

03050109-13

(*Saluda River/Lake Murray*)

General Description

Watershed 03050109-13 (formerly 03050109-190, 200) is located in Newberry, Saluda, Lexington, and Richland Counties and consists primarily of the *Saluda River* and its tributaries from the *Lake Murray* headwaters to the dam. The watershed occupies 165,195 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 45.8% forested land, 25.8% water, 17.6% agricultural land, 9.1% urban land, 0.9% forested wetland (swamp), and 0.8% barren land.

The Saluda River watershed is joined by the Little Saluda River watershed to form the headwaters of Lake Murray. Spring Creek, Hawleek Creek, Rocky Creek (Whetstone Creek), Buffalo Creek, Hancock Creek, and Shirey Branch flow into the waters of upper Lake Murray. Camping Creek (Susannah Branch, Snap Branch, Stevens Creek, Millers Branch) and Bear Creek (Rocky Branch, Buzzards Branch, Stinking Creek) enter midlake on the northern shore, and Hollow Creek (Caney Branch, Little Creek, Horse Creek, Little Horse Creek, Little Hollow Creek, Hollow Branch), Beaverdam Creek (John Seay Creek), and Rocky Creek (Clemons Branch, Beech Creek) enter midlake on the southern shore of the lake. Johns Creek (Wyse Branch) and High Hill Creek (Lowman Creek, Cedar Creek, Mets Creek, Beards Creek, Sites Branch, Indian Fork) enter downlake on the northern shore, and Dudley Creek, Twentymile Creek, Frey Branch, and Eighteenmile Creek (Sixteenmile Creek) enter downlake on the southern shore near the dam. Lake Murray is owned and operated by SCE&G Company and is used for power production, recreation, and water supply. Billy Dreher State Park, located midlake on Billy Dreher Island is another natural resource in the watershed. There are a total of 325.6 stream miles (tributaries of Lake Murray) and 43,766.0 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RL-05420	RL05	FW	LAKE MURRAY, 0.7 MI NNW OF LAKE MURRAY SHORES
S-279	W	FW	LAKE MURRAY AT MARKER 63
S-211	W	FW	LAKE MURRAY, HOLLANDS LANDING OFF S-36-26
S-212	W	FW	LAKE MURRAY, MACEDONIA LANDING AT END OF S-36-26
S-977	SSS	FW	HOLLOW CREEK AT DERRICK HOLLOW ROAD
S-976	SSS	FW	HOLLOW CREEK AT DOG LEG ROAD
S-978	SSS	FW	LITTLE CREEK AT DEVILS BACKBONE ROAD
S-975	SSS	FW	HOLLOW CREEK AT PASTURE EDGE IMMEDIATELY UPSTREAM OF S-306
S-306	INT	FW	HOLLOW CREEK AT S-32-54
S-974	SSS	FW	HOLLOW CREEK AT LAKE MURRAY
S-973	SSS	FW	LAKE MURRAY AT RIDGE ROAD
RL-04372	RL04	FW	LAKE MURRAY, HOLLOW CREEK ARM, 1.75 MI NNE OF US 378 CROSSING
S-280	W	FW	LAKE MURRAY AT MARKER 102
S-290	W	FW	CAMPING CREEK S-36-202 BELOW GA PACIFIC
S-850	BIO	FW	CAMPING CREEK AT SR 72
S-213	W	FW	LAKE MURRAY AT S-36-15
RL-05418	RL05	FW	LAKE MURRAY, 0.38 MI SSE OF S-32-1322

RL-05410	RL05	FW	LAKE MURRAY AT END OF SHULL ISLAND AT THE END OF S-32-115
RL-03338	RL03	FW	LAKE MURRAY, 0.8 MI S OF COUNTS ISLAND & 0.75 MI NW OF LUNCH ISLAND
RL-06440	RL06	FW	LAKE MURRAY, 0.95 MI NE OF END OF S-32-1239
S-273	W	FW	LAKE MURRAY AT MARKER 166
RL-03334	RL03	FW	LAKE MURRAY, COVE 1.3 MI W OF BALLENTINE
S-274	W	FW	LAKE MURRAY AT MARKER 143
RL-06442	RL06	FW	LAKE MURRAY, 0.65 MI NW JUNCTION OF S-32-109 & S-32-38
RL-02316	RL02	FW	LAKE MURRAY, SW OF JAKES MARINA
S-204	W	FW	LAKE MURRAY AT DAM AT SPILLWAY (MARKER 1)
CL-083	INT	FW	LAKE MURRAY FOREBAY EQUIDISTANT FROM DAM AND SHORELINES

Lake Murray - Lake Murray is a 51,000-acre impoundment on the Saluda River, with a maximum depth of approximately 189.6 feet and an average depth of approximately 41.3 feet. The lake's watershed comprises 1,193.2 square miles. There are twenty SCDHEC monitoring stations along the Saluda River's path through Lake Murray, not including the stations located in the major arms of the lake. In the headwaters area of the lake, **RL-05420** and **S-279** are fully supported for aquatic life and recreational uses. Significant decreasing trends in turbidity, total phosphorus concentration, total nitrogen concentration, and fecal coliform bacteria concentration at S-279 suggest improving conditions for these parameters. There is a significant increasing trend in pH at S-279. Further downlake (**S-212**), aquatic life uses are partially supported due to pH excursions. There is a significant increasing trend in pH. A significant decreasing trend in total phosphorus suggests improving conditions for this parameter. Recreational uses are fully supported.

In the midlake section of Lake Murray, **S-280**, **RL-05418**, and **RL-05410** are all fully supported for aquatic life and recreational uses. There is a significant increasing trend in pH at S-280. Significant decreasing trends in turbidity and total nitrogen concentration suggest improving conditions for these parameters at this site.

In the downlake section of Lake Murray (open water), **RL-03338**, **RL-06440**, **S-273**, **S-274**, **RL-06442**, and **S-204** are all fully supported for aquatic life and recreational uses; however, S-273 has a significant increasing trend in five-day biochemical oxygen demand. S-273, S-274, and S-204 all have significant increasing trends in pH. They also all have significant decreasing trends in turbidity, total phosphorus concentration, total nitrogen concentration, and fecal coliform bacteria concentration, which suggest improving conditions for these parameters at these sites. Near the dam, **CL-083** is not supporting of aquatic life uses due to occurrences of copper in excess of the aquatic life chronic criterion. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration. *Fish tissue analyses on species caught within Lake Murray indicate no advisories or restrictions on consumption of fish from these waters.*

“No Discharge” Designation for Lake Murray

In May 2000, Lake Murray was designated a **No Discharge** lake for marine toilets due to the lake's role as a major water recreation area, a container of drinking water intakes, and as an area of increasingly intensive boating activities. The increasing number of houseboats and vessels moored and operated on the lake with marine toilets became a source of concern about potential degradation of the lake in the future. Federal and state law prohibits the discharge of untreated

sewage into waters of the United States, but treated sewage from marine toilets previously has been permitted, provided it has undergone some treatment and disinfection. Because microorganisms can continue to thrive after rudimentary treatment by on-board marine toilets, discharges may be completely banned from such waterbodies to protect the public's health, safety, and welfare. Federal law allows states to completely ban discharges if it can be demonstrated that adequate and accessible pump out facilities are available. DHEC determined this to be the case with seven marinas around Lake Murray designated for treatment and disposal. The law banning discharges applies to large vessels with onboard toilets that previously were allowed to discharge treated wastes into the lake.

Buffalo Creek Arm of Lake Murray (S-211) – Aquatic life and recreational uses are fully supported. There is a significant increasing trend in pH. Significant decreasing trends in total phosphorus concentration and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters.

Hollow Creek – There are four SCDHEC monitoring stations along Hollow Creek. Several of the stations are special study stations that were only monitored for fecal coliform bacteria levels. Recreational uses are not supported at ***S-977*** and ***S-976*** due to fecal coliform bacteria excursions. Recreational uses are fully supported at ***S-975***. Aquatic life uses are fully supported at ***S-306***, but recreational uses are not supported due to fecal coliform bacteria excursions.

Little Creek (S-978) – This is a special study station that was only monitored for fecal coliform bacteria levels. Recreational uses fully supported.

Hollow Creek Arm of Lake Murray - There are three SCDHEC monitoring stations along the Hollow Creek arm of Lake Murray. Several of the stations are special study stations that were only monitored for fecal coliform bacteria levels. Recreational uses are fully supported at ***S-974*** and ***S-973***. Aquatic life and recreational uses are fully supported at ***RL-04372***.

Camping Creek – There are two SCDHEC monitoring stations along Camping Creek. At the upstream site (***S-290***), aquatic life uses are fully supported. There is a significant increasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the downstream site (***S-850***), aquatic life uses are partially supported based on macroinvertebrate community data.

Camping Creek Arm of Lake Murray (S-213) – Aquatic life and recreational uses are fully supported. There is a significant increasing trend in pH. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter.

High Hill Creek Arm of Lake Murray – Aquatic life and recreational uses are fully supported.

Sixteenmile Creek Arm of Lake Murray - Aquatic life and recreational uses are fully supported.

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-072	GB	PIEDMONT BEDROCK	BALLENTINE
AMB-064	GB	PIEDMONT BEDROCK	LITTLE MOUNTAIN
AMB-041	GB	MIDDENDORF	SUMMIT

All water samples collected from ambient monitoring well *AMB-072*, *AMB-064*, and *AMB-041* met standards for Class GB groundwater.

NPDES Permitted Activities

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
BEAR CREEK TRIBUTARY METTS CONSTRUCTION/METTS CLAY MINE	SCG730693 MINOR INDUSTRIAL
MILLERS BRANCH TO STEVENS CREEK THE RICECHILD GROUP/MII-DERA	SC0032042 MINOR DOMESTIC

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM MUNICIPALITY RESPONSIBLE PARTY IMPLEMENTING PARTY</i>	<i>NPDES# MS4 PHASE MS4 SIZE COUNTY</i>
LAKE MURRAY ----- RICHLAND COUNTY RICHLAND COUNTY	SCS400001 PHASE I MEDIUM MS4
LAKE MURRAY UNINCORPORATED AREAS RICHLAND COUNTY RICHLAND COUNTY	SCS400001 PHASE I MEDIUM MS4
LAKE MURRAY UNINCORPORATED AREAS LEXINGTON COUNTY LEXINGTON COUNTY	SCR036304 PHASE II SMALL MS4

Nonpoint Source Permitted Activities

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
MARTIN CONTRACTING COMPOSTING COMPOST	412658-3001 INACTIVE

LEXINGTON CO. SANITARY LANDFILL #3 MSW	----- INACTIVE
METTS WOOD RECYCLING COMPOSTING	362750-3001 ACTIVE
METTS LCD & YT LANDFILL C&D	362490-1701 ACTIVE
GA PACIFIC PROSPERITY PLYWOOD ISW LF ISW	363304-1601 ACTIVE

Land Applications

<i>LAND APPLICATION FACILITY NAME</i>	<i>PERMIT # TYPE</i>
SPRAY IRRIGATION NCW&SA/BEDFORD WAY	ND0062219 DOMESTIC
TILE FIELD AAA UTILITIES/MALLARD BAY SD.	ND0019640 DOMESTIC
TILEFIELD NCW&SA/NEWBERRY SHORES	ND0060577 DOMESTIC
LOW PRESSURE IRRIGATION SYSTEM CWS/SMALL WOODS ESTATES	ND0007994 DOMESTIC

Mining Activities

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
METTS CONSTRUCTION INC. METTS CLAY MINE	1449-71 CLAY

Water Quantity

<i>WATER USER STREAM</i>	<i>REG. CAPACITY (MGD) PUMPING CAPACITY (MGD)</i>
CITY OF COLUMBIA LAKE MURRAY	100.0 75.0
CITY OF WEST COLUMBIA LAKE MURRAY	23.0 37.0
NEWBERRY CO. W&SA LAKE MURRAY	2.0 1.0

Growth Potential

This watershed contains portions of the Towns of Prosperity, Little Mountain, Chapin, Summit and Lake Murray. There is and will be continued growth in areas bordering and surrounding Lake Murray. The widening of US 378 to four lanes has increased the expansion rate along the Lexington side of the lake. US 76 runs along the opposite shoreline of the lake, as does

a rail line. The widening of I-26 toward the Chapin\Pomaria Exit is encouraging growth on both sides of the interstate.

Residential development continues to grow within the lake region. The area around the dam is the most developed and has water and sewer. The Richland County portion of the lake is also well developed and has several residential subdivisions where water and sewer are available. This will facilitate continued development along the shoreline as well as development along US 378. The Central Midlands Regional Council of Government has completed a §208 planning study, which includes population and growth projections for the area. SC 6 has been widened across the Lake Murray Dam leading into the Town of Lexington.

The upper lake region in Newberry County is primarily rural: a few small subdivisions, some industry, and agricultural activities on a small scale. The Town of Prosperity and a large portion of lower Newberry County extending to Dreher Island State Park is serviced by the Newberry County Water and Sewer Authority, which operates a regional WWTP that discharges into the Broad River Basin via Cannons Creek.

Lake Murray, as the main water-based recreational resource in the region, draws millions of visitors annually to its numerous parks, recreational areas, and waterways. All aspects of growth surrounding Lake Murray (tourist industry, residential development, agricultural activities) are expected to continue.

Watershed Protection and Restoration Strategies

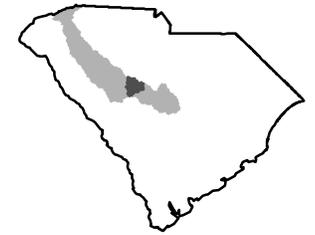
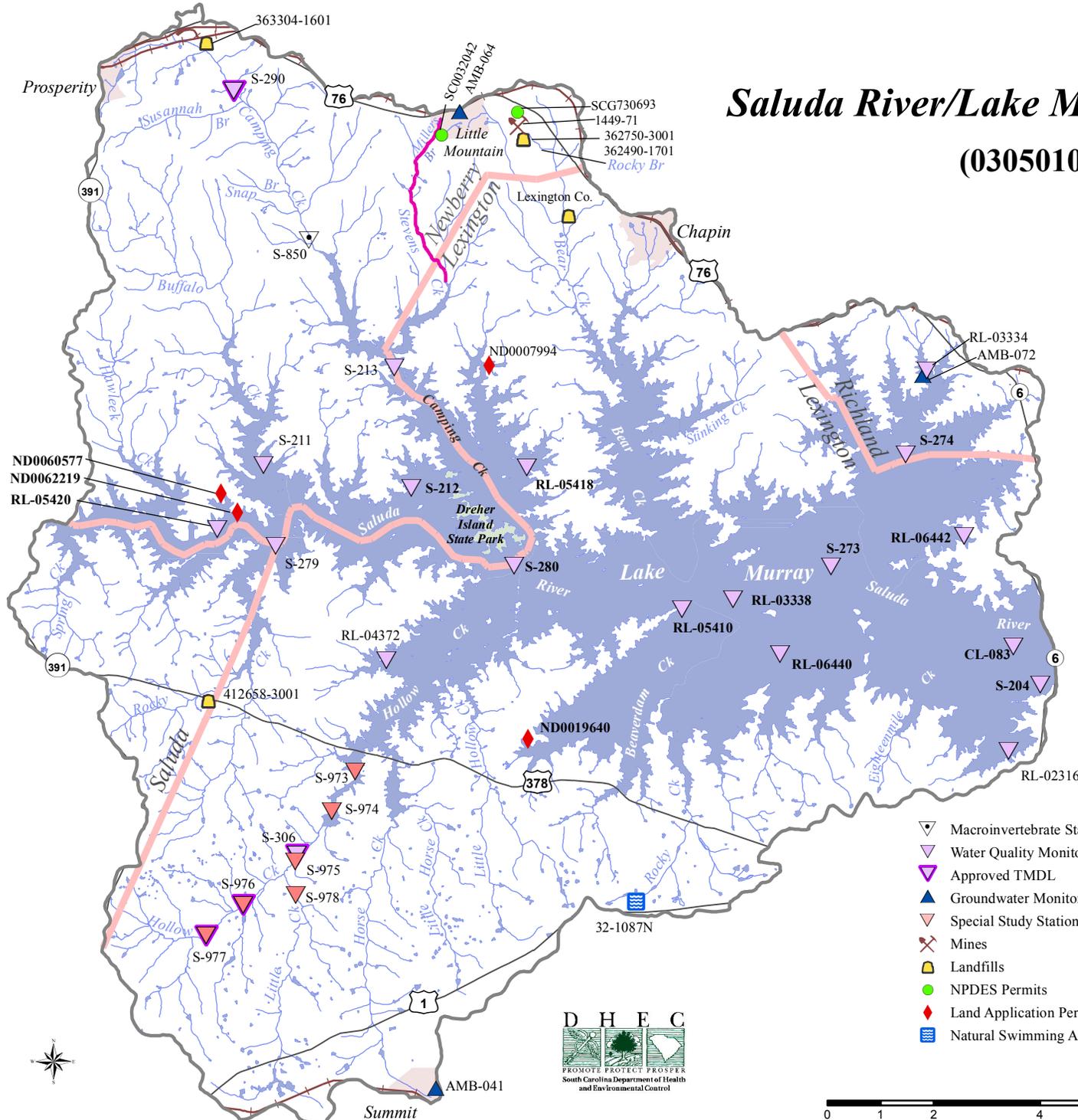
Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for **Camping Creek** at water quality monitoring site S-290. TMDLs determine the maximum amount of fecal coliform bacteria waterbodies can receive and still meet water quality standards. There is no active NPDES facility permitted to discharge fecal coliform bacteria in the Camping Creek watershed. This watershed has no designated or potential MS4s. Possible sources of fecal coliform bacteria in this watershed are failing septic systems, cattle watering in the creeks, and birds and wildlife. The TMDL requires a reduction of 95% in fecal coliform loading for this stream to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for **Hollow Creek** at water quality monitoring site S-306. There was no NPDES facility permitted to discharge fecal coliform bacteria in this watershed. None of this watershed has been designated as a MS4. Possible sources of fecal coliform bacteria in this watershed are failing septic systems, cattle watering in the creeks, and birds and wildlife. The TMDL requires a reduction of 99% in fecal coliform loading for this stream to meet the recreational use standard. The nonpoint source component of the Hollow Creek TMDL is currently being implemented using §319 grant funds. Implementation is scheduled to be completed in June 2013. For more information on §319 grants, visit <http://www.scdhec.gov/environment/water/grants.htm#319>.

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- ▽ Macroinvertebrate Stations
- ▽ Water Quality Monitoring Stations
- ▽ Approved TMDL
- ▲ Groundwater Monitoring Stations
- ▽ Special Study Stations
- ⌘ Mines
- 🗑 Landfills
- NPDES Permits
- ◆ Land Application Permits
- 🏊 Natural Swimming Areas
- ⚡ Interstates
- 🚂 Railroad Lines
- 🛣 Highways
- 🗺 County Lines
- 🌊 Modeled Stream
- 🌊 Stream
- 🌿 Wetland
- 🟦 Lake
- 📏 10-Digit Hydrologic Units
- 🏘 Cities/Towns
- 🌳 Public Lands

