United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL10001 | Project: Wolf Creek | Location: Cumberland River, Mile 460.4

State: Kentucky | Latitude: 36º 52" 19.9' | Quad: Wolf Creek Dam, KY
County: Russell | Longitude: 85º 8" 57.4' | HUC: 05130103

Sample Date: 16 Jun 2014 | Water Surface Elevation = 549.8 ft | Stream Flow = 6990 cfs

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	54
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	132
Solids, Tot Diss	mg/L	130
Solids, Tot Susp	mg/L	2.00
Solids, Vol	mg/L	55.0
Solids, Vol Diss	mg/L	35.0
Solids, Vol Susp	mg/L	<1.00
Ammonia N, Tot	mg/L	0.0452
Kjeldahl N, Tot	mg/L	2.60
NO3+NO2, Tot	mg/L	0.508
Phosphorus, Tot	mg/L	<0.007
Phosphorus, Diss	mg/L	<0.007
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.80
Hardness, Tot	mg/L	77.2
Sulfate, Tot	mg/L	31.2
Calcium, Tot	mg/L	20.5
Magnesium, Tot	mg/L	6.33
Sodium, Tot	mg/L	6.77
Potassium, Tot	mg/L	1.55
Chloride, Tot	mg/L	5.59
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	19.3
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	40.3
Iron, Diss	ug/L	25.8
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	<0.5
Manganese, Tot	ug/L	8.9
Manganese, Diss	ug/L	5.4
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	0.9
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	<0.5
Zinc, Tot	ug/L	0.9
Zinc, Diss	ug/L	1.9
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	29.0
Aluminum, Diss	ug/L	10.4
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	<0.005

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	9.4	48.9	9.3	81.5	174.0	7.0	0.7

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL10022 | Project: Wolf Creek | Location: Pitman Creek, Mile 5.6

State: Kentucky | Latitude: 37° 2" 41' | Quad: Somerset, KY
County: Pulaski | Longitude: 84° 35" 29' | HUC: 05130103

Sample Date: 18 Jun 2014 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	146
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	
Solids, Tot Diss	mg/L	
Solids, Tot Susp	mg/L	
Solids, Vol	mg/L	
Solids, Vol Diss	mg/L	
Solids, Vol Susp	mg/L	
Ammonia N, Tot	mg/L	
Kjeldahl N, Tot	mg/L	
NO3+NO2, Tot	mg/L	
Phosphorus, Tot	mg/L	0.0577
Phosphorus, Diss	mg/L	
OrthoPhosphate, D	mg/L	
Organic Carbon, T	mg/L	
Hardness, Tot	mg/L	174
Sulfate, Tot	mg/L	
Calcium, Tot	mg/L	55.8
Magnesium, Tot	mg/L	8.33
Sodium, Tot	mg/L	6.21
Potassium, Tot	mg/L	2.53
Chloride, Tot	mg/L	
Arsenic, Tot	ug/L	0.9
Barium, Tot	ug/L	34.2
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	0.8
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	0.6
Iron, Tot	ug/L	49.2
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	12.5
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	0.5
Nickel, Tot	ug/L	<0.5
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.9
Zinc, Tot	ug/L	1.3
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	39.2
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	0.5
Mercury, Tot	ug/L	

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	22.4	72.3	7.5	86.5	340.0	7.9	

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL10024 | Project: Wolf Creek | Location: Cumberland River, Mile 427.0

State: Kentucky | Latitude: 36º 47" 11' | Quad: Burkesville, KY
County: Cumberland | Longitude: 85º 21" 54' | HUC: 05130103

Sample Date: 16 Jun 2014 | Water Surface Elevation = | Stream Flow =

(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	10.7	51.3	10.5	94.9	174.0	7.4	

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL10026 | Project: Wolf Creek | Location: Pitman Creek, Mile 4.9

State: Kentucky | Latitude: 37° 2" 40' | Quad: Somerset, KY
County: Pulaski | Longitude: 84° 35" 51' | HUC: 05130103

Sample Date: 18 Jun 2014 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	140
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	324
Solids, Tot Diss	mg/L	321
Solids, Tot Susp	mg/L	3.00
Solids, Vol	mg/L	120
Solids, Vol Diss	mg/L	120
Solids, Vol Susp	mg/L	2.00
Ammonia N, Tot	mg/L	0.0657
Kjeldahl N, Tot	mg/L	3.30
NO3+NO2, Tot	mg/L	5.38
Phosphorus, Tot	mg/L	0.868
Phosphorus, Diss	mg/L	0.857
OrthoPhosphate, D	mg/L	0.839
Organic Carbon, T	mg/L	3.10
Hardness, Tot	mg/L	181
Sulfate, Tot	mg/L	25.9
Calcium, Tot	mg/L	57.1
Magnesium, Tot	mg/L	9.24
Sodium, Tot	mg/L	17.2
Potassium, Tot	mg/L	3.84
Chloride, Tot	mg/L	23.4
Arsenic, Tot	ug/L	4.1
Barium, Tot	ug/L	35.5
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	1.7
Iron, Tot	ug/L	64.8
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	24.3
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	0.8
Nickel, Tot	ug/L	0.8
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.9
Zinc, Tot	ug/L	11.4
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	42.2
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	0.8
Mercury, Tot	ug/L	

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	22.4	72.3	7.6	87.7	415.0	7.8	

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 | Latitude: 36° 40" 5' | Quad: Barthell, KY
County: McCreary | Longitude: 84° 32" 53' | HUC: 05130104

Sample Date: 17 Jun 2014 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	40
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	110
Solids, Tot Diss	mg/L	110
Solids, Tot Susp	mg/L	<2.00
Solids, Vol	mg/L	45.0
Solids, Vol Diss	mg/L	40.0
Solids, Vol Susp	mg/L	2.00
Ammonia N, Tot	mg/L	0.0353
Kjeldahl N, Tot	mg/L	3.00
NO3+NO2, Tot	mg/L	0.162
Phosphorus, Tot	mg/L	<0.007
Phosphorus, Diss	mg/L	<0.01
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.60
Hardness, Tot	mg/L	55.2
Sulfate, Tot	mg/L	27.1
Calcium, Tot	mg/L	13.7
Magnesium, Tot	mg/L	5.12
Sodium, Tot	mg/L	6.50
Potassium, Tot	mg/L	1.61
Chloride, Tot	mg/L	4.96
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	30.2
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	154.0
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	21.6
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	0.8
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	<0.5
Zinc, Tot	ug/L	<0.5
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	23.5
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

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	27.2	81.0	8.4	105.5	142.0	7.7	

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL10030 | Project: Wolf Creek | Location: Cumberland River, Mile 562.4

State: Kentucky | Latitude: 36° 50" 14' | Quad: Cumberland Falls, KY
County: McCreary | Longitude: 84° 20" 39' | HUC: 05130101

Sample Date: 17 Jun 2014 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	134
Alkalinity, Phenol	mg/L	3
Solids, Tot	mg/L	468
Solids, Tot Diss	mg/L	466
Solids, Tot Susp	mg/L	2.00
Solids, Vol	mg/L	160
Solids, Vol Diss	mg/L	150
Solids, Vol Susp	mg/L	<1.00
Ammonia N, Tot	mg/L	0.0376
Kjeldahl N, Tot	mg/L	2.70
NO3+NO2, Tot	mg/L	0.220
Phosphorus, Tot	mg/L	<0.007
Phosphorus, Diss	mg/L	<0.01
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.60
Hardness, Tot	mg/L	183
Sulfate, Tot	mg/L	144
Calcium, Tot	mg/L	37.6
Magnesium, Tot	mg/L	21.8
Sodium, Tot	mg/L	52.2
Potassium, Tot	mg/L	3.38
Chloride, Tot	mg/L	10.4
Arsenic, Tot	ug/L	0.6
Barium, Tot	ug/L	47.5
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	1.0
Iron, Tot	ug/L	80.1
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	42.5
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	1.1
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	<0.5
Zinc, Tot	ug/L	<0.5
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	33.0
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

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	29.8	85.6	8.7	114.1	550.0	8.4	

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: 17 Jun 2014 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	134
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	394
Solids, Tot Diss	mg/L	394
Solids, Tot Susp	mg/L	<2.00
Solids, Vol	mg/L	110
Solids, Vol Diss	mg/L	90.0
Solids, Vol Susp	mg/L	<1.00
Ammonia N, Tot	mg/L	0.0513
Kjeldahl N, Tot	mg/L	3.00
NO3+NO2, Tot	mg/L	0.162
Phosphorus, Tot	mg/L	<0.007
Phosphorus, Diss	mg/L	<0.01
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.20
Hardness, Tot	mg/L	229
Sulfate, Tot	mg/L	92.3
Calcium, Tot	mg/L	71.3
Magnesium, Tot	mg/L	12.5
Sodium, Tot	mg/L	24.3
Potassium, Tot	mg/L	1.53
Chloride, Tot	mg/L	37.5
Arsenic, Tot	ug/L	0.9
Barium, Tot	ug/L	34.5
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	0.5
Iron, Tot	ug/L	14.1
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	41.0
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	1.4
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	<0.5
Zinc, Tot	ug/L	<0.5
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	29.1
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

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	26.2	79.2	8.0	98.8	525.0	7.9	

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Station: 3WOL10036 | Project: Wolf Creek | Location: Rockcastle River, Mile 24.4

State: Kentucky | Latitude: 37° 10" 17' | Quad: Billows, KY
County: Rockcastle | Longitude: 84° 17" 45' | HUC: 05130102

Sample Date: 17 Jun 2014 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	94
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	172
Solids, Tot Diss	mg/L	172
Solids, Tot Susp	mg/L	<2.00
Solids, Vol	mg/L	100
Solids, Vol Diss	mg/L	90.0
Solids, Vol Susp	mg/L	3.00
Ammonia N, Tot	mg/L	0.0437
Kjeldahl N, Tot	mg/L	3.10
NO3+NO2, Tot	mg/L	0.287
Phosphorus, Tot	mg/L	<0.007
Phosphorus, Diss	mg/L	<0.01
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.30
Hardness, Tot	mg/L	113
Sulfate, Tot	mg/L	23.2
Calcium, Tot	mg/L	33.6
Magnesium, Tot	mg/L	7.02
Sodium, Tot	mg/L	6.52
Potassium, Tot	mg/L	2.11
Chloride, Tot	mg/L	9.80
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	24.8
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	0.65
Iron, Tot	ug/L	53.9
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	28.8
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	1.0
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	<0.5
Zinc, Tot	ug/L	<0.5
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	16.4
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

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	21.5	70.7	10.1	114.6	274.0	7.9	

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: 18 Jun 2014 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	120
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	162
Solids, Tot Diss	mg/L	160
Solids, Tot Susp	mg/L	2.00
Solids, Vol	mg/L	90.0
Solids, Vol Diss	mg/L	80.0
Solids, Vol Susp	mg/L	3.00
Ammonia N, Tot	mg/L	0.0564
Kjeldahl N, Tot	mg/L	3.30
NO3+NO2, Tot	mg/L	0.312
Phosphorus, Tot	mg/L	<0.007
Phosphorus, Diss	mg/L	0.010
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.40
Hardness, Tot	mg/L	128
Sulfate, Tot	mg/L	9.40
Calcium, Tot	mg/L	38.9
Magnesium, Tot	mg/L	7.46
Sodium, Tot	mg/L	4.38
Potassium, Tot	mg/L	2.39
Chloride, Tot	mg/L	8.05
Arsenic, Tot	ug/L	0.6
Barium, Tot	ug/L	30.1
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	32.3
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	14.9
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	<0.5
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.6
Zinc, Tot	ug/L	<0.5
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	27.5
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

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	24.2	75.6	7.4	88.2	252.0	8.0	

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL10040 | Project: Wolf Creek | Location: Beaver Creek, Mile 21.3

State: Kentucky | Latitude: 36° 49" 5' | Quad: Parnell, KY
County: Wayne | Longitude: 84° 52" 47' | HUC: 05130103

Sample Date: 18 Jun 2014 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	156
Alkalinity, Phenol	mg/L	2
Solids, Tot	mg/L	292
Solids, Tot Diss	mg/L	289
Solids, Tot Susp	mg/L	3.00
Solids, Vol	mg/L	30.0
Solids, Vol Diss	mg/L	20.0
Solids, Vol Susp	mg/L	2.00
Ammonia N, Tot	mg/L	0.0567
Kjeldahl N, Tot	mg/L	3.20
NO3+NO2, Tot	mg/L	2.41
Phosphorus, Tot	mg/L	0.0579
Phosphorus, Diss	mg/L	0.055
OrthoPhosphate, D	mg/L	0.0504
Organic Carbon, T	mg/L	1.60
Hardness, Tot	mg/L	199
Sulfate, Tot	mg/L	27.3
Calcium, Tot	mg/L	65.8
Magnesium, Tot	mg/L	8.40
Sodium, Tot	mg/L	10.7
Potassium, Tot	mg/L	1.65
Chloride, Tot	mg/L	18.4
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	32.9
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	0.6
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	0.5
Iron, Tot	ug/L	37.7
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	13.2
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	0.5
Nickel, Tot	ug/L	<0.5
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	<0.5
Zinc, Tot	ug/L	3.1
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	24.1
Aluminum, Diss	ug/L	
Selenium, Tot	ug/L	<0.5
Mercury, Tot	ug/L	

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	22.9	73.2	10.5	122.3	400.0	8.3	

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL20002 | Project: Wolf Creek | Location: Cumberland River, Mile 461.4

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

Sample Date: 16 Jun 2014 | Water Surface Elevation = 719.9 ft | Secchi Disk = 5.3 m

Results of Laboratory Analyses

Sample Depth ft		0.0	80.0	170.0
Alkalinity, Tot	mg/L	56	52	54
Alkalinity, Phenol	mg/L	2	0	0
Solids, Tot	mg/L	126	142	148
Solids, Tot Diss	mg/L	126	139	148
Solids, Tot Susp	mg/L	<2.00	3.00	<2.00
Solids, Vol	mg/L	80.0	55.0	35.0
Solids, Vol Diss	mg/L	80.0	50.0	30.0
Solids, Vol Susp	mg/L	<1.00	<1.00	4.00
Ammonia N, Tot	mg/L	0.0288	0.0280	0.0276
Kjeldahl N, Tot	mg/L	2.40	2.20	2.80
NO3+NO2, Tot	mg/L	0.130	0.472	0.540
Phosphorus, Tot	mg/L	<0.007	<0.007	<0.007
Phosphorus, Diss	mg/L	<0.007	<0.007	<0.007
OrthoPhosphate, D	mg/L	<0.05	<0.05	<0.05
Organic Carbon, T	mg/L	2.90	2.30	2.50
Hardness, Tot	mg/L	75.9	76.3	79.6
Sulfate, Tot	mg/L	29.7	30.3	29.6
Calcium, Tot	mg/L	20.2	20.2	21.5
Magnesium, Tot	mg/L	6.19	6.28	6.27
Sodium, Tot	mg/L	5.95	6.32	6.48
Potassium, Tot	mg/L	1.49	1.53	1.60
Chloride, Tot	mg/L	4.30	5.09	5.31
Arsenic, Tot	ug/L	<0.5	<0.5	<0.5
Barium, Tot	ug/L	21.3	21.4	21.1
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	<0.5	<0.5	<0.5
Iron, Tot	ug/L	<7.0	17.3	42.4
Iron, Diss	ug/L	<7.0	11.2	27.1
Lead, Tot	ug/L	<0.5	<0.5	<0.5
Lead, Diss	ug/L	<0.5	<0.5	<0.5
Manganese, Tot	ug/L	0.8	1.3	27.3
Manganese, Diss	ug/L	0.5	1.0	8.0
Thallium, Tot	ug/L	<0.5	<0.5	<0.5
Molybdenum, Tot	ug/L	<0.5	<0.5	<0.5
Nickel, Tot	ug/L	0.7	0.7	0.9
Silver, Tot	ug/L	<0.5	<0.5	<0.5
Vanadium, Tot	ug/L	<0.5	<0.5	<0.5
Zinc, Tot	ug/L	<0.5	<0.5	0.7
Zinc, Diss	ug/L	<0.5	<0.5	0.5
Antimony, Tot	ug/L	<0.5	<0.5	<0.5
Aluminum, Tot	ug/L	<7.0	<7.0	33.2
Aluminum, Diss	ug/L	<7.0	<7.0	13.3
Selenium, Tot	ug/L	<0.5	<0.5	<0.5
Mercury, Tot	ug/L	0.122	0.044	0.082

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	27.0	80.6	8.9	111.4	176.0	8.4	0.8
5.0	25.4	77.7	9.2	112.1	175.0	8.2	1.1
10.0	24.9	76.8	9.3	112.3	174.0	8.2	1.9
15.0	24.5	76.1	9.3	111.5	174.0	8.2	2.8
20.0	23.7	74.7	9.1	107.5	175.0	8.1	5.6
25.0	18.4	65.1	8.5	90.8	170.0	7.8	4.9
30.0	17.1	62.8	7.4	77.0	171.0	7.7	4.0
35.0	15.7	60.3	6.4	64.7	171.0	7.5	1.1
40.0	15.1	59.2	6.3	62.9	171.0	7.4	1.1
45.0	14.7	58.5	6.3	62.3	170.0	7.3	1.0
50.0	13.9	57.0	6.8	66.1	171.0	7.3	0.8
55.0	12.8	55.0	7.5	71.2	172.0	7.3	0.8
60.0	11.9	53.4	8.1	75.3	172.0	7.3	0.8
65.0	10.8	51.4	8.7	78.8	172.0	7.3	0.8
70.0	10.1	50.2	9.1	81.1	173.0	7.3	0.7
75.0	9.3	48.7	9.2	80.4	172.0	7.2	0.7
80.0	8.8	47.8	9.3	80.3	172.0	7.2	0.7
85.0	8.5	47.3	9.3	79.7	172.0	7.1	0.7
90.0	8.1	46.6	9.2	78.0	173.0	7.1	0.7
95.0	7.9	46.2	9.2	77.7	173.0	7.1	0.7
100.0	7.8	46.0	9.1	76.6	173.0	7.1	0.7
105.0	7.6	45.7	8.9	74.6	173.0	7.1	0.7
110.0	7.4	45.3	8.7	72.5	175.0	7.0	0.7
115.0	7.4	45.3	8.7	72.5	176.0	7.0	0.6
120.0	7.2	45.0	8.5	70.5	177.0	7.0	0.7
125.0	7.1	44.8	8.5	70.3	177.0	7.0	0.6
130.0	7.1	44.8	8.4	69.5	177.0	6.9	0.6
135.0	7.1	44.8	8.3	68.6	177.0	6.9	0.6
140.0	7.1	44.8	8.3	68.6	177.0	6.9	0.6
145.0	7.1	44.8	8.3	68.6	177.0	6.8	0.6
150.0	7.1	44.8	8.2	67.8	177.0	6.8	0.6
155.0	7.1	44.8	8.3	68.6	177.0	6.8	0.6
160.0	7.0	44.6	8.3	68.5	177.0	6.8	0.6
165.0	7.0	44.6	8.2	67.6	178.0	6.8	0.6
170.0	7.0	44.6	8.1	66.8	178.0	6.8	0.6
175.0	7.0	44.6	8.0	66.0	178.0	6.8	0.6
179.0	7.0	44.6	7.9	65.2	178.0	6.8	0.7

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL20003 | Project: Wolf Creek | Location: Cumberland River, Mile 469.7

State: Kentucky | Latitude: 36° 53" 56.5' | Quad: Jamestown, KY
County: Russell | Longitude: 85° 1" 13' | HUC: 05130103

Sample Date: 16 Jun 2014 | Water Surface Elevation = 719.9 ft | Secchi Disk = 5.3 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	27.1	80.8	8.9	111.6	175.0	8.5	0.7
5.0	26.0	78.8	9.2	113.2	175.0	8.4	1.0
10.0	25.9	78.6	9.2	113.0	174.0	8.4	1.5
15.0	25.6	78.1	9.1	111.2	174.0	8.4	2.0
20.0	23.3	73.9	9.6	112.6	171.0	8.3	3.7
25.0	20.1	68.2	9.3	102.7	168.0	7.7	5.3
30.0	17.6	63.7	7.5	78.9	160.0	7.4	2.8
35.0	15.5	59.9	5.8	58.4	153.0	7.2	1.4
40.0	14.9	58.8	5.6	55.6	157.0	7.1	0.9
45.0	14.1	57.4	6.4	62.5	165.0	7.1	0.8
50.0	13.6	56.5	6.9	66.6	170.0	7.1	0.8
55.0	12.7	54.9	7.6	71.9	172.0	7.1	0.8
60.0	12.2	54.0	7.9	73.9	172.0	7.1	0.8
65.0	11.4	52.5	8.3	76.3	172.0	7.0	0.8
70.0	10.5	50.9	8.6	77.4	172.0	7.0	0.8
75.0	9.6	49.3	8.8	77.5	176.0	7.0	0.7
80.0	9.0	48.2	8.7	75.5	173.0	7.0	0.7
85.0	8.7	47.7	8.7	74.9	174.0	7.0	0.6
90.0	8.2	46.8	8.4	71.4	171.0	7.0	0.6
95.0	8.0	46.4	8.4	71.1	170.0	7.0	0.6
100.0	7.4	45.3	8.2	68.3	169.0	7.0	0.6
105.0	7.3	45.1	7.9	65.7	169.0	6.9	0.6
110.0	7.2	45.0	7.8	64.7	170.0	6.9	0.6
115.0	7.2	45.0	7.8	64.7	170.0	6.9	0.6
120.0	7.1	44.8	8.0	66.2	171.0	6.9	0.6
125.0	7.0	44.6	8.1	66.8	172.0	6.9	0.6
130.0	7.0	44.6	8.1	66.8	172.0	6.9	0.6
135.0	7.0	44.6	8.2	67.6	172.0	6.9	0.6
140.0	6.9	44.4	8.1	66.6	172.0	6.8	0.6
145.0	6.9	44.4	8.1	66.6	172.0	6.8	0.6
150.0	6.9	44.4	8.1	66.6	173.0	6.8	0.6
155.0	6.9	44.4	8.0	65.8	174.0	6.8	0.6
160.0	6.9	44.4	8.0	65.8	174.0	6.8	0.6
165.0	6.9	44.4	8.0	65.8	175.0	6.8	0.6
170.0	6.9	44.4	7.9	65.0	176.0	6.7	0.6
175.0	6.9	44.4	7.9	65.0	175.0	6.7	0.6

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL20004 | Project: Wolf Creek | Location: Cumberland River, Mile 487.0

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

Sample Date: 18 Jun 2014 | Water Surface Elevation = 719.9 ft | Secchi Disk = 6.1 m

Results of Laboratory Analyses

Sample Depth ft		0.0	130.0
Alkalinity, Tot	mg/L	54	50
Alkalinity, Phenol	mg/L	1	0
Solids, Tot	mg/L	132	114
Solids, Tot Diss	mg/L	132	114
Solids, Tot Susp	mg/L	<2.00	<2.00
Solids, Vol	mg/L	80.0	70.0
Solids, Vol Diss	mg/L	70.0	60.0
Solids, Vol Susp	mg/L	<1.00	3.00
Ammonia N, Tot	mg/L	0.0458	0.0778
Kjeldahl N, Tot	mg/L	2.90	2.80
NO3+NO2, Tot	mg/L	0.103	0.541
Phosphorus, Tot	mg/L	<0.007	0.0106
Phosphorus, Diss	mg/L	<0.01	<0.01
OrthoPhosphate, D	mg/L	<0.05	<0.05
Organic Carbon, T	mg/L	2.40	2.20
Hardness, Tot	mg/L	74.1	73.6
Sulfate, Tot	mg/L	30.3	30.7
Calcium, Tot	mg/L	19.4	19.0
Magnesium, Tot	mg/L	6.25	6.38
Sodium, Tot	mg/L	5.98	6.50
Potassium, Tot	mg/L	1.46	1.51
Chloride, Tot	mg/L	4.04	5.20
Arsenic, Tot	ug/L	<0.5	<0.5
Barium, Tot	ug/L	18.4	19.1
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	0.64	0.6
Iron, Tot	ug/L	<7.0	74.0
Iron, Diss	ug/L		
Lead, Tot	ug/L	<0.5	<0.5
Lead, Diss	ug/L		
Manganese, Tot	ug/L	2.1	53.1
Manganese, Diss	ug/L		
Thallium, Tot	ug/L	<0.5	<0.5
Molybdenum, Tot	ug/L	<0.5	<0.5
Nickel, Tot	ug/L	0.7	0.9
Silver, Tot	ug/L	<0.5	<0.5
Vanadium, Tot	ug/L	<0.5	<0.5
Zinc, Tot	ug/L	1.1	0.9
Zinc, Diss	ug/L		
Antimony, Tot	ug/L	<0.5	<0.5
Aluminum, Tot	ug/L	<7.0	73.4
Aluminum, Diss	ug/L		
Selenium, Tot	ug/L	<0.5	<0.5
Mercury, Tot	ug/L		

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	27.7	81.9	8.6	109.0	175.0	8.5	0.6
5.0	27.5	81.5	8.8	111.1	174.0	8.2	0.8
10.0	26.2	79.2	9.0	111.2	174.0	8.2	1.1
15.0	25.1	77.2	9.0	109.0	176.0	8.0	1.7
20.0	23.5	74.3	8.6	101.3	181.0	7.5	2.3
25.0	20.8	69.4	8.0	89.6	183.0	7.1	3.5
30.0	17.9	64.2	6.8	71.9	166.0	7.0	2.5
35.0	15.8	60.4	5.8	58.7	141.0	7.0	1.5
40.0	14.9	58.8	6.0	59.6	138.0	7.0	1.3
45.0	14.3	57.7	6.2	60.8	141.0	7.0	1.3
50.0	13.6	56.5	6.5	62.8	155.0	7.0	1.1
55.0	12.8	55.0	6.9	65.5	167.0	7.0	1.0
60.0	12.0	53.6	7.6	70.8	171.0	7.0	0.9
65.0	10.7	51.3	8.1	73.2	171.0	6.9	0.8
70.0	9.9	49.8	8.1	71.8	170.0	6.9	0.8
75.0	9.5	49.1	7.9	69.4	170.0	6.9	0.7
80.0	8.6	47.5	7.6	65.3	170.0	6.9	0.8
85.0	8.2	46.8	7.5	63.8	168.0	6.9	0.9
90.0	8.1	46.6	7.5	63.6	169.0	6.9	0.9
95.0	8.0	46.4	7.5	63.5	168.0	6.9	0.8
100.0	7.9	46.2	7.5	63.3	168.0	6.8	0.8
105.0	7.8	46.0	7.5	63.1	168.0	6.8	0.8
110.0	7.7	45.9	7.5	63.0	168.0	6.8	0.7
115.0	7.4	45.3	7.6	63.3	168.0	6.8	0.7
120.0	7.3	45.1	7.7	64.0	168.0	6.8	0.7
125.0	7.2	45.0	7.6	63.0	168.0	6.8	0.7
130.0	7.2	45.0	7.6	63.0	167.0	6.7	0.6
135.0	7.2	45.0	7.6	63.0	168.0	6.7	0.6
140.0	7.2	45.0	7.6	63.0	168.0	6.7	0.7
145.0	7.2	45.0	7.6	63.0	168.0	6.7	0.6

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL20005 | Project: Wolf Creek | Location: Cumberland River, Mile 509.3

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

Sample Date: 17 Jun 2014 | Water Surface Elevation = 719.9 ft | Secchi Disk = 2.8 m

Results of Laboratory Analyses

Sample Depth ft		0.0	130.0
Alkalinity, Tot	mg/L	58	50
Alkalinity, Phenol	mg/L	4	0
Solids, Tot	mg/L	114	132
Solids, Tot Diss	mg/L	114	132
Solids, Tot Susp	mg/L	<2.00	<2.00
Solids, Vol	mg/L	95.0	50.0
Solids, Vol Diss	mg/L	85.0	45.0
Solids, Vol Susp	mg/L	3.00	2.00
Ammonia N, Tot	mg/L	0.0455	0.0471
Kjeldahl N, Tot	mg/L	3.00	2.80
NO3+NO2, Tot	mg/L	0.0186	0.556
Phosphorus, Tot	mg/L	<0.007	<0.007
Phosphorus, Diss	mg/L	<0.01	<0.01
OrthoPhosphate, D	mg/L	<0.05	<0.05
Organic Carbon, T	mg/L	2.70	2.00
Hardness, Tot	mg/L	77.0	74.2
Sulfate, Tot	mg/L	31.7	31.4
Calcium, Tot	mg/L	20.0	18.9
Magnesium, Tot	mg/L	6.58	6.58
Sodium, Tot	mg/L	6.66	6.42
Potassium, Tot	mg/L	1.48	1.46
Chloride, Tot	mg/L	3.98	5.01
Arsenic, Tot	ug/L	<0.5	<0.5
Barium, Tot	ug/L	18.9	19.3
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	0.6	0.5
Iron, Tot	ug/L	<7.0	52.4
Iron, Diss	ug/L		
Lead, Tot	ug/L	<0.5	<0.5
Lead, Diss	ug/L		
Manganese, Tot	ug/L	2.3	74.4
Manganese, Diss	ug/L		
Thallium, Tot	ug/L	<0.5	<0.5
Molybdenum, Tot	ug/L	<0.5	<0.5
Nickel, Tot	ug/L	0.9	0.9
Silver, Tot	ug/L	<0.5	<0.5
Vanadium, Tot	ug/L	<0.5	<0.5
Zinc, Tot	ug/L	1.6	<0.5
Zinc, Diss	ug/L		
Antimony, Tot	ug/L	<0.5	<0.5
Aluminum, Tot	ug/L	<7.0	36.4
Aluminum, Diss	ug/L		
Selenium, Tot	ug/L	<0.5	<0.5
Mercury, Tot	ug/L		

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	27.3	81.1	9.5	119.6	179.0	8.7	1.7
5.0	27.2	81.0	9.5	119.4	179.0	8.7	1.5
10.0	26.8	80.2	9.8	122.3	179.0	8.7	2.8
15.0	26.6	79.9	9.8	121.9	180.0	8.7	3.1
20.0	24.8	76.6	8.9	107.3	185.0	8.2	3.2
25.0	19.5	67.1	5.5	60.1	198.0	7.4	3.2
30.0	16.7	62.1	5.6	57.8	167.0	7.2	1.8
35.0	15.5	59.9	5.8	58.4	154.0	7.1	1.9
40.0	14.3	57.7	5.6	54.9	140.0	7.1	1.6
45.0	13.8	56.8	6.0	58.2	140.0	7.1	1.5
50.0	12.8	55.0	6.8	64.5	157.0	7.1	1.6
55.0	11.0	51.8	6.8	61.9	165.0	7.1	1.3
60.0	11.4	52.5	7.5	68.9	168.0	7.1	1.3
65.0	10.8	51.4	8.0	72.5	170.0	7.1	1.2
70.0	10.0	50.0	8.1	72.0	170.0	7.0	1.1
75.0	9.2	48.6	7.8	68.0	171.0	7.0	0.9
80.0	8.7	47.7	7.3	62.9	172.0	6.9	0.9
85.0	8.5	47.3	7.1	60.8	172.0	6.9	0.9
90.0	8.4	47.1	7.0	59.8	171.0	6.9	0.9
95.0	8.3	46.9	6.6	56.3	171.0	6.9	0.8
100.0	8.1	46.6	7.1	60.2	171.0	6.9	0.8
105.0	8.0	46.4	7.3	61.8	170.0	6.8	0.8
110.0	7.9	46.2	7.2	60.8	169.0	6.8	0.7
115.0	7.9	46.2	7.2	60.8	169.0	6.8	0.7
120.0	7.8	46.0	7.0	58.9	168.0	6.8	0.7
125.0	7.6	45.7	6.8	57.0	168.0	6.8	0.6
130.0	7.6	45.7	6.6	55.3	168.0	6.7	0.6
135.0	7.6	45.7	6.5	54.4	168.0	6.7	0.6
138.0	7.6	45.7	6.3	52.8	168.0	6.7	0.6

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL20006 | Project: Wolf Creek | Location: Cumberland River, Mile 519.0

State: Kentucky | Latitude: 37° 0" 7.7' | Quad: Somerset, KY
County: Pulaski | Longitude: 84° 34" 27.8' | HUC: 05130103

Sample Date: 17 Jun 2014 | Water Surface Elevation = 719.9 ft | Secchi Disk = 3.0 m

Results of Laboratory Analyses

Sample Depth ft		0.0	100.0
Alkalinity, Tot	mg/L	58	52
Alkalinity, Phenol	mg/L	2	0
Solids, Tot	mg/L	144	148
Solids, Tot Diss	mg/L	144	148
Solids, Tot Susp	mg/L	<2.00	<2.00
Solids, Vol	mg/L	75.0	40.0
Solids, Vol Diss	mg/L	70.0	35.0
Solids, Vol Susp	mg/L	4.00	3.00
Ammonia N, Tot	mg/L	0.0587	0.0455
Kjeldahl N, Tot	mg/L	3.10	3.30
NO3+NO2, Tot	mg/L	0.0115	0.613
Phosphorus, Tot	mg/L	<0.007	<0.007
Phosphorus, Diss	mg/L	<0.01	<0.01
OrthoPhosphate, D	mg/L	<0.05	<0.05
Organic Carbon, T	mg/L	2.80	2.10
Hardness, Tot	mg/L	76.9	78.7
Sulfate, Tot	mg/L	33.3	31.7
Calcium, Tot	mg/L	19.8	19.9
Magnesium, Tot	mg/L	6.67	7.02
Sodium, Tot	mg/L	7.01	6.62
Potassium, Tot	mg/L	1.46	1.48
Chloride, Tot	mg/L	3.80	4.85
Arsenic, Tot	ug/L	<0.5	<0.5
Barium, Tot	ug/L	19.1	17.9
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	0.6	<0.5
Iron, Tot	ug/L	<7.0	31.1
Iron, Diss	ug/L		
Lead, Tot	ug/L	<0.5	<0.5
Lead, Diss	ug/L		
Manganese, Tot	ug/L	3.0	51.8
Manganese, Diss	ug/L		
Thallium, Tot	ug/L	<0.5	<0.5
Molybdenum, Tot	ug/L	<0.5	<0.5
Nickel, Tot	ug/L	0.7	0.77
Silver, Tot	ug/L	<0.5	<0.5
Vanadium, Tot	ug/L	<0.5	<0.5
Zinc, Tot	ug/L	<0.5	<0.5
Zinc, Diss	ug/L		
Antimony, Tot	ug/L	<0.5	<0.5
Aluminum, Tot	ug/L	<7.0	<7.0
Aluminum, Diss	ug/L		
Selenium, Tot	ug/L	<0.5	<0.5
Mercury, Tot	ug/L		

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	27.7	81.9	8.8	111.5	185.0	8.6	0.8
5.0	27.5	81.5	8.8	111.1	184.0	8.6	1.3
10.0	26.4	79.5	9.4	116.5	185.0	8.7	2.1
15.0	25.5	77.9	9.8	119.6	208.0	8.6	2.5
20.0	23.3	73.9	6.9	80.9	279.0	7.4	4.5
25.0	21.6	70.9	4.5	51.2	277.0	7.3	4.3
30.0	17.9	64.2	3.1	32.8	252.0	7.2	2.4
35.0	15.6	60.1	4.7	47.4	211.0	7.1	1.4
40.0	14.2	57.6	5.3	51.9	183.0	7.0	1.3
45.0	13.4	56.1	5.7	54.8	185.0	7.0	1.2
50.0	12.8	55.0	5.7	54.1	189.0	7.0	1.1
55.0	12.0	53.6	6.3	58.7	169.0	7.0	1.0
60.0	11.2	52.2	6.9	63.1	168.0	7.0	0.9
65.0	10.4	50.7	7.3	65.5	169.0	7.0	0.8
70.0	9.6	49.3	7.5	66.0	171.0	6.9	0.7
75.0	9.0	48.2	7.4	64.2	173.0	6.9	0.7
80.0	8.7	47.7	7.0	60.3	173.0	6.9	0.7
85.0	8.5	47.3	6.5	55.7	173.0	6.9	0.7
90.0	8.3	46.9	5.0	42.6	175.0	6.8	0.7
95.0	8.2	46.8	4.8	40.8	175.0	6.8	0.7
100.0	8.1	46.6	4.6	39.0	175.0	6.8	0.7
105.0	8.1	46.6	4.7	39.9	175.0	6.7	0.6
110.0	8.0	46.4	4.0	33.9	176.0	6.7	0.6

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL20007 | Project: Wolf Creek | Location: Big South Fork Cumberland River, Mile 2.3

State: Kentucky | Latitude: 36° 57" 20.5' | Quad: Burnside, KY
County: Wayne | Longitude: 84° 36" 21.6' | HUC: 05130104

Sample Date: 17 Jun 2014 | Water Surface Elevation = 719.9 ft | Secchi Disk = 3.9 m

Results of Laboratory Analyses

Sample Depth ft		0.0	100.0
Alkalinity, Tot	mg/L	54	50
Alkalinity, Phenol	mg/L	0	0
Solids, Tot	mg/L	124	148
Solids, Tot Diss	mg/L	124	146
Solids, Tot Susp	mg/L	<2.00	2.00
Solids, Vol	mg/L	75.0	50.0
Solids, Vol Diss	mg/L	70.0	40.0
Solids, Vol Susp	mg/L	<1.00	4.00
Ammonia N, Tot	mg/L	0.150	0.102
Kjeldahl N, Tot	mg/L	3.30	3.20
NO3+NO2, Tot	mg/L	0.0115	0.562
Phosphorus, Tot	mg/L	<0.007	<0.007
Phosphorus, Diss	mg/L	<0.01	<0.01
OrthoPhosphate, D	mg/L	<0.05	<0.05
Organic Carbon, T	mg/L	3.00	2.30
Hardness, Tot	mg/L	69.6	75.0
Sulfate, Tot	mg/L	28.6	31.4
Calcium, Tot	mg/L	18.4	19.1
Magnesium, Tot	mg/L	5.75	6.63
Sodium, Tot	mg/L	5.68	6.29
Potassium, Tot	mg/L	1.36	1.50
Chloride, Tot	mg/L	3.33	4.81
Arsenic, Tot	ug/L	<0.5	<0.5
Barium, Tot	ug/L	18.6	19.3
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	0.6	<0.5
Iron, Tot	ug/L	<7.0	44.6
Iron, Diss	ug/L		
Lead, Tot	ug/L	<0.5	<0.5
Lead, Diss	ug/L		
Manganese, Tot	ug/L	2.6	60.2
Manganese, Diss	ug/L		
Thallium, Tot	ug/L	<0.5	<0.5
Molybdenum, Tot	ug/L	<0.5	<0.5
Nickel, Tot	ug/L	0.7	0.8
Silver, Tot	ug/L	<0.5	<0.5
Vanadium, Tot	ug/L	<0.5	<0.5
Zinc, Tot	ug/L	0.5	<0.5
Zinc, Diss	ug/L		
Antimony, Tot	ug/L	<0.5	<0.5
Aluminum, Tot	ug/L	16.8	25.8
Aluminum, Diss	ug/L		
Selenium, Tot	ug/L	<0.5	<0.5
Mercury, Tot	ug/L		

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	27.4	81.3	8.5	107.2	165.0	8.3	1.0
5.0	27.3	81.1	8.5	107.0	166.0	8.2	1.7
10.0	26.1	79.0	9.6	118.4	178.0	8.6	2.4
15.0	25.5	77.9	9.6	117.1	179.0	8.5	2.8
20.0	23.3	73.9	9.1	106.8	158.0	8.0	3.7
25.0	19.6	67.3	6.0	214.4	124.0	7.5	3.1
30.0	17.2	63.0	5.3	55.3	124.0	7.3	2.7
35.0	15.5	59.9	5.4	54.4	172.0	7.1	1.7
40.0	14.6	58.3	5.8	57.3	169.0	7.0	1.7
45.0	13.7	56.7	6.2	60.0	156.0	7.0	1.9
50.0	12.7	54.9	6.3	59.6	159.0	7.0	1.5
55.0	11.9	53.4	6.8	63.2	167.0	7.0	1.1
60.0	11.0	51.8	7.1	64.6	168.0	6.9	1.1
65.0	10.4	50.7	7.0	62.8	167.0	6.9	1.0
70.0	9.2	48.6	7.1	61.9	167.0	6.9	0.9
75.0	8.8	47.8	7.1	61.3	168.0	6.8	0.9
80.0	8.5	47.3	7.2	61.7	170.0	6.8	0.9
85.0	8.3	46.9	6.9	58.8	171.0	6.8	0.8
90.0	8.2	46.8	6.7	57.0	170.0	6.8	0.8
95.0	8.0	46.4	6.3	53.3	170.0	6.8	0.7
100.0	8.0	46.4	6.3	53.3	170.0	6.8	0.7
105.0	7.9	46.2	6.0	50.6	171.0	6.7	0.7
110.0	7.9	46.2	5.8	49.0	170.0	6.7	0.7

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL20010 | Project: Wolf Creek | Location: Pitman Creek, Mile 2.1

State: Kentucky | Latitude: 37° 0" 55.3' | Quad: Somerset, KY
County: Pulaski | Longitude: 84° 36" 26.9' | HUC: 05130103

Sample Date: 17 Jun 2014 | Water Surface Elevation = 719.9 ft | Secchi Disk = 1.9 m

Results of Laboratory Analyses

Sample Depth ft		0.0	80.0
Alkalinity, Tot	mg/L	60	52
Alkalinity, Phenol	mg/L	6	0
Solids, Tot	mg/L	118	150
Solids, Tot Diss	mg/L	118	147
Solids, Tot Susp	mg/L	<2.00	3.00
Solids, Vol	mg/L	95.0	65.0
Solids, Vol Diss	mg/L	90.0	65.0
Solids, Vol Susp	mg/L	3.00	<1.00
Ammonia N, Tot	mg/L	0.0414	0.0638
Kjeldahl N, Tot	mg/L	2.70	3.10
NO3+NO2, Tot	mg/L	0.0107	0.664
Phosphorus, Tot	mg/L	<0.007	0.0122
Phosphorus, Diss	mg/L	<0.01	<0.01
OrthoPhosphate, D	mg/L	<0.05	<0.05
Organic Carbon, T	mg/L	2.80	2.20
Hardness, Tot	mg/L	78.9	80.9
Sulfate, Tot	mg/L	31.8	30.9
Calcium, Tot	mg/L	20.7	21.1
Magnesium, Tot	mg/L	6.63	6.88
Sodium, Tot	mg/L	6.67	6.37
Potassium, Tot	mg/L	1.52	1.53
Chloride, Tot	mg/L	4.06	5.02
Arsenic, Tot	ug/L	<0.5	0.5
Barium, Tot	ug/L	19.7	17.7
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	0.6	<0.5
Iron, Tot	ug/L	<7.0	54.9
Iron, Diss	ug/L		
Lead, Tot	ug/L	<0.5	<0.5
Lead, Diss	ug/L		
Manganese, Tot	ug/L	3.3	143.0
Manganese, Diss	ug/L		
Thallium, Tot	ug/L	<0.5	<0.5
Molybdenum, Tot	ug/L	<0.5	<0.5
Nickel, Tot	ug/L	0.7	0.8
Silver, Tot	ug/L	<0.5	<0.5
Vanadium, Tot	ug/L	<0.5	<0.5
Zinc, Tot	ug/L	<0.5	0.6
Zinc, Diss	ug/L		
Antimony, Tot	ug/L	<0.5	<0.5
Aluminum, Tot	ug/L	<7.0	34.2
Aluminum, Diss	ug/L		
Selenium, Tot	ug/L	<0.5	<0.5
Mercury, Tot	ug/L		

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	27.5	81.5	9.5	120.0	183.0	8.8	2.4
5.0	27.3	81.1	9.6	120.8	183.0	8.7	4.9
10.0	26.5	79.7	10.3	127.9	184.0	8.9	5.4
15.0	25.7	78.3	10.0	122.4	203.0	8.7	6.3
20.0	24.0	75.2	5.0	59.4	267.0	7.6	4.4
25.0	20.2	68.4	0.9	10.0	298.0	7.4	2.7
30.0	17.3	63.1	2.4	25.1	237.0	7.2	1.5
35.0	15.5	59.9	2.3	23.2	231.0	7.0	1.3
40.0	14.5	58.1	3.7	36.5	203.0	7.0	1.2
45.0	13.8	56.8	4.9	47.5	185.0	7.0	1.2
50.0	12.9	55.2	5.2	49.4	185.0	7.0	1.0
55.0	11.9	53.4	5.3	49.3	184.0	6.9	1.0
60.0	10.9	51.6	3.8	34.5	188.0	6.9	0.9
65.0	9.5	49.1	2.9	25.5	186.0	6.8	0.8
70.0	9.1	48.4	3.2	27.8	185.0	6.8	0.8
75.0	8.8	47.8	3.6	31.1	181.0	6.8	0.8
80.0	8.4	47.1	4.0	34.2	175.0	6.8	0.7
85.0	8.3	46.9	4.4	37.5	176.0	6.8	0.7
87.0	8.3	46.9	4.4	37.5	175.0	6.8	0.7

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL20052 | Project: Wolf Creek | Location: Beaver Creek, Mile 5.3

State: Kentucky | Latitude: 36° 52" .4' | Quad: Cumberland City, KY
County: Wayne | Longitude: 85° 1" 27.3' | HUC: 05130103

Sample Date: 16 Jun 2014 | Water Surface Elevation = 719.9 ft | Secchi Disk = 3.9 m

Results of Laboratory Analyses

Sample Depth ft		0.0	125.0
Alkalinity, Tot	mg/L	60	66
Alkalinity, Phenol	mg/L	2	0
Solids, Tot	mg/L	132	154
Solids, Tot Diss	mg/L	132	154
Solids, Tot Susp	mg/L	<2.00	<2.00
Solids, Vol	mg/L	70.0	30.0
Solids, Vol Diss	mg/L	60.0	30.0
Solids, Vol Susp	mg/L	<1.00	<1.00
Ammonia N, Tot	mg/L	0.0331	0.0324
Kjeldahl N, Tot	mg/L	2.70	2.70
NO3+NO2, Tot	mg/L	0.0996	0.614
Phosphorus, Tot	mg/L	<0.007	<0.007
Phosphorus, Diss	mg/L	<0.01	<0.01
OrthoPhosphate, D	mg/L	<0.05	<0.05
Organic Carbon, T	mg/L	3.80	2.70
Hardness, Tot	mg/L	78.0	89.8
Sulfate, Tot	mg/L	29.1	27.5
Calcium, Tot	mg/L	21.2	25.5
Magnesium, Tot	mg/L	6.10	6.31
Sodium, Tot	mg/L	5.84	5.85
Potassium, Tot	mg/L	1.46	1.57
Chloride, Tot	mg/L	4.41	4.89
Arsenic, Tot	ug/L	<0.5	<0.5
Barium, Tot	ug/L	18.4	20.6
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	0.5	0.5
Iron, Tot	ug/L	<7.0	26.7
Iron, Diss	ug/L		
Lead, Tot	ug/L	<0.5	<0.5
Lead, Diss	ug/L		
Manganese, Tot	ug/L	2.1	32.8
Manganese, Diss	ug/L		
Thallium, Tot	ug/L	<0.5	<0.5
Molybdenum, Tot	ug/L	<0.5	<0.5
Nickel, Tot	ug/L	0.8	1.0
Silver, Tot	ug/L	<0.5	<0.5
Vanadium, Tot	ug/L	<0.5	<0.5
Zinc, Tot	ug/L	0.8	<0.5
Zinc, Diss	ug/L		
Antimony, Tot	ug/L	<0.5	<0.5
Aluminum, Tot	ug/L	<7.0	12.8
Aluminum, Diss	ug/L		
Selenium, Tot	ug/L	<0.5	<0.5
Mercury, Tot	ug/L		

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	27.7	81.9	9.1	115.3	179.0	8.6	1.0
5.0	26.7	80.1	9.3	115.9	179.0	8.6	1.2
10.0	25.6	78.1	9.6	117.3	178.0	8.6	2.2
15.0	24.8	76.6	9.7	116.9	174.0	8.5	3.8
20.0	21.4	70.5	10.0	113.3	171.0	8.2	11.7
25.0	19.1	66.4	9.2	99.7	169.0	7.7	8.9
30.0	17.5	63.5	8.0	83.9	166.0	7.4	7.7
35.0	15.9	60.6	6.3	63.9	168.0	7.2	1.6
40.0	14.8	58.6	5.7	56.5	169.0	7.1	1.0
45.0	14.1	57.4	5.8	56.6	181.0	7.1	0.9
50.0	13.6	56.5	5.8	56.0	194.0	7.1	1.1
55.0	13.2	55.8	6.2	59.4	194.0	7.1	1.1
60.0	12.3	54.1	6.8	63.8	191.0	7.1	1.0
65.0	11.3	52.3	8.0	73.3	183.0	7.0	1.0
70.0	10.6	51.1	8.1	73.0	185.0	7.0	1.0
75.0	9.9	49.8	8.0	70.9	190.0	7.0	0.9
80.0	9.0	48.2	8.3	72.0	189.0	7.0	0.7
85.0	8.8	47.8	8.2	70.8	190.0	7.0	0.8
90.0	8.5	47.3	7.8	66.8	195.0	7.0	0.8
95.0	8.3	46.9	7.0	59.7	202.0	7.0	0.7
100.0	8.1	46.6	6.7	56.8	205.0	7.0	0.7
105.0	7.8	46.0	6.2	52.2	200.0	6.9	0.6
110.0	7.5	45.5	7.3	61.0	193.0	6.9	0.6
115.0	7.4	45.3	7.5	62.5	190.0	6.9	0.7
120.0	7.4	45.3	7.5	62.5	191.0	6.8	0.6
125.0	7.4	45.3	7.2	60.0	191.0	6.8	0.6
130.0	7.3	45.1	7.2	59.9	191.0	6.8	0.6
135.0	7.3	45.1	7.1	59.0	190.0	6.8	0.6

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 | Latitude: 36° 57" 3' | Quad: Jabez, KY
County: Russell | Longitude: 84° 59" 23.5' | HUC: 05130103

Sample Date: 16 Jun 2014 | Water Surface Elevation = 719.9 ft | Secchi Disk = 6.2 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	27.5	81.5	8.8	111.1	174.0	8.4	1.0
5.0	27.4	81.3	8.9	112.2	174.0	8.3	1.5
10.0	25.9	78.6	9.1	111.8	173.0	8.3	1.9
15.0	25.2	77.4	9.2	111.7	172.0	8.3	2.1
20.0	22.7	72.9	9.4	109.1	170.0	8.0	3.3
25.0	19.7	67.5	8.2	89.9	165.0	7.6	4.5
30.0	17.3	63.1	6.9	72.1	154.0	7.3	3.7
35.0	16.1	61.0	6.0	61.2	152.0	7.2	1.5
40.0	15.1	59.2	5.6	55.9	157.0	7.1	1.0
45.0	13.9	57.0	6.4	62.2	161.0	7.1	0.9
50.0	13.6	56.5	6.6	63.7	165.0	7.0	1.0
55.0	13.0	55.4	7.1	67.7	169.0	7.0	0.9
60.0	12.2	54.0	7.5	70.2	172.0	7.0	0.9
65.0	11.5	52.7	7.8	71.8	171.0	7.0	0.9
70.0	10.3	50.5	8.1	72.5	169.0	7.0	0.8
75.0	9.5	49.1	8.3	72.9	168.0	7.0	0.7
80.0	8.7	47.7	8.3	71.5	168.0	7.0	0.7
85.0	8.4	47.1	8.1	69.2	168.0	7.0	0.7
90.0	7.9	46.2	8.0	67.5	168.0	6.9	0.6
95.0	7.6	45.7	7.8	65.3	168.0	6.9	0.6
100.0	7.5	45.5	7.7	64.3	167.0	6.9	0.6
105.0	7.4	45.3	7.5	62.5	167.0	6.8	0.6
110.0	7.3	45.1	7.2	59.9	168.0	6.8	0.6
115.0	7.3	45.1	6.9	57.4	167.0	6.8	0.6
120.0	7.2	45.0	6.8	56.4	168.0	6.8	0.6
125.0	7.2	45.0	6.5	53.9	169.0	6.8	0.6
130.0	7.1	44.8	6.5	53.8	168.0	6.8	0.6
134.0	7.1	44.8	6.4	52.9	168.0	6.8	0.6

United States Army Corps of Engineers | Nashville District | CELRN-EC-H / Water Management Section

Station: 3WOL20055 | Project: Wolf Creek | Location: Fishing Creek, Mile 2.3

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

Sample Date: 17 Jun 2014 | Water Surface Elevation = 719.9 ft | Secchi Disk = 2.2 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	28.3	82.9	9.3	119.0	179.0	8.8	0.9
5.0	27.1	80.8	10.2	127.9	177.0	8.9	1.3
10.0	26.3	79.3	10.7	132.4	176.0	9.0	3.1
15.0	25.6	78.1	10.3	125.9	176.0	8.8	3.7
20.0	23.8	74.8	9.2	108.9	178.0	8.3	4.2
25.0	20.5	68.9	3.1	34.5	176.0	7.4	1.6
30.0	17.4	63.3	0.6	6.3	169.0	7.2	1.4
35.0	15.5	59.9	2.0	20.1	161.0	7.0	1.5
40.0	14.3	57.7	4.1	40.2	150.0	7.0	1.5
45.0	13.5	56.3	5.8	55.9	146.0	7.0	1.3
50.0	12.9	55.2	6.5	61.8	154.0	7.0	1.1
55.0	12.1	53.8	7.1	66.3	164.0	7.0	0.9
60.0	11.4	52.5	6.8	62.5	168.0	7.0	0.8
65.0	10.7	51.3	7.1	64.2	170.0	7.0	0.7
70.0	9.9	49.8	6.7	59.4	172.0	7.0	0.7
75.0	8.9	48.0	6.3	54.5	173.0	6.9	0.6
80.0	8.5	47.3	6.6	56.6	173.0	6.9	0.6
85.0	8.4	47.1	6.6	56.4	173.0	6.9	0.6
90.0	8.3	46.9	6.0	51.2	173.0	6.9	0.6
95.0	8.2	46.8	5.6	47.6	172.0	6.8	0.6
100.0	8.1	46.6	5.6	47.5	172.0	6.8	0.6
105.0	8.0	46.4	5.6	47.4	171.0	6.7	0.6
110.0	7.9	46.2	5.8	49.0	170.0	6.7	0.6
115.0	7.8	46.0	6.0	50.5	170.0	6.7	0.6