

## 03050109-14

(*Saluda River*)

### General Description

Watershed 03050109-14 (formerly 03050109-210) located in Lexington and Richland Counties and consists primarily of the lowest reach of the *Saluda River* and its tributaries from the Lake Murray dam to its confluence with the Broad River. The watershed occupies 65,609 acres of the Piedmont and Sandhill regions of South Carolina. Land use/land cover in the watershed includes: 41.6% urban land, 32.5% forested land, 19.2% agricultural land, 4.0% forested wetland (swamp), 1.7% water, 0.7% barren land, and 0.3% nonforested wetland (marsh).

This lowest section of the Saluda River flows out of the Lake Murray dam and merges downstream with the Broad River Watershed to form the Congaree River Watershed in the City of Columbia. The lower Saluda River is protected under the S.C. Scenic Rivers Act. Rawls Creek (Yost Creek, Koon Branch), Lorick Branch, and Kinley Creek drain into the Saluda River near the City of Irmo. Juniper Creek and Long Creek (Pine Branch, Hamburg Branch) join to form Twelvemile Creek near the Town of Gilbert. Twelvemile Creek accepts drainage from Hogpen Branch, Fall Branch, and Boggy Branch before flowing through the Town of Lexington to accept the drainage of Fourteenmile Creek (Long Branch) and enter the river. Some of the ponds encountered by Twelvemile Creek include: Barr Lake, Gibsons Pond, Lexington Mill Pond, and Corley Mill Pond. Stoop Creek, Senn Branch, and Double Branch enter the Saluda River just prior to its confluence with the Broad River. There are a total of 196.5 stream miles and 1,161.7 acres of lake waters in this watershed. The mainstem of this section of the Saluda River is classified TGPT\* (\*DO not less than daily average of 5 mg/l), and all other streams are classified FW.

### Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
S-152	W	TPGT*	SALUDA RIVER JUST BELOW LAKE MURRAY DAM
S-287	W/BIO	FW	RAWLS CREEK AT S-32-107
S-149	W	TPGT*	SALUDA RIVER AT MEPCO ELECTRIC PLANT WATER INTAKE
S-150	W	FW	LORICK BRANCH AT POINT UPSTREAM OF JUNCTION WITH SALUDA RIVER
S-052	BIO	FW	TWELVEMILE CREEK AT SR 106
RS-02457	RS02	FW	TWELVEMILE CREEK AT S-32-106
S-294	W	FW	TWELVEMILE CREEK AT U.S. 378
S-848	BIO	FW	FOURTEENMILE CREEK AT SR 28
S-260	W/BIO	FW	KINLEY CREEK AT S-32-36 (ST. ANDREWS ROAD) IN IRMO
S-298	INT	TPGT*	SALUDA RIVER AT USGS GAGING STATION, 1/2 MILE BELOW I-20

*Saluda River* - There are three SCDHEC monitoring stations along this section of the Saluda River. Just below the Lake Murray dam (*S-152*), aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in total suspended solids. There is a significant increasing trend in pH. Significant increasing trends in dissolved oxygen concentration and decreasing trends in turbidity and fecal coliform bacteria concentration suggest improving conditions for these parameters at this site. Further downstream (*S-149*), aquatic life uses are not supported due to

turbidity excursions. In addition, there is a significant increasing trend in total suspended solids. There is a significant increasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration. At the downstream site (*S-298*), aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand and total suspended solids. There is a significant increasing trend in pH. Significant increasing trends in dissolved oxygen concentration and decreasing trends in turbidity, total phosphorus concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters at this site.

***Rawls Creek (S-287)*** – Aquatic life uses are not supported based on macroinvertebrate community data and due to turbidity excursions. In addition, there is a significant increasing trend in total suspended solids. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions

***Lorick Branch (S-150)*** – Aquatic life uses are not supported due to dissolved oxygen excursions. There is a significant increasing trend in pH. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions

***Twelvemile Creek*** – There are three SCDHEC monitoring stations along Twelvemile Creek. At the upstream site (*S-052*), aquatic life uses are partially supported based on macroinvertebrate community data. At the midstream site (*RS-02457*), aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions. At the downstream site (*S-294*), aquatic life uses are fully supported. There is a significant increasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration.

***Fourteen Mile Creek (S-848)*** – Aquatic life uses are partially supported based on macroinvertebrate community data.

***Kinley Creek (S-260)*** – Aquatic life uses are partially supported based on macroinvertebrate community data. In addition, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in total phosphorus concentration and total suspended solids. Recreational uses are not supported due to fecal coliform bacteria excursions.

*A fish consumption advisory has been issued by SCDHEC for mercury and includes the Saluda River within this watershed (see advisory p.40).*

## Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-103	GB	TERTIARY SANDS	OAK GROVE ELEMENTARY SCHOOL

All water samples collected from ambient monitoring well **AMB-103** met standards for Class GB groundwater.

## NPDES Permitted Activities

### *Active NPDES Facilities*

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
SALUDA RIVER SCE&G/MCMEEKIN STEAM STATION	SC0002046 MAJOR INDUSTRIAL
SALUDA RIVER SCE&G/SALUDA HYDRO STATION	SC0002071 MINOR INDUSTRIAL
SALUDA RIVER SHAW INDUSTRIES GROUP/COLUMBIA SITE	SC0003557 MAJOR INDUSTRIAL
SALUDA RIVER WOODLAND UTILITIES	SC0029475 MINOR DOMESTIC
SALUDA RIVER BUSH RIVER UTILITIES WWTP	SC0032743 MINOR DOMESTIC
SALUDA RIVER CWS/I-20 REGIONAL SEWER SYSTEM	SC0035564 MINOR DOMESTIC
SALUDA RIVER CWS/FRIARSGATE SD	SC0036137 MINOR DOMESTIC
SALUDA RIVER PHILLIPS ELECTRONICS NA	SC0048330 MINOR INDUSTRIAL
KINLEY CREEK SHAW INDUSTRIES GROUP/COLUMBIA SITE	SC0003557 MAJOR INDUSTRIAL
TWELVEMILE CREEK TOWN OF LEXINGTON/COVENTRY WOODS SD	SC0026735 MAJOR DOMESTIC
FOURTEENMILE CREEK CWS/WATERGATE DEVELOPMENT	SC0027162 MINOR DOMESTIC
STOOP CREEK ALPINE UTILITIES/STOOP CREEK WWTP	SC0029483 MINOR DOMESTIC
HAMBURG BRANCH SOUTHEASTERN ASSOC./LEXINGTON	SCG730618 MINOR INDUSTRIAL
SALUDA RIVER BORAL BRICKS/CORLEY MILL MINE	SCG730640 MINOR INDUSTRIAL
SALUDA RIVER LA BARRIER/ZENKER ROAD PIT	SCG730672 MINOR INDUSTRIAL

SALUDA RIVER  
S&T RECYCLING LLC MINE

SCG730701  
MINOR INDUSTRIAL

SALUDA RIVER  
HENDON COLUMBIA/HENDON CORLEY MINE

SCG731103  
MINOR INDUSTRIAL

***Municipal Separate Storm Sewer Systems (MS4)***

***RECEIVING STREAM  
MUNICIPALITY  
RESPONSIBLE PARTY  
IMPLEMENTING PARTY***

***NPDES#  
MS4 PHASE  
MS4 SIZE  
COUNTY***

TWELVEMILE CREEK  
CITY OF COLUMBIA  
CITY OF COLUMBIA  
CITY OF COLUMBIA

SCS790001  
PHASE I  
MEDIUM MS4  
LEXINGTON

TWELVEMILE CREEK  
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RICHLAND COUNTY  
RICHLAND COUNTY

SCS400001  
PHASE I  
MEDIUM MS4

TWELVEMILE CREEK  
CITY OF COLUMBIA  
CITY OF COLUMBIA  
CITY OF COLUMBIA

SCS790001  
PHASE I  
MEDIUM MS4  
RICHLAND

TWELVEMILE CREEK  
CITY OF IRMO  
CITY OF IRMO  
LEXINGTON COUNTY

SCR036302  
PHASE II  
SMALL MS4

TWELVEMILE CREEK  
TOWN OF LEXINGTON  
TOWN OF LEXINGTON  
LEXINGTON COUNTY

SCR036303  
PHASE II  
SMALL MS4

TWELVEMILE CREEK  
UNINCORPORATED AREAS  
LEXINGTON COUNTY  
LEXINGTON COUNTY

SCR036304  
PHASE II  
SMALL MS4

TWELVEMILE CREEK  
CITY OF WEST COLUMBIA  
CITY OF WEST COLUMBIA  
LEXINGTON COUNTY

SCR036308  
PHASE II  
SMALL MS4

TWELVEMILE CREEK  
TOWN OF IRMO  
TOWN OF IRMO  
TOWN OF IRMO

SCR036302  
PHASE II  
SMALL MS4

TWELVEMILE CREEK  
UNINCORPORATED AREAS  
RICHLAND COUNTY  
RICHLAND COUNTY

SCS400001  
PHASE I  
MEDIUM MS4

## Nonpoint Source Permitted Activities

### *Land Disposal Activities*

#### Landfill Facilities

<i>LANDFILL NAME</i> <i>FACILITY TYPE</i>	<i>PERMIT #</i> <i>STATUS</i>
SCE&G McMEEKIN STEAM STATION INDUSTRIAL	323320-1601 ACTIVE
ALLIED FIBERS CORP. INDUSTRIAL	323319-1601 INACTIVE
MUSTARD COLEMAN CONSTRUCTION INDUSTRIAL	IWP-001 INACTIVE
EAGLE RECOVERY WOOD GRINDING COMPOSTING	322754-3001 ACTIVE
SOUTHEASTERN ASSOC. LCD/YT LF C&D	322428-1701 ACTIVE
SOUTHEASTERN ASSOC. C&D LF C&D	322428-1201 ACTIVE
BALL PARK ROAD DUMP MUNICIPAL	----- INACTIVE
HWY 378 C&D LANDFILL C&D	322903-1301 INACTIVE
CORLEY MILL BUILDERS, INC. LCD&YT LF C&D	322471-1701 INACTIVE
SLIGH PROPERTIES LCD&YT LANDFILL C&D	322470-1701 ACTIVE
S&T RECYCLING LCD LANDFILL C&D	322456-1703 ACTIVE
S&T RECYCLING GRADING WOOD PROCESSING FAC. COMPOSTING	322456-3001 ACTIVE
S&T RECYCLING WOOD PROCESSING FACILITY COMPOSTING	322456-3002 ACTIVE
HWY 1 LCD&YT LANDFILL (S&T GRADING) C&D	322456-1701 INACTIVE
HWY 378 LCD&YT LANDFILL (S&T GRADING) C&D	322456-1702 ACTIVE
HWY 378 C&D LANDFILL (S&T GRADING) C&D	322456-1202 ACTIVE
CRANDALL CORP. INDUSTRIAL	322704-2001 ACTIVE
BUSH RIVER C&D LANDFILL C&D	----- INACTIVE

CELANESE FIBERS CO. INDUSTRIAL	----- INACTIVE
MEPCO ELECTRA, INC. INDUSTRIAL	----- INACTIVE
BC COMPONENTS, INC. (PHILLIPS COMPONENTS) C&D	323347-1901 INACTIVE
SCE&G INDUSTRIAL	----- INACTIVE
GIST BACKHOE & GRINDING SERVICE COMPOSTING	402445-3001 INACTIVE

### **Land Applications**

<i>LAND APPLICATION FACILITY NAME</i>	<i>PERMIT # TYPE</i>
SEDIMENTATION/PERCOLATION POND CMC METAL RECYCLING	ND0077101 INDUSTRIAL
SPRAY IRRIGATION CAUGHMANS MEAT PLANT	ND0072702 INDUSTRIAL

### **Mining Activities**

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
SOUTHEASTERN ASSOC., INC. LEXINGTON COUNTY #1 MINE	1097-63 SAND
BORAL BRICK, INC. CORLEY MILL MINE	0028-63 SHALE
RICHARDSON CONSTRUCTION CO. RICHARDSON'S IRMO MINE	0781-63 CLAY
S&T RECYCLING LLC S&T RECYCLING MINE	1584-63 SAND/CLAY

### **Water Quantity**

<i>WATER USER STREAM</i>	<i>REGULATED CAPACITY (MGD) PUMPING CAPACITY (MGD)</i>
CITY OF WEST COLUMBIA	6.0
SALUDA RIVER	13.0

### **Growth Potential**

There is a high potential for future residential and industrial development in this watershed, which contains the Town of Lexington and portions of the Cities of Columbia and West Columbia, and the Towns of Gilbert, Summit, and Irmo. The area surrounding the Town of Lexington has grown rapidly during the past several years and the trend should continue. Several important highways run through the area including: SC 6, which runs from the Lake Murray dam south through the Town of

Lexington, and US 1 and US 378, which run west from the City of West Columbia and intersects with Highway 6 in Lexington; I-20 also serves the area. The watershed's industrial corridor is one of the most economically attractive in the Midlands Area for future development. Once sewer is readily available, residential development is expected to increase. The regional sewer line along Fourteenmile Creek is now in operation.

The construction of a water plant on the shore of Lake Murray north of the Town of Lexington has made available a water supply sufficient to support development. The City of West Columbia and Lexington County have extended major water mains in the area. Non-industrial dischargers in this basin are targeted by the §208 Regional Water Quality Management Plan for elimination with effluent to be transported to the City of Cayce's WWTP for treatment. Components of the regional system have either been constructed, are presently being constructed, or are presently being designed for the non-industrial dischargers on the south side of the Saluda River. These facilities will be consolidated after the system is available and it becomes economically feasible to connect. The facilities on the north side of the river are still in operation and will continue to operate as temporary facilities until a regional system is put in place. At present there are no plans for the design and construction of the necessary regional collection infrastructure. If conceptual plans to consolidate these facilities are implemented at some point in the future, it will result in a decrease of discharge levels into the lower portion of the Saluda River. The City of Cayce is in the process of expanding their regional WWTP to 25 million gpd and it is expected to come online in 2012. Though a percentage of this additional capacity is already committed, it is expected that this expansion will accommodate future growth in Lexington County.

## **Watershed Protection and Restoration Strategies**

### ***Total Maximum Daily Loads (TMDLs)***

A TMDL was developed by SCDHEC and approved by EPA for **Rawls Creek** at water quality monitoring site S-287. TMDLs determine the maximum amount of fecal coliform bacteria waterbodies can receive and still meet water quality standards. Urban and forest are the two major land uses in the Rawls Creek watershed. Both can be sources of fecal coliform bacteria. Targeting urban land for reduction of bacteria is the most effective strategy for this watershed. The target level of bacteria is 175 colonies/100ml, an urban reduction of 69%. Forested lands are not targeted for reduction, as there are currently no acceptable means of reducing fecal coliform sources within that land use. There are several tools available for implementing this TMDL, including an ongoing \$319 funded project, as well as NPS pollution outreach activities and materials. SCDHEC will continue to monitor water quality in Rawls Creek to evaluate the effectiveness of these measures.

A TMDL was developed by SCDHEC and approved by EPA for **Lorick Branch** at water quality monitoring site S-150. There was no NPDES facility permitted to discharge fecal coliform bacteria in this watershed. The entire watershed has been designated as a MS4. Possible sources of fecal coliform bacteria in this watershed are leaking sanitary sewers, sanitary sewer overflows (SSOs), urban runoff, and wildlife. The TMDL requires a reduction of 88% in fecal coliform loading for this stream to meet the recreational use standard.

TMDLs were developed by SCDHEC and approved by EPA for the **Lower Saluda River** and tributaries **Kinley Creek** and **Twelvemile Creek** at water quality monitoring sites S-149, S-260, and S-

294. There is a NPDES facility permitted to discharge fecal coliform bacteria on Twelvemile Creek and one on the Saluda River upstream of S-149. Much of this watershed has been designated as one or more MS4s. Possible sources of fecal coliform bacteria in the Twelvemile Creek watershed are leaking sewers, SSOs, failing septic systems, improper land application of manure, cattle watering in the creeks, wildlife, and urban runoff. Fecal coliform sources in the Saluda River and Kinley Creek watersheds are the same except for the agricultural sources. The TMDLs require reductions of 89% to 92% in fecal coliform loading for these streams to meet the recreational use standard.

