03050107-05

(Tyger River)

General Description

Watershed 03050107-05 (formerly 03050107-050 plus Tinker Creek) is located in Spartanburg and Union Counties and consists primarily of the ***Tyger River*** and its tributaries. The watershed occupies 156,602 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 69.3% forested land, 20.2% agricultural land, 4.7% urban land, 3.4% forested wetland, 1.1% barren land, 0.8% scrub/shrub land, and 0.5% water.

The Tyger River is formed by the confluence of the South Tyger River Watershed and the North Tyger River Watershed. The Tyger River then accepts drainage from Nichol Branch (Kelly Branch), Vise Branch, Harrelson Branch (Wofford Branch, Aiken Branch), Jimmies Creek, Cane Creek (Martha Shands Branch, Williams Branch, Trail Branch), Motley Branch, Hackers Creek, and Dutchman Creek. Dutchman Creek accepts drainage from Harrison Branch, Newman Branch, Smith Creek (Jennings Branch), Powder Spring Branch, Shands Branch (Pennywinkle Branch), Paint Bearden Branch, Bearden Branch, another Wofford Branch, Wiley Fork Creek (Carson Branch), and Dry Branch. Cowdens Creek enters the river next followed by Mill Creek, another Wofford Branch, Holcombe Branch, Isaacs Creek, and Sparks Creek. Further downstream, the Tyger River accepts drainage from the Fairforest Creek Watershed, Tinker Creek (Henry Creek, Reno Lake, Brushy Creek, Swift Run), Hawkins Creek, Johnsons Creek, Padgetts Creek, Evans Branch, Rennicks Branch, Duffs Branch, Peters Creek, and Cane Creek (Brocks Creek). There are a total of 306.3 streams miles and 140.3 acres of lake waters in this watershed, all classified FW. The lower half of the watershed resides within the Sumter National Forest. Rose Hill State Park is located near the confluence of the Tyger River and Fairforest Creek.

Surface Water Quality

Station #	Type	Class	Description
B-008	P/W	FW	TYGER RIVER AT S-42-50, E OF WOODRUFF
B-019	S/W	FW	JIMMIES CREEK AT S-42-201, 2 MI E OF WOODRUFF
B-786	BIO	FW	JIMMIES CREEK AT STEWART RD, 1MI UPSTREAM OF SR 113
B-733	BIO	FW	DUTCHMAN CREEK AT S-42-511
B-286	S/W	FW	TINKER CREEK AT ROAD TO TREATMENT PLANT, 1.3 MI SSE OF UNION
B-287	S/W	FW	TINKER CREEK AT UNNUMBERED COUNTY ROAD, 1.7 MI SSE OF UNION
B-336	W/BIO	FW	TINKER CREEK AT S-44-278, 9 MI SSE OF UNION
B-051	P/W	FW	TYGER RIVER AT SC 72, 5.5 MI SW OF CARLISLE
B-349	INT	FW	TYGER RIVER AT S-44-35, 3.5 MI S OF CARLISLE
B-777	BIO	FW	CANE CREEK AT SR 359

Tyger River – There are three SCDHEC monitoring stations along the Tyger River. At the furthest upstream site ***(B-008)***, aquatic life uses are fully supported. There is a significant decreasing trend in pH. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. Aquatic life and recreational uses are fully supported at the midstream site ***(B-051)***; however, there is a significant increasing trend in five-day biochemical oxygen demand. A very high concentration of cadmium was measured in the 2004 sediment sample. At the

downstream site ***(B-349)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. There is also a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Jimmies Creek – There are two SCDHEC monitoring stations along Jimmies Creek. At the upstream site ***(B-019)***, aquatic life uses are fully supported. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(B-786)***, aquatic life uses are partially supported based on macroinvertebrate community data.

Dutchman Creek (B-733) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Tinker Creek – There are three SCDHEC monitoring stations along Tinker Creek. Recreational uses are not supported at any site due to fecal coliform bacteria excursions. At the furthest upstream site ***(B-286)***, aquatic life uses are fully supported. Aquatic life uses are not supported at the midstream site ***(B-287)*** due to pH and turbidity excursions. There is also a significant decreasing trend in dissolved oxygen concentration. At the downstream site ***(B-336)***, aquatic life uses are fully supported based on macroinvertebrate community data; however, there is a significant decreasing trend in dissolved oxygen concentration and an increasing trend in five-day biochemical oxygen demand.

Cane Creek (B-777) – Aquatic life uses are partially supported based on macroinvertebrate community data.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
TYGER RIVER SC DEPT. CORR./CROSS ANCHOR CORR. INST. PIPE #: 001 FLOW: 0.35	SC0036773 MINOR DOMESTIC
TYGER RIVER KING ASPHALT/JOSEPH THEO MINE PIPE #: 001 FLOW: M/R	SCG730478 MINOR INDUSTRIAL
TYGER RIVER RAY BROWN/TYGER RANCH SAND PIT PIPE #: 001 FLOW: M/R	SCG730543 MINOR INDUSTRIAL
TYGER RIVER TRIBUTARY WR GRACE & CO./CL CASEY MINE PIPE #: 001 FLOW: M/R	SCG730096 MINOR INDUSTRIAL

TINKER CREEK CITY OF UNION/BELTLINE PLANT PIPE #: 001 FLOW: 0.35	SC0021202 MINOR DOMESTIC
JIMMIES CREEK TRIBUTARY WR GRACE/JOHNSON MINE PIPE #: 001 FLOW: M/R	SCG730105 MINOR INDUSTRIAL
JIMMIES CREEK TRIBUTARY CAROLINA VERMICULITE/F YOUNG MINE PIPE #: 001 FLOW: M/R	SCG730151 MINOR INDUSTRIAL
JIMMIES CREEK TRIBUTARY WR GRACE CO./ROGERS FOSTERS MINE PIPE #: 001 FLOW: M/R	SCG730440 MINOR INDUSTRIAL
TYGER RIVER TRIBUTARY WR GRACE/PROVIDENCE MINE PIPE #: 001 FLOW: M/R	SCG730004 MINOR INDUSTRIAL
CANE CREEK TRIBUTARY JERVIS B WEBB CO./CARLISLE SC PIPE #: 001 FLOW: M/R	SCG250188 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
WOODRUFF INERT & CELLULOSIC LANDFILL DOMESTIC	DWP-916 CLOSED
LANDFORD ROAD LAND CLEARING CONSTRUCTION	421002-1201 INACTIVE
SIMS JUNIOR HIGH DOMESTIC	-------- INACTIVE
CITY OF UNION LCD&YT CONSTRUCTION	441003-1701 ACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
WR GRACE & CO. JOHNSON	0834-83 VERMICULITE
WR GRACE & CO. PROVIDENCE MINE	0706-83 VERMICULITE
WR GRACE & CO. C. CASEY MINE	1017-83 VERMICULITE ORE
WR GRACE & CO. RODGERS MINE	0460-83 VERMICULITE

CHAPMAN GRADING & CONCRETE TYGER RIVER PLANT	0494-83 SAND
KING ASPHALT, INC. JOSEPH W. THEO MINE	1124-83 SAND
CAROLINA VERMICULITE CO. FANNIE YOUNG MINE	0585-83 VERMICULITE
RAY BROWN ENTERPRIZES TYGER RANCH SAND PIT	1418-87 SAND - RIVER

Growth Potential

There is an overall low potential for growth in this watershed, which contains portions of the Town of Carlisle and the City of Woodruff. Woodruff is expected to experience residential, commercial, and industrial growth. The lower portion of the watershed is effectively excluded from development by the Sumter National Forest. Union County is actively looking at creating a multi use lake (Patriot Lake) at the confluence of the Tyger River and Fairforest Creek.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Jimmies Creek** at water quality monitoring site ***B-019***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The watershed is not within a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria in Jimmies Creek include failing onsite wastewater disposal systems, urban residential runoff, leaking sewers, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Jimmies Creek of 82% in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Tinker Creek** at water quality monitoring sites ***B-286, B-287***, and ***B-336***. Union's Beltline WWTP (SC0021202) discharges into Tinker Creek just downstream of B-286. The watershed is not within a MS4 designated area. Possible sources of fecal coliform bacteria in Tinker Creek include leaking sewers, failing onsite wastewater disposal systems, cattle in creeks, urban residential runoff, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Tinker Creek of 59% (B-286), 16% (B-287), and 28% (B-336) in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **Tyger River** at water quality monitoring sites ***B-008*** and ***B-051***. Currently The SC Department of Corrections – Tyger River Corrections Facility discharges fecal coliform bacteria into the river under a NPDES permit (SC0036773). The Tyger River watershed is not within a MS4 designated area. Possible sources of fecal coliform bacteria into the Tyger River at B-008 include upstream sources, failing onsite wastewater disposal systems, cattle in creeks, pets, and wildlife. Possible sources into the Tyger River at B-051 include failing onsite wastewater disposal systems, cattle in creeks, pets, and wildlife. The TMDL specifies reductions in the load

of fecal coliform bacteria into the Tyger River of 55% (B-008) and of 53% (B-051) in order for the river to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Special Projects

Tyger River Basin Fecal Coliform TMDL Implementation Project

The Tyger River Basin has been included in the South Carolina's Section 303(d) List for impaired waterbodies for violation of the fecal coliform water quality standard. A TMDL for fecal coliform bacteria was developed for the 25 sampling sites within the watershed. Eleven of these fall within the Municipal Separate Storm Sewer System (MS4) areas. TMDLs for the remaining 15 sites call for reductions ranging from 16% to 82%. The TMDL document indicates that nonpoint sources are the main contributors of fecal coliform bacteria contamination for these sites. Four upstate counties, Soil and Water Conservation Districts, the SJWD Water District, USC Upstate have partnered with Clemson University and several other cooperators to implement the TMDL. Their project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination. The goal of the project is to reduce the fecal coliform bacteria load to the Tyger River Basin through agricultural practices, rural residential septic system repairs and urban storm water reductions. This will be done by offering cost share assistance to recruit livestock farmers to develop farm plans and implement BMPs to reduce animal waste from entering the watershed and to recruit homeowners to repair failing septic systems. The project will also educate the public about the potential sources of Fecal Coliform and means of reducing fecal coliform pollution of the watershed.

Tyger River Watershed
(03050107-05)