

03050205-03

(*Four Hole Swamp – Lower Reach*)

General Description

Watershed 03050205-03 (formerly 03050206-040, 050, 055, 070) is located in Orangeburg, Dorchester, and Berkeley Counties and consists primarily of *Four Hole Swamp* and its tributaries from Cow Castle Creek to its confluence with the Edisto River. The watershed occupies 183,907 acres of the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 33.7% forested land, 30.8% forested wetland (swamp), 29.2% agricultural land, 5.0% urban land, 0.6% barren land, 0.4% nonforested wetland (marsh), and 0.3% water.

This lowest section of Four Hole Swamp receives drainage from Providence Swamp (White Cane Branch, Cantey Branch, Ball Branch, Buck Branch, Jack Branch, Horse Range Swamp, Kettle Branch, Bachelor Branch), Target Swamp, Spring Branch, and Mill Branch. Further downstream, Home Branch drains into the swamp followed by Mill Run, Dam Branch, the Dean Swamp Watershed, Merkel Branch (Lake Merkel), Santee Branch (Rock Branch), Walnut Branch (Coldwater Branch, Little Walnut Branch, Cane Branch, Crawford Branch, Lang Branch, Deep Branch, Marshall Branch), Halfway Gut Creek, Timothy Creek, and Powder Horn Creek. There are a total of 501.4 stream miles and 931.9 acres of lake waters in this watershed. Four Hole Swamp is classified FW* (site specific classification requires DO not less than 4.0 mg/l and pH between 5.0-8.5), and the remaining streams are classified FW. The Francis Beidler Forest, a nature preserve, is another natural resource in the watershed.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
E-051	INT	FW	PROVIDENCE SWAMP AT EAST FRONTAGE ROAD TO I-95
RS-02303	RS02	FW	HORSE RANGE SWAMP AT S-38-1264
E-052	INT	FW	HORSE RANGE SWAMP AT U.S. 176
E-112	INT	FW*	FOUR HOLE SWAMP AT SC 453
E-100	W	FW*	FOUR HOLE SWAMP AT US 78, E. OF DORCHESTER
E-015A	INT	FW*	FOUR HOLE SWAMP AT S-18-19

Providence Swamp (E-051) – Aquatic life uses are not supported due to dissolved oxygen excursions and occurrences of copper in excess of the aquatic life chronic criterion. In addition, there is a significant increasing trend in five-day biochemical oxygen demand. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Horse Range Swamp – There are two SCDHEC monitoring stations along Horse Range Swamp. This is a blackwater system, characterized by naturally low dissolved oxygen concentrations. At the upstream site (**RS-02303**), aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions. At the downstream site (**E-052**), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Four Hole Swamp – There are three SCDHEC monitoring stations along this section of Four Hole Swamp. This is a blackwater system, characterized by naturally low dissolved oxygen concentrations. At the upstream site (**E-112**), aquatic life uses are not supported due to dissolved oxygen excursions. There is a significant increasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are fully supported. At the midstream site (**E-100**), aquatic life uses are fully supported. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. There is a significant increasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream site (**E-015A**), aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand.

A fish consumption advisory has been issued by the Department for mercury and includes the Four Hole Swamp within this watershed (see advisory p.41).

NPDES Permitted Activities

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
FOUR HOLE SWAMP GIANT CEMENT COMPANY, INC.	SC0022667 MINOR INDUSTRIAL
FOUR HOLE SWAMP ROSEBURG FOREST PRODUCTS/HOLLY HILL MDF	SC0001147 MINOR INDUSTRIAL
HUTTOS LAKE GIANT CEMENT COMPANY, INC.	SC0022667 MINOR INDUSTRIAL
HOME BRANCH HOLCIM (US) INC./HOLLY HILL PLT	SC0002992 MINOR INDUSTRIAL
TIMOTHY CREEK SHOWA DENKO CARBON INC.	SC0038555 MAJOR INDUSTRIAL
TIMOTHY CREEK D&A LLC/RIDGEVILLE PIT	SCG730073 MINOR INDUSTRIAL

DEEP BRANCH GIANT CEMENT CO./WASHIE ROAD SAND MINE	SCG730224 MINOR INDUSTRIAL
MARSHALL BRANCH D&A LLC/GIVENS PIT	SCG730033 MINOR INDUSTRIAL
FOUR HOLE SWAMP SANDERS BROTHERS CONSTR./BIG OAK MINE	SCG730024 MINOR INDUSTRIAL
TIMOTHY CREEK TRIBUTARY CHAMBERS-OAKRIDGE/MORGAN MINE	SCG730080 MINOR INDUSTRIAL
WALNUT BRANCH AFFORDABLE DIRT CO., INC./DIAMOND MINE #3	SCG730161 MINOR INDUSTRIAL
HOME BRANCH D&A LLC/RIDGEVILLE PIT	SCG730427 MINOR INDUSTRIAL
WALNUT BRANCH D&A LLC/HARLEY BAKER MINE	SCG730523 MINOR INDUSTRIAL
POWDER HORN CREEK WELBYS CONSTR. MATERIALS/DORCHESTER MINE	SCG730668 MINOR INDUSTRIAL
COLDWATER BRANCH BANKS CONSTRUCTION CO./TOMMY MINE	SCG730882 MINOR INDUSTRIAL
WALNUT BRANCH D&A LLC/SANDHILL MINE	SCG730934 MINOR INDUSTRIAL
MARSHALL BRANCH MCCRAW GROUP/PARKERS MINE	SCG730981 MINOR INDUSTRIAL
WALNUT BRANCH PARAGON DEVELOPMENT LLC/CROWN CASTLE MINE	SCG730985 MINOR INDUSTRIAL
FOUR HOLE SWAMP TRIBUTARY RISHER MINING & TRUCK/PLANTATION EGERIA TRACT 1	SCG731020 MINOR INDUSTRIAL
SANTEE BRANCH MARK EDWINS/EDWINS MINE	SCG731081 MINOR INDUSTRIAL
FOUR HOLE SWAMP TRIBUTARY TRI COUNTY INVESTMENTS LLC/BOYKIN RIDGE MINE	SCG730411 MINOR INDUSTRIAL
FOUR HOLE SWAMP TRIBUTARY G5 LLC/SILVER MINE TWO	SCG731168 MINOR INDUSTRIAL

Nonpoint Source Permitted Activities

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i>	<i>PERMIT#</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
GIANT CEMENT COMPANY, INC. INDUSTRIAL	183346-1601 INACTIVE
CITY OF HOLLY HILL C&D	381003-1201 INACTIVE

ROSEBURG FOREST PRODUCTS INDUSTRIAL	383304-1601 ACTIVE
SANDY PINES LANDFILL MUNICIPAL	182401-1101 CLOSED
OAKRIDGE LANDFILL, INC. MUNICIPAL	182400-1101 ACTIVE
DORCHESTER COUNTY SANITARY LANDFILL MUNICIPAL	----- CLOSED
DORCHESTER COUNTY SOUTH COMPOSTING SITE COMPOSTING	181001-3002 INACTIVE
WASTE MANAGEMENT OF S.C., INC. MUNICIPAL	----- CLOSED
VEXOR TECH. PROCESSING FACILITY INDUSTRIAL	182628-2001 ACTIVE
CHAMBERS OAKRIDGE LANDFILL COMPOSTING	182400-3001 INACTIVE
CHAMBERS OAKRIDGE LANDFILL SUBTITLE D MUNICIPAL	----- INACTIVE
OAKRIDGE C&D LANDFILL COMPOSTING	PROPOSED
AFFORDABLE WASTE C&D LANDFILL C&D	182765-1201 ACTIVE
GIANT CEMENT COMPANY, INC. C&D LANDFILL C&D	183346-1901 ACTIVE
CITY OF HOLLY HILL INDUSTRIAL	----- INACTIVE

Land Application Sites

***LAND APPLICATION SYSTEM
FACILITY NAME***

***ND#
TYPE***

SPRAY IRRIGATION
CITY OF HOLLY HILL

ND0063380
DOMESTIC

TILE FIELD
I-95 TRUCK STOP

ND0067130
DOMESTIC

Mining Activities

***MINING COMPANY
MINE NAME***

***PERMIT #
MINERAL***

GIANT CEMENT COMPANY, INC.
HARLEYVILLE MINE

0120-35
LIMESTONE

HOLNAM, INC.
MARL & CLAY QUARRY

0054-75
LIMESTONE

DORCHESTER DIRT CO., INC.
DIAMOND MINE #3

1027-35
SAND; SAND/CLAY

D&A PARTNERSHIP CARTER MINE	1047-35 SAND; SAND/CLAY
D&A PARTNERSHIP GIVENS MINE	1085-35 SAND; SAND/CLAY
SANDERS BROTHERS BIG OAK MINE	1031-35 SAND
GIANT CEMENT COMPANY, INC. WASHIE ROAD SAND MINE	1163-35 SAND
MORGAN CORPORATION MORGAN MINE	1000-35 SAND; SAND/CLAY
D&A PARTNERSHIP RIDGEVILLE MINE	0870-35 CLAY
TRI COUNTY INVESTMENTS LLC BOYKIN RIDGE MINE	1105-35 SAND
WELBYS CONSTRUCTION MATERIALS DORCHESTER MINE	1572-35 SAND; TOP SOIL
D&A LLC HARLEY BAKER MINE	1592-35 SAND/CLAY
WELBYS CONSTRUCTION MATERIALS POWDER HORN MINE	1715-35 SAND/CLAY
PARAGON SITE WORK CONTRACTORS MILLPOND MINE	1781-35 SAND; TOP SOIL

Growth Potential

There is potential for major growth in the upper portion of the watershed in the Santee/eastern Orangeburg area associated with the major intermodal port (Jafza). An estimated 7,000 to 10,000 jobs could be created within 10 years. A new full access diamond interchange is planned for I-95 near Santee and US 301 will be extended from its current end at I-95 to SC 6 east of Santee. Traffic counts, especially freight traffic counts, are expected to increase greatly. The Lower Savannah Council of Government is currently working on a Sustainable Growth Study for this area. The I-95, I-26, and US 301 area are called the Global Logistics Triangle, and is planned for major infrastructure improvements to support economic development in that region. A lower potential for growth is expected in the remainder of the watershed, which contains the Town of Holly Hill and portions of the Towns of Santee, Vance, Eutawville, and Harleyville. The Dorchester County region is estimated to build about 260 residential units between 2010 and 2035.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for Four Hole Swamp and tributaries Gramling Creek, Cow Castle Creek, **Providence Swamp**, **Horse Range Swamp**, and

Little Bull Creek at water quality monitoring sites E-022, E-050, E-051, E-052, E-059, and E-076. TMDLs determine the maximum amount of fecal coliform bacteria waterbodies can receive from pollution sources and still meet water quality standards. There are two minor permitted wastewater treatment facilities in the watershed. Orangeburg, located in western part of the watershed is considered as a potential small MS4. Probable sources of fecal coliform bacteria that were identified in the watershed are grazing animals, especially cattle with access to streams, land application of litter, failing septic systems, urban runoff, and wildlife. The TMDLs state that reductions of 4% to 73% in fecal coliform loading are necessary for the streams to meet the recreational use standard.

