

This report was prepared by the Kentucky Water Research Institute as a product of the statewide Kentucky Watershed Management process. Information presented in this report was collected from many sources. Reasonable attempts were made to ensure that information and figures are as accurate as possible, but no representation or guarantee is made as to either the correctness or suitability of information for particular purposes. All critical information should be independently verified. Please address questions or corrections to Basin Coordinator, KWRI, Rm. 233 Mining and Minerals Resources Building, University of Kentucky, Lexington, Kentucky 40506-0107.

### Summary of Basin Characteristics and Facilities

#### General Land-use Characteristics:

Total Land Area (Acres):	Acres	% of Total		
23,398				
Residential Area:	1,009	4.3	Number of Mine Permits:	0
Commercial Area:	465	2.0	Total Permitted Mining Area (Acres):	0
Industrial Area:	20	0.1	Number of Identified Wetland Areas:	48
Agricultural Area:	19,947	85.3	Total Wetland Area (Acres):	21
Rural and Wooded Area:	1,913	8.2		
Other Land-use Area:	29	0.1		

#### Withdrawal and Discharge Sites:

Number of Public Water Supplies and Water Withdrawal Sites:	1	Number of KPDES Discharge Permits:	5
Surface Water Withdrawals:	1		
Groundwater Withdrawals:	0		
No. of Potable Water Treatment Facilities:	0		

#### Sampling Site Statistics:

Number of USGS Gaging Stations:	0
Number of Kentucky Division of Water Sampling Sites:	1
Number of Kentucky Dept. of Fish and Wildlife Sampling Sites:	0
Number of US Forest Service Sampling Sites:	0
Number of US Army Corps of Engineers Sampling Sites:	0
Number of Kentucky River Watershed Watch Sampling Sites:	1
Number of Lexington-Fayette Urban Co. Gov. Sampling Sites:	0

**Watershed Indicators and Ranking Categories:**

Overall Watershed Ranking:

Protection Ranking

Observed Impacts

Potential Impacts

Restoration Ranking

Medium

Medium

Medium

High

Medium

**Protection Categories:**

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Wetland Areas	21	Acres	0 - 106	12
Surface Drinking Water Sources	1	No. of sources	0 - 14	2
Ground Drinking Water Sources	0	No. of sources	0 - 17	1
Groundwater Sensitivity	3.35	Score	2 - 5	3.21
KY Dept. of Fish and Wildlife Management Areas	0	Acres	0 - 2951	93
U.S. Forest Service Management Areas	0	Acres	0 - 155253	12,600
Kentucky State Park Areas	12	Acres	0 - 1928	42
Nature Preserves Commission Areas	0	Acres	0 - 1430	32
Nature Conservancy Areas	0	Acres	0 - 2473	28
Reference Reach Watersheds	0.00	Score	0 - 100	3.08
Outstanding Resource Watersheds	0.00	Score	0 - 0	0.00
Recognized Stream Resources	0	No. of resources	0 - 8	1
Kentucky Rivers Assessment Scores	0.76	Score	0 - 11	1.80

**Observed Impact Categories:**

*Human Health Impact Categories:*

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Flood Declarations	3	Number since 1970	0 - 10	4
Water Supply Inadequacy	0.00	Score	0 - 2	0.22
Observed Impacts to Surface Drinking Water	1.00	Score	1 - 1	1.00
Observed Impacts to Fish Consumption	1.00	Score	1 - 1	1.00
Observed Impacts to Primary Water Contact	1.00	Score	1 - 3	1.33
Contamination Sites Impacting Human Health	2	Number of sites	0 - 71	4

*Ecological Health Impact Categories:*

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Observed Impacts to Aquatic Life	1.68	Score	1 - 3	1.31
Contamination Sites Impacting Ecological Health	2	Number of sites	0 - 71	4

**Potential Impact Categories:**

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Potential Contamination Sites	9	Number of sites	1 - 121	12
Potential Pesticide Loading	31	Est. sales in tons	0 - 45	10
Potential Fertilizer Loading	322	Est. tons applied	0 - 2747	394
Agricultural Erosion Potential	4.07	Est. tons erosion / acre	0 - 9	3.20
Livestock Operations Potential Impact	8,187	Animal units	55 - 43826	7,021
KPDES Discharge Violations	38	Number of violations	0 - 541	39
KY Division of Water Citizen Complaints	5	Number of complaints	0 - 53	9
Toxic Release Inventory	0	Score	0 - 11547626	231,638
Population Change Projection	862	Number of persons	-149 - 11030	448
Population Not on Public Sewer Systems	982	Number of persons	12 - 4511	1,114
Mining Area	0	Acres	0 - 6305	355
Surface Water Runoff Potential	75.11	SCS Curve Number	60 - 79	68
KPDES Permitted Discharges	5	Number of sites	0 - 56	6

**Stream and Waterbody Use Support Summary**

<b>Total Stream Miles:</b> <input type="text" value="28.62"/>	<i>Number of Segments</i>	<i>Stream Miles Assessed</i>	<i>Miles * Fully Supportina</i>	<i>Miles * Partially Supportina</i>	<i>Miles * Not Supportina</i>	<i>Miles * Threatened</i>
<b>Segments Assessed:</b>	3	12.5	5.0	6.5	1.0	0.0
<b>Designated Uses</b>						
<b>Aquatic Life:</b>	3	12.5	5.0	6.5	1.0	0.0
<b>Primary Contact:</b>	1	5.0	5.0	0.0	0.0	0.0
<b>Fish Consumption:</b>						
<b>Drinking Water:</b>						

\* Blank values indicate no assessed segments for this category.

<b>Assessed Stream Segments and Waterbodies</b>					
<i>Stream or Waterbody Name *</i>	<i>Starting Milepoint</i>	<i>Ending Milepoint</i>	<i>Segment Length (miles)</i>	<i>Designated Uses *</i>	<i>Overall Level of Support</i>
Shallow Ford Creek	5.9	6.9	1	AL	Not Supporting
Tate Creek	6.5	11.5	5	AL, PC	Fully Supporting
Tate Creek	0	6.5	6.5	AL	Partially Supporting

\*Abbreviations: AL - Aquatic Life Support, PC - Primary Contact Recreation, SC - Secondary Contact Recreation, FC - Fish Consumption, DW - Drinking Water Supply, UT - Unnamed Tributary

<b>Causes for Nonsupport or Impairment of Designated Uses</b>					
<i>Stream or Waterbody Name *</i>	<i>Starting Milepoint</i>	<i>Ending Milepoint</i>	<i>Segment Length (miles)</i>	<i>Impaired or Threatened Designated Use</i>	<i>Level of Support</i>
Tate Creek	0	6.5	6.5	Aquatic Life Support	Partially Supporting
<i>Possible Causes of Impairment:</i> Nutrients, Organic enrichment/Low DO			<i>Possible Sources For Impairment:</i> Agriculture, Crop-related Sources, Grazing related Sources, Major Municipal Point Source, Municipal Point Sources		
Shallow Ford Creek	5.9	6.9	1	Aquatic Life Support	Not Supporting
<i>Possible Causes of Impairment:</i> Chlorine, Unionized Ammonia			<i>Possible Sources For Impairment:</i> Municipal Point Sources, Package Plants (Small Flows)		

\*Abbreviations: UT - Unnamed Tributary

Watershed Name: Tate Creek

11-Digit Watershed Identity Number: 05100205080

*Withdrawal Sites and Discharge Facilities:*

<i>Public Water Supplies and Water Withdrawal</i>			
<i>Facility</i>	<i>Origin of Source</i>	<i>Type of Facility</i>	<i>Permit ID Number</i>
ARLINGTON ASSOCIATION, ECU GOLF CSE	Surface Water	Water Withdrawal Site	WW1159

<i>KPDES Permitted Discharge Facilities</i>			<i>KPDES Site ID Number</i>
<i>Facility</i>	<i>Type of Facility</i>		
BLUEGRASS CAMPGROUND & MHP	SPORTING & RECREATIONAL CAMPS		KY0076392
DISHMAN SHELLMART	GASOLINE SERVICE STATIONS		KY0073423
HARDY OIL CO	GASOLINE SERVICE STATIONS		KY0099872
PATRICKS ENTERPRISES HOTEL	HOTELS AND MOTELS		KY0100064
RICHMOND TATES CREEK STP	SEWERAGE SYSTEMS		KY0022853

*Gaging Stations and Sampling Sites:*

<i>KY Division of Water Sampling Sites</i>	
<i>Stream Name</i>	<i>Type of Sampling</i>
Tate Creek	Biological Monitoring

<i>KY River Watershed Watch Sampling Sites</i>		
<i>Stream Name</i>	<i>KRWW Sample ID No.</i>	<i>Site Description</i>
Tates Creek	K59	Below mouth of Long Branch

**Results from 1999 KY River Watershed Watch Sampling:**

**Conventional Parameters:**

Sample ID Number: K59 Stream: Tate Creek

Physical Data (May):	
pH	0
Temperature	0
Dissolved Oxygen	14
Alkalinity	
Total Hardness	
Chlorides	
Conductivity	
Total Organic Carbon	
Total Suspended Solids	

Fecal Data (July / August):		
Coliform Count	Strep Count	Coliform/Strep Ratio
July	80	220
August		0.36

Note: Most indicators are in milligrams per liter (mg/L) which is equivalent to parts per million (ppm). Temperature is in Celsius degrees. Alkalinity and hardness are as mg/L of calcium carbonate. Bacterial counts are in colonies per 100 milliliters. Conductivity units are micro-mhos per centimeter.

**Nutrient Parameters:**

Sample ID Number: K59 Stream: Tate Creek

Ammonia		Orthophosphate as Phosphate		Sulfate	
Ammonia Nitrogen		Orthophosphate as Phosphorus			
Total Kjeldahl Nitrogen as NH3		Total Recoverable Phosphorus			
Total Kjeldahl Nitrogen as N					
Nitrate					
Nitrate Nitrogen					

Note: All indicators are in milligrams per liter (mg/L) which is equivalent to parts per million (ppm).

**Metals and Mineral Parameters:**

Sample ID Number: K59 Stream: Tate Creek

Aluminum		Calcium		Lead		Selenium		Thallium	
Antimony		Chromium		Lithium		Silicon		Vanadium	
Barium		Cobalt		Magnesium		Sodium		Zinc	
Beryllium		Copper		Manganese		Strontium			
Boron		Iron		Potassium		Sulfur			

Note: All indicators are in milligrams per liter (mg/L) which is equivalent to parts per million (ppm).

**Pesticide/Herbicide Parameters:**

Sample ID No. Stream 2,4-D Chlorpyrifos Triazines

K59	Tate Creek			
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Note: All indicators are in micrograms per liter which is equivalent to parts per billion (ppb).