

Watershed Name: Muddy Creek

11-Digit Watershed Identity Number: 05100205020

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):	43,491	Acres	% of Total		
Residential Area:	1,135		2.6	Number of Mine Permits:	0
Commercial Area:	4,581		10.5	Total Permitted Mining Area (Acres):	0
Industrial Area:	65		0.1	Number of Identified Wetland Areas:	13
Agricultural Area:	32,956		75.8	Total Wetland Area (Acres):	9
Rural and Wooded Area:	4,013		9.2		
Other Land-use Area:	705		1.6		

#### Withdrawal and Discharge Sites:

Number of Public Water Supplies and Water Withdrawal Sites:	2	Number of KPDES Discharge Permits:	10
Surface Water Withdrawals:	2		
Groundwater Withdrawals:	0		
No. of Potable Water Treatment Facilities:	1		

#### 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

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**Watershed Indicators and Ranking Categories:**

Overall Watershed Ranking:

Protection Ranking

Observed Impacts

Potential Impacts

Restoration Ranking

High

Medium

High

High

High

**Protection Categories:**

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Wetland Areas	9	Acres	0 - 106	12
Surface Drinking Water Sources	2	No. of sources	0 - 14	2
Ground Drinking Water Sources	0	No. of sources	0 - 17	1
Groundwater Sensitivity	3.08	Score	2 - 5	3.21
KY Dept. of Fish and Wildlife Management Areas	678	Acres	0 - 2951	93
U.S. Forest Service Management Areas	0	Acres	0 - 155253	12,600
Kentucky State Park Areas	0	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	0.68	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	3.00	Score	1 - 3	1.33
Contamination Sites Impacting Human Health	5	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	1.00	Score	1 - 3	1.31
Contamination Sites Impacting Ecological Health	5	Number of sites	0 - 71	4

**Potential Impact Categories:**

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Potential Contamination Sites	17	Number of sites	1 - 121	12
Potential Pesticide Loading	31	Est. sales in tons	0 - 45	10
Potential Fertilizer Loading	598	Est. tons applied	0 - 2747	394
Agricultural Erosion Potential	4.07	Est. tons erosion / acre	0 - 9	3.20
Livestock Operations Potential Impact	15,218	Animal units	55 - 43826	7,021
KPDES Discharge Violations	92	Number of violations	0 - 541	39
KY Division of Water Citizen Complaints	10	Number of complaints	0 - 53	9
Toxic Release Inventory	0	Score	0 - 11547626	231,638
Population Change Projection	157	Number of persons	-149 - 11030	448
Population Not on Public Sewer Systems	1,279	Number of persons	12 - 4511	1,114
Mining Area	0	Acres	0 - 6305	355
Surface Water Runoff Potential	79.26	SCS Curve Number	60 - 79	68
KPDES Permitted Discharges	10	Number of sites	0 - 56	6

**Stream and Waterbody Use Support Summary**

<b>Total Stream Miles:</b> <input type="text" value="51.87"/>	<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>	2	29.2	9.0	0.0	20.2	0.0
<b>Designated Uses</b>						
<b>Aquatic Life:</b>	2	29.2	29.2	0.0	0.0	0.0
<b>Primary Contact:</b>	1	20.2	0.0	0.0	20.2	0.0
<b>Fish Consumption:</b>	1	20.2	20.2	0.0	0.0	0.0
<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>
Muddy Creek	20.2	29.2	9	AL	Fully Supporting
Muddy Creek	0	20.2	20.2	AL, FC, PC	Not 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>
Muddy Creek	0	20.2	20.2	Primary Contact (Recr)	Not Supporting
<i>Possible Causes of Impairment:</i>			<i>Possible Sources For Impairment:</i>		
Pathogens			Agriculture, Grazing related Sources		

*\*Abbreviations: UT - Unnamed Tributary*

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**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>
BLUE GRASS STATION	Surface Water	Water Withdrawal Site	0340965
LEX BG ARMY DEPOT COMMANDER	Surface Water	Water Treatment Plant	0762637

<i>KPDES Permitted Discharge Facilities</i>			<i>KPDES Site ID Number</i>
<i>Facility</i>	<i>Type of Facility</i>		
A & B MARKET	GROCERY STORES	KY0095168	
AJAX MAGNETHERMIC CORP	INDUSTRIAL FURNACES AND OVENS	KY0082473	
BLUEGRASS ARMY DEPOT	NATIONAL SECURITY	KY0020737	
OVERBAYS MHP	OPER OF RES MOBILE HOME SITES	KY0089869	
RICHMOND LANDFILL	REFUSE SYSTEMS	KY0100714	
SOMEPLACE TO EAT	GROCERY STORES	KY0098175	
WACO FOODS	GROCERY STORES	KY0101303	

**Gaging Stations and Sampling Sites:**

<i>US Geological Survey and US Army Corps of Engineers Stream Gaging Stations</i>			
<i>Stream Location</i>	<i>Agency</i>	<i>Station ID Number</i>	<i>Sampling Parameter</i>
Muddy Creek	USGS	USGS03283830	Flow

<i>KY Division of Water Sampling Sites</i>	
<i>Stream Name</i>	<i>Type of Sampling</i>
Muddy Creek	Physical/Chemical Monitoring

<i>KY River Watershed Watch Sampling Sites</i>		
<i>Stream Name</i>	<i>KRWW Sample ID No.</i>	<i>Site Description</i>
Muddy Creek	K65	SR 1986 Bridge at Doyleville

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

**Conventional Parameters:**

Sample ID Number: K65 Stream: Muddy Creek

Physical Data (May):	
pH	8
Temperature	0
Dissolved Oxygen	8.2
Alkalinity	
Total Hardness	
Chlorides	
Conductivity	
Total Organic Carbon	
Total Suspended Solids	

Fecal Data (July / August):		
Coliform Count	Strep Count	Coliform/Strep Ratio
July	20	210
August		0.095

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: K65 Stream: Muddy 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: K65 Stream: Muddy 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

K65	Muddy Creek			
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Note: All indicators are in micrograms per liter which is equivalent to parts per billion (ppb).