

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):	69,935	Acres	% of Total		
Residential Area:	1,316		1.9	Number of Mine Permits:	0
Commercial Area:	570		0.8	Total Permitted Mining Area (Acres):	0
Industrial Area:	32		0.0	Number of Identified Wetland Areas:	176
Agricultural Area:	60,440		86.5	Total Wetland Area (Acres):	100
Rural and Wooded Area:	7,473		10.7		
Other Land-use Area:	63		0.1		

#### Withdrawal and Discharge Sites:

Number of Public Water Supplies and Water Withdrawal Sites:	0	Number of KPDES Discharge Permits:	6
Surface Water Withdrawals:	0		
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:	4
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:	2
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	100	Acres	0 - 106	12
Surface Drinking Water Sources	0	No. of sources	0 - 14	2
Ground Drinking Water Sources	0	No. of sources	0 - 17	1
Groundwater Sensitivity	3.36	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	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	1.65	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	1	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	2.00	Score	1 - 3	1.33
Contamination Sites Impacting Human Health	4	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	4	Number of sites	0 - 71	4

**Potential Impact Categories:**

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Potential Contamination Sites	15	Number of sites	1 - 121	12
Potential Pesticide Loading	19	Est. sales in tons	0 - 45	10
Potential Fertilizer Loading	851	Est. tons applied	0 - 2747	394
Agricultural Erosion Potential	2.90	Est. tons erosion / acre	0 - 9	3.20
Livestock Operations Potential Impact	27,701	Animal units	55 - 43826	7,021
KPDES Discharge Violations	22	Number of violations	0 - 541	39
KY Division of Water Citizen Complaints	9	Number of complaints	0 - 53	9
Toxic Release Inventory	0	Score	0 - 11547626	231,638
Population Change Projection	529	Number of persons	-149 - 11030	448
Population Not on Public Sewer Systems	1,548	Number of persons	12 - 4511	1,114
Mining Area	0	Acres	0 - 6305	355
Surface Water Runoff Potential	76.17	SCS Curve Number	60 - 79	68
KPDES Permitted Discharges	6	Number of sites	0 - 56	6

**Stream and Waterbody Use Support Summary**

<b>Total Stream Miles:</b> <input type="text" value="90.01"/>	<i>Number of Seamnts</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>
<i>Segments Assessed:</i>	5	33.6	22.2	7.5	0.0	0.0
<i>Designated Uses</i>						
<i>Aquatic Life:</i>	5	33.6	29.7	0.0	0.0	0.0
<i>Primary Contact:</i>	1	7.5	0.0	7.5	0.0	0.0
<i>Fish Consumption:</i>						
<i>Drinking Water:</i>						

\* 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>
Bark Creek	0	4.7	4.7	AL	Fully Supporting
Paint Lick Creek	7.5	22.2	14.7	AL	Fully Supporting
Paint Lick Creek	0	7.5	7.5	AL, PC	Partially Supporting
Walnut Meadows Branch	0	3.9	3.9	AL	Not Assessed
White Lick Creek	0	2.8	2.8	AL	Fully 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>
Paint Lick Creek	0	7.5	7.5	Primary Contact (Recr)	Partially Supporting
<i>Possible Causes of Impairment:</i>			<i>Possible Sources For Impairment:</i>		
Pathogens			Agriculture, Grazing related Sources		

\*Abbreviations: UT - Unnamed Tributary

Watershed Name: Paint Lick Creek

11-Digit Watershed Identity Number: 05100205100

**Withdrawal Sites and Discharge Facilities:**

<i>KPDES Permitted Discharge Facilities</i>		
<i>Facility</i>	<i>Type of Facility</i>	<i>KPDES Site ID Number</i>
ALCAN RECYCLING	2NDARY SMELT/NONFERROUS METALS	KY0091081
BEREA LANDFILL	REFUSE SYSTEMS	KY0092070
GARRARD CO BD OF ED	ELEMENTARY & SECONDARY SCHOOLS	KY0102199
PARKER SEAL	FABRICATED RUBBER PRODUCTS,NEC	KY0094854

**Gaging Stations and Sampling Sites:**

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

<i>KY Dept of Fish and Wildlife Sampling / Assessment Sites</i>					
<i>Stream Segment</i>	<i>Upstream Description</i>	<i>Downstream Description</i>	<i>Total Length of Segment</i>	<i>Upstream Mile Point</i>	<i>Downstream Mile Point</i>
White Lick Creek	Walker Branch	Mouth	8.1	2.8	0
Paint Lick Creek	Back Creek	Mouth	30.8	7.5	0
Paint Lick Creek	Lowell Branch	Back Creek	30.8	22.2	7.5
Walnut Meadow Branch	Seawage Outfall	Confluence with Paintlick	7.3	3.9	0

<i>KY River Watershed Watch Sampling Sites</i>		
<i>Stream Name</i>	<i>KRWW Sample ID No.</i>	<i>Site Description</i>
Paint Lick Creek	K37	Bradshaw Mill off Dry Bridge Road
Paint Lick Creek	K36	Paint Lick, SR 52 Bridge

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

**Conventional Parameters:**

Sample ID Number: K36 Stream: Paint Lick Creek

Physical Data (May):			
pH	7.5	Alkalinity	87
Temperature	20	Total Hardness	210
Dissolved Oxygen	5.8	Chlorides	30.2
		Conductivity	503
		Total Organic Carbon	6.0
		Total Suspended Solids	30

Fecal Data (July / August):		
Coliform Count	Strep Count	Coliform/Strep Ratio
July	10	60
August		0.17

Sample ID Number: K37 Stream: Paint Lick Creek

Physical Data (May):			
pH	8.5	Alkalinity	166
Temperature	18	Total Hardness	198
Dissolved Oxygen	9.5	Chlorides	21.4
		Conductivity	430
		Total Organic Carbon	9.7
		Total Suspended Solids	30

Fecal Data (July / August):		
Coliform Count	Strep Count	Coliform/Strep Ratio
July	50	260
August		0.19

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: K36 Stream: Paint Lick Creek

Ammonia		Orthophosphate as Phosphate	0.127	Sulfate	116
Ammonia Nitrogen		Orthophosphate as Phosphorus	0.041		
Total Kjeldahl Nitrogen as NH3	0.27	Total Recoverable Phosphorus	0.05		
Total Kjeldahl Nitrogen as N	0.22				
Nitrate					
Nitrate Nitrogen					

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

Sample ID Number: K37 Stream: Paint Lick Creek

Ammonia		Orthophosphate as Phosphate	0.065	Sulfate	31.9
Ammonia Nitrogen		Orthophosphate as Phosphorus	0.021		
Total Kjeldahl Nitrogen as NH3	0.86	Total Recoverable Phosphorus	0.13		
Total Kjeldahl Nitrogen as N	0.71				
Nitrate	0.1				
Nitrate Nitrogen	0.02				

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: K36 Stream: Paint Lick Creek

Aluminum	1.13	Calcium	47.65	Lead		Selenium		Thallium	
Antimony		Chromium		Lithium		Silicon	1.91	Vanadium	
Barium	0.04	Cobalt	0.004	Magnesium	20.38	Sodium	20.02	Zinc	0.006
Beryllium	0.001	Copper		Manganese	0.08	Strontium	0.13		
Boron	0.21	Iron	0.56	Potassium	4.04	Sulfur	31.09		

Watershed Name: Paint Lick Creek

11-Digit Watershed Identity Number: 05100205100

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

Sample ID Number: **K37** Stream: **Paint Lick Creek**

Aluminum	0.99	Calcium	46.58	Lead		Selenium		Thallium	0.07
Antimony		Chromium		Lithium		Silicon	1.78	Vanadium	
Barium	0.14	Cobalt	0.002	Magnesium	18.40	Sodium	10.77	Zinc	0.007
Beryllium	0.002	Copper		Manganese	0.37	Strontium	0.14		
Boron	0.11	Iron	0.72	Potassium	9.35	Sulfur	9.31		

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
K36	Paint Lick Creek			
K37	Paint Lick Creek			

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