE
MSB 18C	1	239-206	SANTEE, DRY BRANCH
MSB 19A	1	126-113	LOWER FOURMILE
MSB 19B	1	154-142	UPPER FOURMILE
MSB 19C	1	226-197	SANTEE, DRY BRANCH
MSB 20A	1	170-150	UPPER FOURMILE, CONGAREE
MSB 20C	1	238-211	SANTEE, DRY BRANCH
MSB 21A	1	165-149	CONGAREE, SANTEE
MSB 21B	1	154-133	UPPER FOURMILE, CONGAREE
MSB 21C	1	239-212	DRY BRANCH
MSB 21TA	1	34-9	STEEL CREEK
MSB 22	1	245-221	SANTEE, DRY BRANCH
MSB 23	1	258-231	DRY BRANCH
MSB 23A	1	74-50	STEEL CREEK
MSB 23B	1	184-168	CONGAREE
MSB 23TA	1	73-44	STEEL CREEK
MSB 24	1	251-220	SANTEE, DRY BRANCH
MSB 24A	1	186-165	UPPER FOURMILE, CONGAREE
MSB 25	1	254-221	SANTEE, DRY BRANCH
MSB 25A	1	177-158	UPPER FOURMILE, CONGAREE
MSB 26	1	250-217	DRY BRANCH
MSB 26A	1	186-165	SANTEE
MSB 26B	1	144-131	ELLENTON, LOWER FOURMILE
MSB 27	1	250-220	DRY BRANCH
MSB 27A	1	210-190	SANTEE, DRY BRANCH
MSB 27B	1	183-156	UPPER FOURMILE, CONGAREE, SANTEE
MSB 27TA	1	64-43	STEEL CREEK
MSB 28	1	237-207	DRY BRANCH
MSB 28A	1	166-149	*CONGAREE
MSB 29A	1	136-114	ELLENTON
MSB 29B	1	160-141	LOWER FOURMILE
MSB 29C	1	191-166	UPPER FOURMILE

TABLE 13
(continued)

WELL	DATA SOURCE	FILTER ZONE	STRATIGRAPHIC UNIT
MSB 29D	1	238-199	CONGAREE, SANTEE
MSB 29DD	1	259-222	SANTEE, DRY BRANCH
MSB 29TA	1	75-50	STEEL CREEK
MSB 30A	1	49-23	STEEL CREEK
MSB 30AA	1	108-86	STEEL CREEK, ELLENTON
MSB 30B	1	141-116	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 30C	1	247-216	SANTEE, DRY BRANCH
MSB 30CC	1	175-144	UPPER FOURMILE, CONGAREE
MSB 31A	1	44-8	STEEL CREEK
MSB 31B	1	166-148	FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 31C	1	243-212	SANTEE, DRY BRANCH
MSB 31CC	1	189-166	UPPER FOURMILE, CONGAREE
MSB 32	1	227-196	SANTEE
MSB 33	1	236-205	SANTEE, DRY BRANCH
MSB 33A	1	98-75	STEEL CREEK, ELLENTON
MSB 33B	1	137-117	FOURMILE CLAYEY ZONE
MSB 33C	1	182-158	CONGAREE
MSB 33TA	1	36-5	STEEL CREEK
MSB 34A	1	124-109	ELLENTON
MSB 34B	1	192-177	CONGAREE
MSB 34C	1	247-216	SANTEE, DRY BRANCH
MSB 34TA	1	-81-(-107)	BLACK CREEK
MSB 34TB	1	82-62	STEEL CREEK
MSB 35A	1	141-116	STEEL CREEK, ELLENTON, LOWER FOURMILE
MSB 35B	1	185-156	UPPER FOURMILE, CONGAREE, SANTEE
MSB 35D	1	263-226	DRY BRANCH
MSB 35TA	1	52-25	STEEL CREEK
MSB 36A	1	112-90	STEEL CREEK, ELLENTON
MSB 36B	1	175-150	LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE
MSB 36C	1	203-181	CONGAREE, SANTEE
MSB 36D	1	260-222	SANTEE, DRY BRANCH
MSB 36TA	1	68-40	STEEL CREEK
MSB 37A	1	82-60	STEEL CREEK
MSB 37B	1	154-129	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 37C	1	190-166	CONGAREE
MSB 37D	1	260-216	SANTEE, DRY BRANCH
MSB 37TA	1	52-22	STEEL CREEK
MSB 38B	1	147-134	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 38C	1	180-151	UPPER FOURMILE, CONGAREE
MSB 38D	1	243-209	SANTEE, DRY BRANCH
MSB 38TA	1	50-11	STEEL CREEK

TABLE 13
(continued)

WELL	DATA SOURCE	FILTER ZONE	STRATIGRAPHIC UNIT
MSB 39A	1	124-99	STEEL CREEK, ELLENTON
MSB 39B	1	160-136	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 39C	1	210-186	CONGAREE, SANTEE
MSB 39D	1	250-212	SANTEE, DRY BRANCH
MSB 39TA	1	62-36	STEEL CREEK
MSB 40A	1	130-103	ELLENTON
MSB 40B	1	165-141	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE
MSB 40C	1	203-178	CONGAREE, SANTEE
MSB 40D	1	247-210	SANTEE, DRY BRANCH
MSB 40TA	1	42-15	STEEL CREEK
MSB 41A	1	103-76	STEEL CREEK, ELLENTON
MSB 41B	1	124-105	ELLENTON
MSB 41C	1	163-138	LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 41D	1	255-218	SANTEE, DRY BRANCH
MSB 41TA	1	44-13	STEEL CREEK
MSB 42A	1	139-116	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 42B	1	180-153	UPPER FOURMILE, CONGAREE
MSB 42C	1	216-194	CONGAREE, SANTEE
MSB 42D	1	258-219	SANTEE, DRY BRANCH
MSB 42TA	1	64-31	STEEL CREEK
MSB 43A	1	151-127	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 43B	1	186-163	UPPER FOURMILE, CONGAREE
MSB 43D	1	232-192	CONGAREE, SANTEE
MSB 43DD	1	249-220	SANTEE, DRY BRANCH
MSB 43TA	1	57-29	STEEL CREEK
MSB 44A	1	143-117	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 44B	1	195-170	CONGAREE, SANTEE
MSB 44C	1	253-219	SANTEE, DRY BRANCH
MSB 45A	1	145-125	ELLENTON, LOWER FOURMILE
MSB 45B	1	201-175	CONGAREE
MSB 45C	1	254-223	SANTEE, DRY BRANCH
MSB 46A	1	138-115	STEEL CREEK, ELLENTON
MSB 46B	1	203-176	CONGAREE
MSB 46C	1	264-221	SANTEE, DRY BRANCH
MSB 47B	1	174-156	UPPER FOURMILE
MSB 47C	1	207-189	UPPER FOURMILE, CONGAREE
MSB 47D	1	249-217	SANTEE, DRY BRANCH
MSB 47TA	1	58-38	STEEL CREEK
MSB 48C	1	188-157	FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE
MSB 48D	1	248-218	SANTEE, DRY BRANCH
MSB 49A	1	85-68	STEEL CREEK, ELLENTON
MSB 49B	1	123-103	ELLENTON, LOWER FOURMILE
MSB 49D	1	241-213	SANTEE, DRY BRANCH

TABLE 13
(continued)

WELL	DATA SOURCE	FILTER ZONE	STRATIGRAPHIC UNIT
MSB 50B	1	160-144	*UPPER FOURMILE
MSB 50D	1	214-185	CONGAREE, SANTEE
MSB 51B	1	163-148	FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 51D	1	223-198	SANTEE
MSB 51DD	1	238-211	SANTEE, DRY BRANCH
MSB 52B	1	175-155	*UPPER FOURMILE, CONGAREE
MSB 52D	1	255-223	SANTEE, DRY BRANCH
MSB 53B	1	159-139	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 53C	1	195-176	CONGAREE
MSB 53D	1	250-219	SANTEE, DRY BRANCH
MSB 54B	1	140-121	ELLENTON, LOWER FOURMILE
MSB 54C	1	179-164	UPPER FOURMILE
MSB 54D	1	249-221	SANTEE, DRY BRANCH
MSB 54TA	1	87-68	STEEL CREEK
MSB 55C	1	201-159	FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 55D	1	252-221	SANTEE, DRY BRANCH
MSB 61C	1	183-165	UPPER FOURMILE, CONGAREE
MSB 61D	1	238-205	CONGAREE, SANTEE, DRY BRANCH
MSB 65D	1	252-212	*SANTEE, DRY BRANCH
MSB 66B	1	149-131	LOWER FOURMILE
MSB 66C	1	177-161	UPPER FOURMILE, CONGAREE
MSB 66D	1	249-211	SANTEE, DRY BRANCH
MSB 66TA	1	50-22	STEEL CREEK
MSB 67B	1	142-123	*ELLENTON, LOWER FOURMILE
MSB 67C	1	181-161	UPPER FOURMILE
MSB 67D	1	248-221	SANTEE, DRY BRANCH
MSB 68B	1	138-118	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 68C	1	179-158	UPPER FOURMILE
MSB 68D	1	248-214	SANTEE, DRY BRANCH
MSB 69B	1	150-131	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 69C	1	189-160	UPPER FOURMILE
MSB 69D	1	247-211	CONGAREE, SANTEE, DRY BRANCH
MSB 69TA	1	94-67	STEEL CREEK
MSB 70C	1	186-168	CONGAREE, SANTEE
MSB 71B	1	143-121	LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE
MSB 72B	1	163-141	UPPER FOURMILE, CONGAREE
MSB 73B	1	144-122	ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE
MSB 82C	1	185-164	UPPER FOURMILE
MSB 83C	1	192-170	UPPER FOURMILE
MSB 84C	1	204-182	UPPER FOURMILE
MSB 85C	1	186-160	UPPER FOURMILE
MSB-86C	3	174-152	FOURMILE CLAYEY ZONE, UPPER FOURMILE

TABLE 13
(continued)

WELL	DATA SOURCE	FILTER ZONE	STRATIGRAPHIC UNIT
RWM 1	1	238-173	*CONGAREE, SANTEE, DRY BRANCH
RWM 2	1	251-131	*ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE, SANTEE, DRY BRANCH
RWM 3	1	251-136	*ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE, SANTEE, DRY BRANCH
RWM 4	1	248-121	*ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE, SANTEE, DRY BRANCH
RWM 5	1	250-105	STEEL CREEK, ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE, SANTEE, DRY BRANCH
RWM 6	1	257-131	LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE, SANTEE, DRY BRANCH CONGAREE, SANTEE, DRY BRANCH
RWM 7	1	252-135	*ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE, SANTEE, DRY BRANCH
RWM 8	1	257-95	*ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE, SANTEE, DRY BRANCH
RWM 9	1	250-123	*ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE, SANTEE, DRY BRANCH
RWM 10	1	252-114	*STEEL CREEK, ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE, SANTEE, DRY BRANCH
RWM 11	1	251-124	*ELLENTON, LOWER FOURMILE, FOURMILE CLAYEY ZONE, UPPER FOURMILE, CONGAREE, SANTEE, DRY BRANCH
SRW 2A	1	107-82	LOWER FOURMILE
SRW 2B	1	171-146	UPPER FOURMILE, CONGAREE
SRW 9A	1	133-107	LOWER FOURMILE, FOURMILE CLAYEY ZONE
SRW 9B	1	172-146	FOURMILE CLAYEY ZONE, UPPER FOURMILE
SRW 12A	1	126-96	FOURMILE CLAYEY ZONE
SRW 12B	1	166-140	UPPER FOURMILE, CONGAREE
SRW 12C	1	212-172	CONGAREE, SANTEE, DRY BRANCH
SRW 13A	1	114-86	LOWER FOURMILE, FOURMILE CLAYEY ZONE
SRW 13B	1	173-147	UPPER FOURMILE, CONGAREE, SANTEE
SRW 13C	1	232-189	SANTEE, DRY BRANCH
SRW 16A	1	163-113	FOURMILE CLAYEY ZONE, UPPER FOURMILE
SRW 16B	1	180-152	UPPER FOURMILE, CONGAREE
SRW 16C	1	245-195	CONGAREE, SANTEE, DRY BRANCH

*Estimated from structure-contour maps rather than logs; not as accurate, therefore, as other data.

Data Source Key:

- 1 - Well construction diagrams
- 2 - Estimated; see page 72
- 3 - Personal communication, SRS personnel

TABLE 14

WATER FILTER ZONES IN STRATIGRAPHIC UNITS
SAVANNAH RIVER SITE
Aiken, South Carolina

BLACK CREEK	STEEL CREEK	ELLENTON	LOWER FOURMILE	FOURMILE CLAYEY ZONE	UPPER FOURMILE	CONGAREE	SANTEE	DRY BRANCH
MSB-12TA MSB-34TA	ASB-8A ASB-8TA MSB-10A MSB-12TB MSB-21TA MSB-23A MSB-23TA MSB-27TA MSB-29TA MSB-30A MSB-30AA MSB-31A MSB-33A MSB-33TA MSB-34TB MSB-35A MSB-35TA MSB-36A MSB-37B MSB-38B MSB-39A MSB-39B MSB-37A MSB-37TA MSB-38TA MSB-39A MSB-39TA MSB-40TA MSB-41A MSB-41TA MSB-42TA MSB-43TA MSB-46A MSB-47TA MSB-49A MSB-54TA MSB-66TA MSB-69TA RWM-5 RWM-10	ASB-6AA ASB-8A MSB-9A MSB-10A MSB-10B MSB-11A MSB-15AA MSB-26B MSB-29A MSB-30AA MSB-30B MSB-33A MSB-34A MSB-35A MSB-36A MSB-37B MSB-38B MSB-39A MSB-39B MSB-40A MSB-40B MSB-41A MSB-41B MSB-42A MSB-43A MSB-44A MSB-45A MSB-46A MSB-49A MSB-49B MSB-53B MSB-54B MSB-67B MSB-68B MSB-69B MSB-73B RWM-2	ASB-8B MSB-10B MSB-11A MSB-12A MSB-13A MSB-14A MSB-15AA MSB-17BB MSB-19A MSB-26B MSB-29B MSB-30B MSB-35A MSB-36B MSB-37B MSB-38B MSB-39B MSB-40B MSB-41C MSB-42A MSB-43A MSB-44A MSB-48C MSB-51B MSB-53B MSB-55C MSB-68B MSB-69B MSB-54B MSB-66B MSB-67B MSB-68B MSB-69B MSB-71B MSB-73B RWM-2 RWM-3 RWM-4 RWM-5 RWM-6	ASB-8B MSB-10B MSB-12B MSB-13A MSB-14A MSB-15A MSB-15AA MSB-17BB MSB-30B MSB-31B MSB-33B MSB-36B MSB-37B MSB-38B MSB-39B MSB-40B MSB-41C MSB-42A MSB-43A MSB-44A MSB-48C MSB-51B MSB-53B MSB-55C MSB-68B MSB-69B MSB-54B MSB-66B MSB-67B MSB-68B MSB-69B MSB-71B MSB-73B RWM-2 RWM-3 RWM-4 RWM-5 RWM-6 RWM-7 RWM-8 RWM-9	ABP-3C ABP-8C AC-2A ASB-8B ASB-9B ASB-9C MCB-5C MCB-7C MSB-11B MSB-12B MSB-14A MSB-15A MSB-16A MSB-19B MSB-20A MSB-21B MSB-24A MSB-25A MSB-27B MSB-29C MSB-30B MSB-30CC MSB-31B MSB-31CC MSB-35B MSB-36B MSB-38C MSB-39B MSB-40B MSB-41C MSB-42A MSB-43A MSB-44A MSB-48C MSB-51B MSB-53B MSB-55C MSB-68B MSB-69B MSB-54B MSB-66B MSB-67B MSB-68B MSB-69B MSB-71B MSB-73B RWM-2 RWM-3 RWM-4 RWM-5 RWM-6 RWM-7 RWM-8 RWM-9	ABP-2A ABP-3C ABP-4A ABP-8C AC-2A ARP-2 ARP-3 ARP-4 ASB-8C ASB-9B ASB-9C MCB-2 MCB-5C MCB-6C MCB-7C MSB-11B MSB-11C MSB-12B MSB-12C MSB-13B MSB-14A MSB-14B MSB-17A MSB-18A MSB-18B MSB-20A MSB-21A MSB-21B MSB-23B MSB-24A MSB-25A MSB-27B MSB-28A MSB-29D MSB-30CC MSB-31CC MSB-33C	ABP-1A ABP-1DD ABP-2A ABP-2DD ABP-3 ABP-4A ABP-4DD ABP-6D ABP-7D ABP-8C ABP-8D AC-2B ACB-1A ACB-2A ACB-3A AMB-4 AMB-5 AMB-6 AMB-7 AOB-1 AOB-2 ARP-1A ARP-2 ARP-3 ARP-4 ASB-7 ASB-8 ASB-8C ASB-9 ASB-9C MCB-2 MCB-4 MCB-5 MCB-6 MCB-8D MCB-9D MSB-2A MSB-7A MSB-8A	ABP-1A ABP-1DD ABP-2A ABP-2DD ABP-3 ABP-4A ABP-4DD ABP-6D ABP-7D ABP-8C ABP-8D AC-2B ACB-1A ACB-2A ACB-3A ACB-4A AMB-4 AMB-5 AMB-6 AMB-7 AOB-1 AOB-2 ARP-1A ARP-2 ARP-3 ARP-4 ASB-7 ASB-8 ASB-8C ASB-9 ASB-9C ASB-2A ASB-3A ASB-4 ASB-5A ASB-6A ASB-7 ASB-8 ASB-9 MCB-4 MCB-5

TABLE 14
(continued)

BLACK CREEK	STEEL CREEK	ELLENTON	LOWER FOURMILE	FOURMILE CLAYEY ZONE	UPPER FOURMILE	CONGARREE	SANTEE	DRY BRANCH
		RWM-3 RWM-4 RWM-5 RWM-7 RWM-8 RWM-9 RWM-10 RWM-11	RWM-7 RWM-8 RWM-9 RWM-10 RWM-11 SRW-2A SRW-9A SRW-13A	RWM-10 RWM-11 SRW-9A SRW-9B SRW-12A SRW-13A SRW-16A	MSB-52B MSB-53B MSB-54C MSB-55C MSB-61C MSB-66C MSB-67C MSB-68C MSB-69C MSB-71B MSB-72B MSB-82C MSB-83C MSB-84C MSB-85C MSB-86C RWM-2 RWM-3 RWM-4 RWM-5 RWM-6 RWM-7 RWM-8 RWM-9 RWM-10 RWM-11 SRW-2B SRW-9B SRW-12B SRW-13B SRW-16A SRW-16B	MSB-34B MSB-35B MSB-36B MSB-36C MSB-37C MSB-38C MSB-39C MSB-40B MSB-40C MSB-42B MSB-42C MSB-43B MSB-43D MSB-44B MSB-45B MSB-46B MSB-47C MSB-48C MSB-50D MSB-52B MSB-53C MSB-61C MSB-61D MSB-66C MSB-69D MSB-70C MSB-72B RWM-1 RWM-2 RWM-3 RWM-4 RWM-5 RWM-6 RWM-7 RWM-8 RWM-9 RWM-10 RWM-11	MSB-9B MSB-9C MSB-10C MSB-11D MSB-11F MSB-13C MSB-14B MSB-15D MSB-16C MSB-17B MSB-18B MSB-19C MSB-20C MSB-21A MSB-22 MSB-24 MSB-25 MSB-26A MSB-27A MSB-27B MSB-29D MSB-29DD MSB-30C MSB-31C MSB-32 MSB-33 MSB-34C MSB-35B MSB-36C MSB-36D MSB-37D MSB-38D MSB-39C MSB-39D MSB-40C MSB-40D MSB-41D MSB-42C	MCB-8D MCB-9D MSB-1A MSB-2A MSB-3A MSB-4A MSB-5A MSB-6A MSB-7A MSB-8A MSB-9C MSB-10D MSB-11E MSB-11F MSB-12D MSB-13C MSB-14C MSB-15C MSB-15D MSB-16C MSB-17C MSB-19C MSB-20C MSB-21C MSB-22 MSB-23 MSB-24 MSB-25 MSB-26 MSB-27 MSB-27A MSB-28 MSB-29DD MSB-30C MSB-31C MSB-33 MSB-34C MSB-35B MSB-36C MSB-36D MSB-37D MSB-38D MSB-39C MSB-39D MSB-40C MSB-40D MSB-41D MSB-42C

TABLE 14
(continued)

BLACK CREEK	STEEL CREEK	ELLENTON	LOWER FOURMILE	FOURMILE CLAYEY ZONE	UPPER FOURMILE	CONGAREE	SANTEE	DRY BRANCH
						SRW-2B SRW-12B SRW-12C SRW-13B SRW-16B SRW-16C	MSB-42D MSB-43D MSB-43DD MSB-44B MSB-44C MSB-45C MSB-46C MSB-47D MSB-48D MSB-49D MSB-50C MSB-51D MSB-51DB MSB-52D MSB-53D MSB-54D MSB-55D MSB-61D MSB-65D MSB-66D MSB-67D MSB-68D MSB-69D MSB-70C RWM-1 RWM-2 RWM-3 RWM-4 RWM-5 RWM-6 RWM-7 RWM-8 RWM-9 RWM-10 RWM-11 SRW-12C SRW-13B SRW-13C SRW-16C	MSB-36D MSB-37D MSB-38D MSB-39D MSB-40D MSB-41D MSB-42D MSB-43DD MSB-44C MSB-45C MSB-46C MSB-47D MSB-48D MSB-49D MSB-51DD MSB-52D MSB-53D MSB-54D MSB-55D MSB-61D MSB-65D MSB-66D MSB-67D MSB-68D MSB-69D MSB-70C RWM-1 RWM-2 RWM-3 RWM-4 RWM-5 RWM-6 RWM-7 RWM-8 RWM-9 RWM-10 RWM-11 SRW-12C SRW-13C SRW-16C

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