

CELNRN-EC-H / Water Management Section

Location: Cumberland River, Mile 460.4

Quad: Wolf Creek Dam, KY
HUC: 05130103

Stream Flow = 3280 cfs

Profile Measurements

Sample			Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
	Depth ft		ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
Alkalinity, Tot	mg/L	48	0.0	12.6	54.7	8.8	83.0	170.1	7.1	0.6
Alkalinity, Phenol	mg/L	0								
Solids, Tot	mg/L	99.0								
Solids, Tot Diss	mg/L	97.0								
Solids, Tot Susp	mg/L	2.00								
Solids, Vol	mg/L	80.0								
Solids, Vol Diss	mg/L	78								
Solids, Vol Susp	mg/L	<2.00								
Ammonia N, Tot	mg/L	<0.200								
Kjeldahl N, Tot	mg/L	0.180								
NO3+NO2, Tot	mg/L	0.375								
Phosphorus, Tot	mg/L	<0.0200								
Phosphorus, Diss	mg/L	<0.0200								
OrthoPhosphate, D	mg/L	<0.0500								
Organic Carbon, T	mg/L	2.00								
Hardness, Tot	mg/L	71.7								
Sulfate, Tot	mg/L	31.3								
Calcium, Tot	mg/L	18.3								
Magnesium, Tot	mg/L	6.34								
Sodium, Tot	mg/L	5.27								
Potassium, Tot	mg/L	1.38								
Chloride, Tot	mg/L	3.31								
Arsenic, Tot	ug/L	<0.5								
Barium, Tot	ug/L	19.2								
Beryllium, Tot	ug/L	<0.5								
Cadmium, Tot	ug/L	<0.5								
Chromium, Tot	ug/L	<0.5								
Cobalt, Tot	ug/L	<0.5								
Copper, Tot	ug/L	0.5								
Iron, Tot	ug/L	34.1								
Iron, Diss	ug/L	<20.0								
Lead, Tot	ug/L	3.4								
Lead, Diss	ug/L	3.2								
Manganese, Tot	ug/L	10.1								
Manganese, Diss	ug/L	2.3								
Thallium, Tot	ug/L	<0.5								
Molybdenum, Tot	ug/L	<0.5								
Nickel, Tot	ug/L	1.7								
Silver, Tot	ug/L	<0.5								
Vanadium, Tot	ug/L	<0.5								
Zinc, Tot	ug/L	1.0								
Zinc, Diss	ug/L	1.5								
Antimony, Tot	ug/L	<0.5								
Aluminum, Tot	ug/L	29.5								
Aluminum, Diss	ug/L	<20.0								
Selenium, Tot	ug/L	<0.5								
Mercury, Tot	ug/L	<0.005								

United States Army Corps of Engineers

Station: 3WOL10024

State: Kentucky

County: Cumberland

Sample Date: 21 May 2012

Nashville District

Project: Wolf Creek

Latitude: 36° 47" 11'

Longitude: 85° 21" 54'

Water Surface Elevation =

CELRN-EC-H / Water Management Section

Location: Cumberland River, Mile 427.0

Quad: Burkesville, KY

HUC: 05130103

Secchi Disk =

(No Laboratory Analyses)

Profile Measurements								
Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F	
ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l	
0.0	13.7	56.7	9.5	92.1	171.9	7.2	0.6	

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 3WOL10029

Project: Wolf Creek

Location: Big South Fork Cumberland River, Mile 45.0

State: Kentucky
County: McCrearyLatitude: 36° 40" 5'
Longitude: 84° 32" 53'Quad: Barthell, KY
HUC: 05130104

Sample Date: 22 May 2012

Water Surface Elevation =

Secchi Disk =

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	0.0	Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
Alkalinity, Tot	mg/L 40	0.0	22.5	72.4	8.3	96.3	175.7	7.7	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 139								
Solids, Tot Diss	mg/L 127								
Solids, Tot Susp	mg/L 12.0								
Solids, Vol	mg/L 68.0								
Solids, Vol Diss	mg/L 66								
Solids, Vol Susp	mg/L <2.00								
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L <0.0700								
NO3+NO2, Tot	mg/L 0.101								
Phosphorus, Tot	mg/L <0.0200								
Phosphorus, Diss	mg/L <0.0200								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 2.20								
Hardness, Tot	mg/L 67.8								
Sulfate, Tot	mg/L 41.4								
Calcium, Tot	mg/L 16.1								
Magnesium, Tot	mg/L 6.68								
Sodium, Tot	mg/L 7.18								
Potassium, Tot	mg/L 1.63								
Chloride, Tot	mg/L 2.32								
Arsenic, Tot	ug/L <0.5								
Barium, Tot	ug/L 32.8								
Beryllium, Tot	ug/L <0.5								
Cadmium, Tot	ug/L <0.5								
Chromium, Tot	ug/L <0.5								
Cobalt, Tot	ug/L 0.5								
Copper, Tot	ug/L 0.7								
Iron, Tot	ug/L 278.0								
Iron, Diss	ug/L 55.4								
Lead, Tot	ug/L 1.0								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 61.7								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.5								
Molybdenum, Tot	ug/L <0.5								
Nickel, Tot	ug/L 2.0								
Silver, Tot	ug/L <0.5								
Vanadium, Tot	ug/L <0.5								
Zinc, Tot	ug/L 2.5								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L <0.5								
Aluminum, Tot	ug/L 135.0								
Aluminum, Diss	ug/L 27.7								
Selenium, Tot	ug/L <0.5								
Mercury, Tot	ug/L								

United States Army Corps of Engineers	Nashville District	CELRN-EC-H / Water Management Section
Station: 3WOL10035	Project: Wolf Creek	Location: Little South Fork Cumberland River, Mile 5.2
State: Kentucky	Latitude: 36° 48" 0'	Quad: Nevelsville, KY
County: Wayne	Longitude: 84° 35" 47'	HUC: 05130104
Sample Date: 22 May 2012	Water Surface Elevation =	Secchi Disk =

(No Laboratory Analyses)

Profile Measurements							
Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
0.0	22.3	72.2	7.6	87.6	401.3	8.1	

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 3WOL10037

Project: Wolf Creek

Location: Buck Creek, Mile 12.4

State: Kentucky

Latitude: 37° 3" 38'

Quad: Dykes, KY

County: Pulaski

Longitude: 84° 25" 35'

HUC: 05130103

Sample Date: 22 May 2012

Water Surface Elevation =

Secchi Disk =

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	0.0	Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
Alkalinity, Tot	mg/L 104	0.0	20.5	68.9	10.1	111.7	225.3	8.4	
Alkalinity, Phenol	mg/L 4								
Solids, Tot	mg/L 150								
Solids, Tot Diss	mg/L 148								
Solids, Tot Susp	mg/L 2.00								
Solids, Vol	mg/L 64.0								
Solids, Vol Diss	mg/L 62								
Solids, Vol Susp	mg/L <2.00								
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L <0.0700								
NO3+NO2, Tot	mg/L 0.755								
Phosphorus, Tot	mg/L 0.0411								
Phosphorus, Diss	mg/L 0.0341								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 2.30								
Hardness, Tot	mg/L 112								
Sulfate, Tot	mg/L 8.79								
Calcium, Tot	mg/L 34.5								
Magnesium, Tot	mg/L 6.29								
Sodium, Tot	mg/L 2.66								
Potassium, Tot	mg/L 1.83								
Chloride, Tot	mg/L 4.71								
Arsenic, Tot	ug/L <0.5								
Barium, Tot	ug/L 24.5								
Beryllium, Tot	ug/L <0.5								
Cadmium, Tot	ug/L <0.5								
Chromium, Tot	ug/L <0.5								
Cobalt, Tot	ug/L <0.5								
Copper, Tot	ug/L 0.6								
Iron, Tot	ug/L 70.6								
Iron, Diss	ug/L 22.3								
Lead, Tot	ug/L 0.9								
Lead, Diss	ug/L								
Manganese, Tot	ug/L 11.6								
Manganese, Diss	ug/L								
Thallium, Tot	ug/L <0.5								
Molybdenum, Tot	ug/L <0.5								
Nickel, Tot	ug/L 2.0								
Silver, Tot	ug/L <0.5								
Vanadium, Tot	ug/L <0.5								
Zinc, Tot	ug/L 1.3								
Zinc, Diss	ug/L								
Antimony, Tot	ug/L <0.5								
Aluminum, Tot	ug/L 68.3								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L <0.5								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3WOL20002

Project: Wolf Creek

Location: Cumberland River, Mile 461.4

State: Kentucky
County: RussellLatitude: 36° 51' 29.1"
Longitude: 85° 8' 24.7"Quad: Wolf Creek Dam, KY
HUC: 05130103

Sample Date: 21 May 2012

Water Surface Elevation = 685.5 ft

Secchi Disk = 2.4 m

Results of Laboratory Analyses

Results of Laboratory Analyses					Profile Measurements							
Sample	Depth ft	0.0	70.0	140.0	Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
Alkalinity, Tot	mg/L	50	50	48	0.0	24.8	76.6	9.8	117.8	172.8	8.8	0.7
Alkalinity, Phenol	mg/L	4	0	0	5.0	24.3	75.8	10.3	122.9	172.2	8.8	1.8
Solids, Tot	mg/L	119	124	125	10.0	23.5	74.3	10.6	125.1	170.9	8.8	3.5
Solids, Tot Diss	mg/L	117	122	123	15.0	22.5	72.6	10.6	122.8	170.0	8.8	4.9
Solids, Tot Susp	mg/L	<2.00	2.00	2.00	20.0	20.8	69.5	10.5	117.7	170.1	8.5	4.9
Solids, Vol	mg/L	65.0	70.0	67.0	25.0	17.7	63.9	9.9	104.3	169.1	7.8	4.4
Solids, Vol Diss	mg/L	63	68	65	30.0	17.0	62.6	8.4	86.8	168.4	7.4	2.5
Solids, Vol Susp	mg/L	<2.00	<2.00	<2.00	35.0	16.4	61.6	7.6	77.7	168.3	7.2	1.6
Ammonia N, Tot	mg/L	<0.200	<0.200	<0.200	40.0	15.4	59.7	7.1	70.7	170.1	7.1	0.9
Kjeldahl N, Tot	mg/L	0.230	0.150	0.160	45.0	14.2	57.5	7.1	69.6	166.0	7.0	0.8
NO3+NO2, Tot	mg/L	0.118	0.428	0.439	50.0	12.7	54.9	7.5	70.6	162.4	6.9	0.8
Phosphorus, Tot	mg/L	0.0208	<0.0200	<0.0200	55.0	11.6	52.8	7.8	71.4	161.6	6.9	0.9
Phosphorus, Diss	mg/L	<0.0200	0.0231	<0.0200	60.0	10.7	51.2	8.2	74.1	162.7	6.9	0.7
OrthoPhosphate, D	mg/L	<0.0500	<0.0500	<0.0500	65.0	10.2	50.4	8.3	74.3	166.3	6.9	0.5
Organic Carbon, T	mg/L	2.20	2.00	2.00	70.0	10.0	50.1	8.3	73.8	168.6	6.9	0.5
Hardness, Tot	mg/L	70.3	71.6	74.6	75.0	9.9	49.8	8.2	72.9	170.9	6.9	0.5
Sulfate, Tot	mg/L	31.5	31.1	32.0	80.0	9.8	49.6	8.2	72.4	171.1	6.9	0.4
Calcium, Tot	mg/L	17.7	18.2	19.1	85.0	9.6	49.2	8.2	71.8	171.9	6.9	0.4
Magnesium, Tot	mg/L	6.34	6.35	6.53	90.0	9.5	49.1	8.0	70.2	172.8	6.9	0.4
Sodium, Tot	mg/L	5.20	5.24	5.45	95.0	9.5	49.1	7.8	68.7	172.6	6.9	0.3
Potassium, Tot	mg/L	1.35	1.39	1.41	100.0	9.5	49.0	7.9	69.0	173.3	6.9	0.3
Chloride, Tot	mg/L	3.01	3.31	3.49	105.0	9.5	49.0	7.9	69.0	173.3	6.9	0.4
Arsenic, Tot	ug/L	<0.5	<0.5	<0.5	110.0	9.5	49.0	7.8	68.4	173.3	6.9	0.3
Barium, Tot	ug/L	18.4	18.5	20.7	115.0	9.4	49.0	7.8	67.9	173.2	6.9	0.3
Beryllium, Tot	ug/L	<0.5	<0.5	<0.5	120.0	9.4	49.0	7.8	67.8	173.2	6.9	0.3
Cadmium, Tot	ug/L	<0.5	<0.5	<0.5	125.0	9.4	49.0	7.7	67.5	173.8	6.9	0.3
Chromium, Tot	ug/L	<0.5	<0.5	<0.5	130.0	9.4	48.9	7.7	67.0	173.7	6.9	0.3
Cobalt, Tot	ug/L	<0.5	<0.5	<0.5	135.0	9.4	48.9	7.5	65.3	174.5	6.9	0.3
Copper, Tot	ug/L	0.7	0.8	0.8	140.0	9.4	48.9	7.4	64.6	174.3	6.9	0.3
Iron, Tot	ug/L	<20.0	32.0	37.8	145.0	9.4	48.8	7.1	61.8	174.9	6.9	0.4
Iron, Diss	ug/L	<20.0	<20.0	<20.0								
Lead, Tot	ug/L	3.2	3.3	3.9								
Lead, Diss	ug/L	3.2	3.3	3.4								
Manganese, Tot	ug/L	2.1	2.8	116.0								
Manganese, Diss	ug/L	0.7	0.9	12.2								
Thallium, Tot	ug/L	<0.5	<0.5	<0.5								
Molybdenum, Tot	ug/L	<0.5	<0.5	<0.5								
Nickel, Tot	ug/L	1.5	1.7	1.8								
Silver, Tot	ug/L	<0.5	<0.5	<0.5								
Vanadium, Tot	ug/L	<0.5	<0.5	<0.5								
Zinc, Tot	ug/L	0.8	1.3	1.7								
Zinc, Diss	ug/L	1.3	2.0	1.7								
Antimony, Tot	ug/L	<0.5	<0.5	<0.5								
Aluminum, Tot	ug/L	<20.0	32.8	33.2								
Aluminum, Diss	ug/L	<20.0	<20.0	<20.0								
Selenium, Tot	ug/L	<0.5	<0.5	<0.5								
Mercury, Tot	ug/L	<0.005	<0.005	<0.005								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3WOL20003

Project: Wolf Creek

Location: Cumberland River, Mile 469.7

State: Kentucky
County: RussellLatitude: 36° 53' 56.5'
Longitude: 85° 1' 13'Quad: Jamestown, KY
HUC: 05130103

Sample Date: 21 May 2012

Water Surface Elevation = 685.5 ft

Secchi Disk = 2.3 m

(No Laboratory Analyses)

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	25.6	78.1	9.6	117.8	176.5	8.7	1.0
5.0	25.5	77.9	9.7	118.2	176.4	8.7	1.3
10.0	25.4	77.7	9.7	118.5	176.4	8.7	1.8
15.0	23.2	73.8	11.2	130.9	170.2	8.9	3.7
20.0	22.2	71.9	11.1	127.6	169.5	8.9	5.2
25.0	18.6	65.5	10.6	113.4	171.4	8.1	3.2
30.0	17.5	63.5	9.4	97.9	173.1	7.6	3.5
35.0	16.7	62.0	7.4	76.3	177.4	7.2	1.4
40.0	16.1	61.0	7.0	71.5	183.4	7.1	0.8
45.0	15.0	58.9	6.6	65.5	188.8	7.0	0.7
50.0	12.6	54.6	7.2	68.0	166.1	6.9	0.6
55.0	11.4	52.6	7.6	69.2	163.5	6.9	0.8
60.0	10.5	50.9	7.7	69.3	163.7	6.8	0.7
65.0	10.1	50.1	7.7	68.1	165.2	6.8	0.6
70.0	9.9	49.8	7.7	67.7	166.4	6.8	0.6
75.0	9.8	49.6	7.6	67.2	166.8	6.8	0.6
80.0	9.7	49.4	7.6	66.6	168.1	6.8	0.6
85.0	9.6	49.3	7.6	66.5	168.3	6.8	0.5
90.0	9.6	49.3	7.5	65.9	169.3	6.8	0.4
95.0	9.6	49.2	7.6	66.6	171.4	6.8	0.4
100.0	9.5	49.2	7.6	66.8	172.0	6.9	0.5
105.0	9.5	49.1	7.7	67.5	172.1	6.9	0.4
110.0	9.5	49.0	7.7	67.3	172.7	6.9	0.4
115.0	9.4	49.0	7.6	66.7	174.0	6.9	0.3
120.0	9.4	48.9	7.7	66.8	176.3	6.9	0.3
125.0	9.4	48.9	7.6	66.0	176.6	6.9	0.3
130.0	9.3	48.8	7.2	62.4	177.2	6.9	0.3
135.0	9.3	48.8	6.8	59.1	177.4	6.9	0.3
140.0	9.3	48.8	6.1	53.1	178.0	6.8	0.3

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3WOL20004

Project: Wolf Creek

Location: Cumberland River, Mile 487.0

State: Kentucky
County: WayneLatitude: 36° 56" 14'
Longitude: 84° 54" 10'Quad: Jabez, KY
HUC: 05130103

Sample Date: 23 May 2012

Water Surface Elevation = 685.5 ft

Secchi Disk = 3.0 m

Results of Laboratory Analyses

Results of Laboratory Analyses				Profile Measurements									
Sample Depth ft	0.0	50.0	110.0	Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l		
Alkalinity, Tot mg/L	54	50	46	0.0	24.7	76.4	9.7	116.4	195.0	8.8	2.2		
Alkalinity, Phenol mg/L	4	0	0	5.0	24.7	76.4	9.7	116.5	194.5	8.8	2.4		
Solids, Tot mg/L	143	147	124	10.0	24.7	76.4	9.7	116.7	194.7	8.8	2.7		
Solids, Tot Diss mg/L	141	145	119	15.0	23.4	74.1	11.4	133.3	185.2	8.9	4.9		
Solids, Tot Susp mg/L	<2.00	2.00	5.00	20.0	21.5	70.7	11.6	131.6	182.9	8.8	7.6		
Solids, Vol mg/L	62.0	66.0	52.0	25.0	19.4	67.0	10.9	118.4	190.3	8.3	5.9		
Solids, Vol Diss mg/L	60	64	50	30.0	18.0	64.4	9.5	100.8	192.9	7.8	3.8		
Solids, Vol Susp mg/L	<2.00	<2.00	<2.00	35.0	16.9	62.3	7.2	73.9	196.2	7.3	1.3		
Ammonia N, Tot mg/L	<0.200	<0.200	<0.200	40.0	16.1	61.1	6.5	66.3	201.0	7.2	0.9		
Kjeldahl N, Tot mg/L	<0.0700	<0.0700	<0.0700	45.0	15.2	59.3	5.8	57.8	211.4	7.1	0.9		
NO3+NO2, Tot mg/L	0.0954	0.399	0.429	50.0	12.2	54.0	6.0	55.8	178.5	7.0	0.6		
Phosphorus, Tot mg/L	0.0338	<0.0200	<0.0200	55.0	11.0	51.9	6.2	56.3	169.8	6.9	0.8		
Phosphorus, Diss mg/L	<0.0200	<0.0200	<0.0200	60.0	10.5	50.8	6.6	59.0	166.0	6.9	0.6		
OrthoPhosphate, D mg/L	<0.0500	<0.0500	<0.0500	65.0	10.3	50.5	6.7	59.7	165.9	6.9	0.7		
Organic Carbon, T mg/L	2.20	2.10	2.20	70.0	10.1	50.1	6.9	60.8	165.8	6.9	0.6		
Hardness, Tot mg/L	77.4	74.2	69.3	75.0	10.0	49.9	7.0	61.6	165.6	6.9	0.6		
Sulfate, Tot mg/L	38.6	36.0	33.6	80.0	9.9	49.8	7.0	62.3	165.8	6.9	0.5		
Calcium, Tot mg/L	18.7	17.9	16.9	85.0	9.8	49.7	7.1	62.5	165.4	6.9	0.5		
Magnesium, Tot mg/L	7.47	7.17	6.55	90.0	9.7	49.5	7.2	63.1	166.0	6.9	0.4		
Sodium, Tot mg/L	7.21	6.40	5.41	95.0	9.7	49.5	7.2	63.5	165.7	6.9	0.4		
Potassium, Tot mg/L	1.48	1.47	1.39	100.0	9.6	49.3	7.3	63.7	166.3	6.9	0.4		
Chloride, Tot mg/L	3.05	3.09	3.19	105.0	9.6	49.3	7.3	63.6	166.5	6.9	0.4		
Arsenic, Tot ug/L	<0.5	<0.5	<0.5	110.0	9.6	49.2	7.2	62.8	167.0	6.9	0.4		
Barium, Tot ug/L	19.6	20.6	20.2	115.0	9.5	49.2	6.7	58.8	167.5	6.9	0.5		
Beryllium, Tot ug/L	<0.5	<0.5	<0.5										
Cadmium, Tot ug/L	<0.5	<0.5	<0.5										
Chromium, Tot ug/L	<0.5	<0.5	<0.5										
Cobalt, Tot ug/L	<0.5	<0.5	<0.5										
Copper, Tot ug/L	0.8	0.7	0.6										
Iron, Tot ug/L	<20.0	56.5	46.3										
Iron, Diss ug/L	<20.0	<20.0	21.4										
Lead, Tot ug/L	3.0	3.2	3.3										
Lead, Diss ug/L													
Manganese, Tot ug/L	3.3	9.1	106.0										
Manganese, Diss ug/L													
Thallium, Tot ug/L	<0.5	<0.5	<0.5										
Molybdenum, Tot ug/L	<0.5	0.9	<0.5										
Nickel, Tot ug/L	1.5	1.7	1.7										
Silver, Tot ug/L	<0.5	<0.5	<0.5										
Vanadium, Tot ug/L	<0.5	<0.5	<0.5										
Zinc, Tot ug/L	1.3	1.3	1.5										
Zinc, Diss ug/L													
Antimony, Tot ug/L	<0.5	<0.5	<0.5										
Aluminum, Tot ug/L	31.8	33.1	38.5										
Aluminum, Diss ug/L	<20.0	<20.0	20.2										
Selenium, Tot ug/L	0.5	<0.5	<0.5										
Mercury, Tot ug/L													

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3WOL20005

Project: Wolf Creek

Location: Cumberland River, Mile 509.3

State: Kentucky
County: PulaskiLatitude: 36° 58" 54'
Longitude: 84° 41" 5'Quad: Frazer, KY
HUC: 05130103

Sample Date: 23 May 2012

Water Surface Elevation = 685.5 ft

Secchi Disk = 2.9 m

Results of Laboratory Analyses

Results of Laboratory Analyses				Profile Measurements									
Sample Depth ft	0.0	50.0	100.0	Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l		
Alkalinity, Tot mg/L	64	60	50	0.0	24.9	76.8	10.0	120.3	230.0	8.8	2.0		
Alkalinity, Phenol mg/L	6	0	0	5.0	24.9	76.8	10.0	120.4	229.7	8.8	2.9		
Solids, Tot mg/L	156	156	113	10.0	24.9	76.7	9.9	119.9	229.9	8.8	3.1		
Solids, Tot Diss mg/L	154	152	111	15.0	22.3	72.2	11.4	130.7	242.9	8.5	5.3		
Solids, Tot Susp mg/L	<2.00	4.00	2.00	20.0	20.4	68.6	8.5	93.8	239.8	7.6	6.3		
Solids, Vol mg/L	61.0	46.0	39.0	25.0	18.8	65.9	7.6	81.9	239.5	7.3	3.5		
Solids, Vol Diss mg/L	59	44	37	30.0	18.0	64.4	7.8	82.6	221.4	7.3	1.7		
Solids, Vol Susp mg/L	<2.00	<2.00	<2.00	35.0	17.2	62.9	7.1	73.9	206.4	7.2	1.5		
Ammonia N, Tot mg/L	<0.200	<0.200	<0.200	40.0	16.3	61.4	6.5	66.4	216.3	7.1	1.4		
Kjeldahl N, Tot mg/L	<0.0700	<0.0700	<0.0700	45.0	15.5	59.9	5.7	57.1	220.0	7.0	1.0		
NO3+NO2, Tot mg/L	0.105	0.311	0.501	50.0	14.7	58.4	4.6	45.5	237.7	7.0	0.6		
Phosphorus, Tot mg/L	<0.0200	<0.0200	<0.0200	55.0	13.3	56.0	4.2	40.6	225.7	6.9	0.5		
Phosphorus, Diss mg/L	0.0204	<0.0200	0.0210	60.0	12.2	54.0	4.4	41.3	195.4	6.8	0.5		
OrthoPhosphate, D mg/L	<0.0500	<0.0500	<0.0500	65.0	11.1	51.9	5.3	48.0	174.5	6.8	0.5		
Organic Carbon, T mg/L	2.40	2.20	2.00	70.0	10.7	51.3	5.6	50.6	170.8	6.8	0.5		
Hardness, Tot mg/L	88.3	91.1	71.4	75.0	10.4	50.7	6.1	54.8	168.4	6.8	0.4		
Sulfate, Tot mg/L	43.9	49.8	31.2	80.0	10.2	50.3	5.9	52.7	167.4	6.8	0.4		
Calcium, Tot mg/L	21.5	21.4	17.6	85.0	10.1	50.1	5.8	51.7	167.3	6.8	0.4		
Magnesium, Tot mg/L	8.42	9.14	6.68	90.0	10.0	50.0	5.9	51.8	167.3	6.8	0.4		
Sodium, Tot mg/L	9.98	11.0	5.27	95.0	9.9	49.8	5.9	52.3	166.6	6.8	0.3		
Potassium, Tot mg/L	1.66	1.71	1.42	100.0	9.7	49.5	5.6	49.1	167.8	6.8	0.3		
Chloride, Tot mg/L	3.17	3.93	3.11	105.0	9.7	49.5	5.3	46.9	168.1	6.8	0.3		
Arsenic, Tot ug/L	<0.5	<0.5	<0.5	108.0	9.7	49.5	5.0	44.3	168.1	6.8	0.3		
Barium, Tot ug/L	22.2	26.2	19.8										
Beryllium, Tot ug/L	<0.5	<0.5	<0.5										
Cadmium, Tot ug/L	<0.5	<0.5	<0.5										
Chromium, Tot ug/L	<0.5	<0.5	<0.5										
Cobalt, Tot ug/L	<0.5	<0.5	<0.5										
Copper, Tot ug/L	0.9	0.83	0.75										
Iron, Tot ug/L	<20.0	92.8	62.2										
Iron, Diss ug/L	<20.0	<20.0	53.5										
Lead, Tot ug/L	3.2	3.5	3.4										
Lead, Diss ug/L													
Manganese, Tot ug/L	3.4	49.5	86.2										
Manganese, Diss ug/L													
Thallium, Tot ug/L	<0.5	<0.5	<0.5										
Molybdenum, Tot ug/L	<0.5	<0.5	<0.5										
Nickel, Tot ug/L	1.7	1.9	1.7										
Silver, Tot ug/L	<0.5	<0.5	<0.5										
Vanadium, Tot ug/L	<0.5	<0.5	<0.5										
Zinc, Tot ug/L	1.4	1.8	1.1										
Zinc, Diss ug/L													
Antimony, Tot ug/L	<0.5	<0.5	<0.5										
Aluminum, Tot ug/L	24.3	48.1	73.9										
Aluminum, Diss ug/L	<20.0	22.1	20.6										
Selenium, Tot ug/L	<0.5	<0.5	<0.5										
Mercury, Tot ug/L													

CELNRN-EC-H / Water Management Section

Location: Cumberland River, Mile 519.0

Quad: Somerset, KY
HUC: 05130103

Secchi Disk = 2 m

Profile Measurements

[illegible]

CELNRN-EC-H / Water Management Section

Location: Big South Fork Cumberland River, Mile 2.3

Quad: Burnside, KY
HUC: 05130104

Secchi Disk = 2.3 m

Profile Measurements

				Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
Sample	Depth ft	0.0	70.0	ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
Alkalinity, Tot	mg/L	50	46	0.0	25.6	78.1	10.3	126.5	183.5	8.6	5.2
Alkalinity, Phenol	mg/L	4	0	5.0	25.6	78.1	10.4	127.1	184.0	8.6	5.7
Solids, Tot	mg/L	133	114	10.0	25.1	77.1	10.7	130.0	191.0	8.7	3.7
Solids, Tot Diss	mg/L	130	111	15.0	24.6	76.3	11.0	132.0	193.6	8.6	5.4
Solids, Tot Susp	mg/L	3.00	3.00	20.0	20.1	68.1	7.2	78.9	229.8	7.4	4.6
Solids, Vol	mg/L	63.0	55.0	25.0	19.2	66.6	7.2	77.6	234.8	7.3	2.2
Solids, Vol Diss	mg/L	61	53	30.0	18.8	65.9	6.0	64.2	243.0	7.2	1.6
Solids, Vol Susp	mg/L	<2.00	<2.00	35.0	18.0	64.5	6.1	64.3	240.1	7.2	1.3
Ammonia N, Tot	mg/L	<0.200	<0.200	40.0	16.6	61.8	5.5	55.9	222.1	7.1	1.2
Kjeldahl N, Tot	mg/L	<0.0700	<0.0700	45.0	15.4	59.8	4.0	40.2	193.9	6.9	1.4
NO3+NO2, Tot	mg/L	0.0269	0.468	50.0	13.9	56.9	3.0	29.2	153.7	6.8	1.2
Phosphorus, Tot	mg/L	0.0222	<0.0200	55.0	12.7	54.9	2.4	22.2	146.3	6.7	1.2
Phosphorus, Diss	mg/L	<0.0200	<0.0200	60.0	11.8	53.2	2.4	22.3	149.3	6.6	0.9
OrthoPhosphate, D	mg/L	<0.0500	<0.0500	65.0	10.8	51.5	4.6	41.3	160.5	6.7	0.7
Organic Carbon, T	mg/L	2.70	2.40	70.0	10.4	50.7	4.2	37.6	161.8	6.7	0.6
Hardness, Tot	mg/L	75.1	70.6	75.0	10.1	50.2	4.3	38.1	165.5	6.7	0.7
Sulfate, Tot	mg/L	34.0	31.5	77.0	10.1	50.1	4.2	37.4	166.0	6.7	0.8
Calcium, Tot	mg/L	19.6	17.5								
Magnesium, Tot	mg/L	6.36	6.52								
Sodium, Tot	mg/L	6.27	5.04								
Potassium, Tot	mg/L	1.37	1.41								
Chloride, Tot	mg/L	3.49	2.93								
Arsenic, Tot	ug/L	<0.5	<0.5								
Barium, Tot	ug/L	23.6	20.9								
Beryllium, Tot	ug/L	<0.5	<0.5								
Cadmium, Tot	ug/L	<0.5	<0.5								
Chromium, Tot	ug/L	<0.5	<0.5								
Cobalt, Tot	ug/L	<0.5	<0.5								
Copper, Tot	ug/L	0.9	0.8								
Iron, Tot	ug/L	32.1	78.1								
Iron, Diss	ug/L	<20.0	22.6								
Lead, Tot	ug/L	3.2	3.8								
Lead, Diss	ug/L										
Manganese, Tot	ug/L	7.5	71.0								
Manganese, Diss	ug/L										
Thallium, Tot	ug/L	<0.5	<0.5								
Molybdenum, Tot	ug/L	<0.5	<0.5								
Nickel, Tot	ug/L	1.5	1.8								
Silver, Tot	ug/L	<0.5	<0.5								
Vanadium, Tot	ug/L	<0.5	<0.5								
Zinc, Tot	ug/L	1.3	2.7								
Zinc, Diss	ug/L										
Antimony, Tot	ug/L	<0.5	<0.5								
Aluminum, Tot	ug/L	42.3	39.5								
Aluminum, Diss	ug/L	<20.0	<20.0								
Selenium, Tot	ug/L	0.5	<0.5								
Mercury, Tot	ug/L										

CELNRN-EC-H / Water Management Section

Location: Pitman Creek, Mile 2.1

Quad: Somerset, KY
HUC: 05130103

Secchi Disk = 1.5 m

Profile Measurements

[illegible]

CELNRN-EC-H / Water Management Section

Location: Beaver Creek, Mile 5.3

Quad: Cumberland City, KY
HUC: 05130103

Secchi Disk = 2.6 m

Profile Measurements

Sample				Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
Sample	Depth ft	0.0	95.0	ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
Alkalinity, Tot	mg/L	50	60	0.0	25.6	78.1	9.7	119.0	176.3	8.7	0.4
Alkalinity, Phenol	mg/L	4	0	5.0	25.4	77.8	9.8	119.7	176.0	8.7	0.6
Solids, Tot	mg/L	119	132	10.0	24.2	75.6	11.0	131.0	173.2	8.9	1.1
Solids, Tot Diss	mg/L	117	130	15.0	23.0	73.4	11.4	132.9	171.3	8.9	3.4
Solids, Tot Susp	mg/L	2.00	<2.00	20.0	22.2	71.9	11.1	127.6	170.6	8.9	5.6
Solids, Vol	mg/L	58.0	91.0	25.0	19.8	67.7	10.6	116.0	178.8	8.4	4.6
Solids, Vol Diss	mg/L	56	89	30.0	17.5	63.5	7.6	79.5	177.4	7.4	1.4
Solids, Vol Susp	mg/L	<2.00	<2.00	35.0	16.5	61.7	6.5	66.8	175.9	7.2	0.9
Ammonia N, Tot	mg/L	<0.200	<0.200	40.0	15.9	60.5	6.2	62.9	177.0	7.1	0.7
Kjeldahl N, Tot	mg/L	0.360	0.140	45.0	13.8	56.8	6.5	62.7	178.9	7.0	0.5
NO3+NO2, Tot	mg/L	0.135	0.520	50.0	12.1	53.8	7.4	68.6	173.3	7.0	0.7
Phosphorus, Tot	mg/L	<0.0200	0.0202	55.0	11.2	52.1	7.6	69.4	175.7	7.0	0.6
Phosphorus, Diss	mg/L	<0.0200	<0.0200	60.0	10.7	51.2	7.0	62.9	193.9	7.0	0.5
OrthoPhosphate, D	mg/L	<0.0500	<0.0500	65.0	10.4	50.7	6.5	58.3	199.5	7.0	0.4
Organic Carbon, T	mg/L	2.30	2.00	70.0	10.1	50.3	7.1	62.8	191.0	7.0	0.3
Hardness, Tot	mg/L	72.6	84.9	75.0	10.0	49.9	7.1	62.9	190.4	7.0	0.4
Sulfate, Tot	mg/L	31.9	28.5	80.0	9.8	49.6	7.2	63.6	188.0	7.0	0.4
Calcium, Tot	mg/L	18.5	23.7	85.0	9.7	49.5	6.9	60.9	187.6	7.0	0.4
Magnesium, Tot	mg/L	6.41	6.26	90.0	9.7	49.5	6.2	54.3	191.9	6.9	0.5
Sodium, Tot	mg/L	5.24	4.92	95.0	9.7	49.4	6.1	53.5	191.1	6.9	0.4
Potassium, Tot	mg/L	1.35	1.39	100.0	9.7	49.4	6.2	54.2	190.2	6.9	0.4
Chloride, Tot	mg/L	3.01	3.70								
Arsenic, Tot	ug/L	<0.5	<0.5								
Barium, Tot	ug/L	18.8	20.4								
Beryllium, Tot	ug/L	<0.5	<0.5								
Cadmium, Tot	ug/L	<0.5	<0.5								
Chromium, Tot	ug/L	<0.5	<0.5								
Cobalt, Tot	ug/L	<0.5	<0.5								
Copper, Tot	ug/L	0.9	0.7								
Iron, Tot	ug/L	<20.0	35.2								
Iron, Diss	ug/L	<20.0	<20.0								
Lead, Tot	ug/L	3.4	3.4								
Lead, Diss	ug/L										
Manganese, Tot	ug/L	2.2	59.4								
Manganese, Diss	ug/L										
Thallium, Tot	ug/L	<0.5	<0.5								
Molybdenum, Tot	ug/L	<0.5	<0.5								
Nickel, Tot	ug/L	1.7	1.9								
Silver, Tot	ug/L	<0.5	<0.5								
Vanadium, Tot	ug/L	<0.5	<0.5								
Zinc, Tot	ug/L	1.1	1.1								
Zinc, Diss	ug/L										
Antimony, Tot	ug/L	<0.5	<0.5								
Aluminum, Tot	ug/L	26.9	30.8								
Aluminum, Diss	ug/L	<20.0	<20.0								
Selenium, Tot	ug/L	<0.5	<0.5								
Mercury, Tot	ug/L										

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 3WOL20053

Project: Wolf Creek

Location: Wolf Creek, Mile 1.7

State: Kentucky
County: RussellLatitude: 36° 57" 3'
Longitude: 84° 59" 23.5'Quad: Jabez, KY
HUC: 05130103

Sample Date: 21 May 2012

Water Surface Elevation = 685.5 ft

Secchi Disk = 1.9 m

(No Laboratory Analyses)

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	26.1	78.9	9.5	116.9	180.6	8.7	0.9
5.0	26.1	78.9	9.5	117.6	180.9	8.7	1.3
10.0	25.3	77.5	10.1	122.9	180.9	8.7	2.1
15.0	23.0	73.3	11.6	135.6	174.7	8.9	3.9
20.0	21.5	70.6	11.9	134.8	175.3	8.8	5.5
25.0	18.6	65.4	10.5	112.7	171.8	8.2	4.6
30.0	17.3	63.1	8.1	84.7	170.9	7.4	7.3
35.0	16.4	61.5	6.8	69.7	173.1	7.1	0.9
40.0	15.8	60.5	6.2	62.5	171.7	7.0	0.6
45.0	13.9	57.1	5.5	53.1	165.6	6.9	0.6
50.0	12.7	54.8	5.4	51.3	163.3	6.8	0.7
55.0	11.3	52.3	5.9	53.9	162.7	6.8	0.7
60.0	10.5	50.9	7.3	65.5	162.8	6.8	0.6
65.0	10.1	50.3	7.4	65.5	164.0	6.8	0.5
70.0	10.0	50.0	7.2	63.4	164.7	6.8	0.5
75.0	9.9	49.8	6.1	53.7	166.4	6.8	0.5
80.0	9.8	49.6	5.9	51.9	166.7	6.7	0.5
85.0	9.7	49.5	6.0	52.6	167.1	6.8	0.4
90.0	9.6	49.3	5.0	43.9	168.9	6.7	0.4

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3WOL20055

Project: Wolf Creek

Location: Fishing Creek, Mile 2.3

State: Kentucky
County: PulaskiLatitude: 37° 0" 21.5'
Longitude: 84° 42" 21.5'Quad: Delmer, KY
HUC: 05130103

Sample Date: 23 May 2012

Water Surface Elevation = 685.5 ft

Secchi Disk = 2.6 m

(No Laboratory Analyses)

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	25.1	77.2	10.0	121.5	213.2	8.9	1.5
5.0	25.0	76.9	10.0	121.4	214.0	8.9	2.1
10.0	24.9	76.8	10.1	121.7	213.7	8.9	2.7
15.0	22.0	71.5	10.9	124.2	240.9	8.4	4.9
20.0	20.1	68.2	8.6	94.4	237.4	7.6	6.3
25.0	19.1	66.4	6.0	64.5	238.9	7.2	5.2
30.0	18.3	64.9	5.2	55.4	224.1	7.1	2.8
35.0	17.2	63.0	4.1	42.9	201.8	7.0	1.5
40.0	16.4	61.4	3.5	35.7	206.0	7.0	1.4
45.0	15.7	60.3	2.9	29.4	208.3	6.9	1.1
50.0	14.3	57.8	1.1	11.1	195.0	6.8	1.2
55.0	12.9	55.3	0.3	3.0	190.1	6.8	1.3
60.0	12.0	53.5	0.4	3.9	182.5	6.7	1.0
65.0	11.1	52.0	1.4	13.0	175.7	6.7	0.8
70.0	10.4	50.7	3.1	27.5	171.8	6.7	0.9
75.0	10.2	50.4	3.4	30.1	171.2	6.7	0.8
80.0	10.2	50.3	3.6	32.1	170.4	6.7	0.8
85.0	10.2	50.3	3.6	31.8	170.6	6.7	0.8

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3WOL20056

Project: Wolf Creek

Location: Indian Creek, Mile 1.5

State: Kentucky
County: RussellLatitude: 36° 50" 34.1'
Longitude: 85° 7" 44.8'Quad: Wolf Creek Dam, KY
HUC: 05130103

Sample Date: 21 May 2012

Water Surface Elevation = 685.5 ft

Secchi Disk = 2.3 m

(No Laboratory Analyses)

Profile Measurements

Depth ft	Water Temp deg C	Water Temp deg F	Dis Oxygen mg/l	Dis Oxygen % sat	Spec Cond umho/cm	pH units	Chloro a F ug/l
0.0	25.5	77.8	9.6	116.6	172.4	8.7	0.8
5.0	25.3	77.6	9.7	117.9	172.0	8.7	1.4
10.0	23.9	74.9	10.8	127.9	170.5	8.9	2.7
15.0	22.3	72.1	11.3	129.9	169.2	8.9	3.7
20.0	21.7	71.0	10.8	122.6	170.2	8.7	5.1
25.0	18.7	65.6	10.2	108.7	167.5	8.0	6.0
30.0	17.1	62.8	8.6	89.4	168.8	7.4	3.2
35.0	16.6	61.8	7.8	80.3	168.7	7.2	1.9
40.0	15.5	59.9	7.1	71.5	169.2	7.1	1.4
45.0	14.4	57.8	7.1	69.1	166.1	7.0	0.9
50.0	12.6	54.7	7.4	69.7	163.4	6.9	0.8
55.0	11.2	52.2	7.9	72.3	163.5	6.9	0.8
60.0	10.6	51.2	8.2	73.5	164.1	6.9	0.8
65.0	10.3	50.5	8.2	73.1	166.4	6.9	0.7
70.0	10.0	50.0	8.3	73.2	168.6	6.9	0.5
75.0	9.8	49.7	8.1	71.7	170.1	6.9	0.5
80.0	9.7	49.5	8.0	70.2	171.0	6.9	0.6
85.0	9.6	49.3	7.7	67.3	172.1	6.9	0.4
90.0	9.6	49.2	7.6	66.9	172.5	6.9	0.4
95.0	9.5	49.2	7.6	66.5	173.0	6.9	0.5
100.0	9.5	49.1	7.5	66.0	173.3	6.9	0.4
105.0	9.5	49.1	7.5	65.7	173.4	6.9	0.5
110.0	9.5	49.1	7.5	65.2	173.4	6.9	0.5
115.0	9.5	49.1	7.4	64.7	173.2	6.9	0.6
120.0	9.5	49.0	7.3	64.0	173.1	6.9	0.5