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

Station: 3OLD10001 | Project: Old Hickory | Location: Cumberland River, Mile 215.7

State: Tennessee | Latitude: 36º 17" 59' | Quad: Goodlettsville, TN
County: Davidson | Longitude: 86º 39" 49' | HUC: 05130202

Sample Date: 27 Jun 2013 | Water Surface Elevation = 386.9 ft | Stream Flow = 5700 cfs

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	80
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	154
Solids, Tot Diss	mg/L	129
Solids, Tot Susp	mg/L	11.0
Solids, Vol	mg/L	127
Solids, Vol Diss	mg/L	118
Solids, Vol Susp	mg/L	9.00
Ammonia N, Tot	mg/L	0.154
Kjeldahl N, Tot	mg/L	0.890
NO3+NO2, Tot	mg/L	0.128
Phosphorus, Tot	mg/L	0.0616
Phosphorus, Diss	mg/L	0.0423
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.50
Hardness, Tot	mg/L	83.5
Sulfate, Tot	mg/L	22.7
Calcium, Tot	mg/L	24.9
Magnesium, Tot	mg/L	5.18
Sodium, Tot	mg/L	4.17
Potassium, Tot	mg/L	1.33
Chloride, Tot	mg/L	4.43
Arsenic, Tot	ug/L	0.9
Barium, Tot	ug/L	22.1
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	1.6
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	1.0
Iron, Tot	ug/L	143.0
Iron, Diss	ug/L	12.0
Lead, Tot	ug/L	0.55
Lead, Diss	ug/L	<0.5
Manganese, Tot	ug/L	192.0
Manganese, Diss	ug/L	35.9
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	2.3
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.8
Zinc, Tot	ug/L	3.4
Zinc, Diss	ug/L	5.6
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	95.1
Aluminum, Diss	ug/L	10.0
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	25.4	77.7	5.1	62.1	198.0	7.4	

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

Station: 3OLD10050 | Project: Old Hickory | Location: Drakes Creek, Mile 4.9

State: Tennessee | Latitude: 36º 19" 0' | Quad: Hendersonville, TN
County: Sumner | Longitude: 86º 36" 19' | HUC: *

Sample Date: 27 Jun 2013 | Water Surface Elevation = | Stream Flow =

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	190	0.0	26.9	80.4	11.1	138.8	427.0	8.0	
Alkalinity, Phenol	mg/L	0								
Solids, Tot	mg/L									
Solids, Tot Diss	mg/L									
Solids, Tot Susp	mg/L									
Solids, Vol	mg/L	224								
Solids, Vol Diss	mg/L	224								
Solids, Vol Susp	mg/L	<4.00								
Ammonia N, Tot	mg/L	0.0626								
Kjeldahl N, Tot	mg/L	0.720								
NO3+NO2, Tot	mg/L	0.0837								
Phosphorus, Tot	mg/L	0.0938								
Phosphorus, Diss	mg/L	0.085								
OrthoPhosphate, D	mg/L	<0.05								
Organic Carbon, T	mg/L	2.20								
Hardness, Tot	mg/L	206								
Sulfate, Tot	mg/L	42.9								
Calcium, Tot	mg/L	65.5								
Magnesium, Tot	mg/L	10.3								
Sodium, Tot	mg/L	4.76								
Potassium, Tot	mg/L	1.35								
Chloride, Tot	mg/L	7.41								
Arsenic, Tot	ug/L	0.8								
Barium, Tot	ug/L	29.7								
Beryllium, Tot	ug/L	<0.5								
Cadmium, Tot	ug/L	<0.5								
Chromium, Tot	ug/L	3.1								
Cobalt, Tot	ug/L	<0.5								
Copper, Tot	ug/L	0.9								
Iron, Tot	ug/L	38.5								
Iron, Diss	ug/L									
Lead, Tot	ug/L	<0.5								
Lead, Diss	ug/L									
Manganese, Tot	ug/L	20.8								
Manganese, Diss	ug/L									
Thallium, Tot	ug/L	<0.5								
Molybdenum, Tot	ug/L	0.7								
Nickel, Tot	ug/L	4.8								
Silver, Tot	ug/L	<0.5								
Vanadium, Tot	ug/L	0.6								
Zinc, Tot	ug/L	2.3								
Zinc, Diss	ug/L									
Antimony, Tot	ug/L	<0.5								
Aluminum, Tot	ug/L	25.5								
Aluminum, Diss	ug/L									
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: 3OLD10054 | Project: Old Hickory | Location: Bledsoe Creek, Mile 10.3

State: Tennessee | Latitude: 36º 26" 44' | Quad: Bethpage, TN
County: Sumner | Longitude: 86º 19" 55' | HUC: *

Sample Date: 27 Jun 2013 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	186
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	238
Solids, Tot Diss	mg/L	215
Solids, Tot Susp	mg/L	2.00
Solids, Vol	mg/L	175
Solids, Vol Diss	mg/L	175
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	0.0508
Kjeldahl N, Tot	mg/L	0.420
NO3+NO2, Tot	mg/L	<0.0200
Phosphorus, Tot	mg/L	0.0511
Phosphorus, Diss	mg/L	0.042
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	1.80
Hardness, Tot	mg/L	174.3
Sulfate, Tot	mg/L	17.4
Calcium, Tot	mg/L	52.5
Magnesium, Tot	mg/L	10.5
Sodium, Tot	mg/L	2.41
Potassium, Tot	mg/L	1.10
Chloride, Tot	mg/L	2.91
Arsenic, Tot	ug/L	0.6
Barium, Tot	ug/L	22.7
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	3.4
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	0.7
Iron, Tot	ug/L	43.0
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	23.3
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	1.1
Nickel, Tot	ug/L	4.0
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.6
Zinc, Tot	ug/L	2.1
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	34.0
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	25.2	77.4	9.4	114.1	355.0	7.9	

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

Station: 3OLD10055 | Project: Old Hickory | Location: Cedar Creek, Mile 7.0

State: Tennessee | Latitude: 36º 13" 53' | Quad: Hermitage, TN
County: Wilson | Longitude: 86º 30" 22' | HUC: *

Sample Date: 27 Jun 2013 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	202
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	322
Solids, Tot Diss	mg/L	291
Solids, Tot Susp	mg/L	3.00
Solids, Vol	mg/L	172
Solids, Vol Diss	mg/L	165
Solids, Vol Susp	mg/L	7.00
Ammonia N, Tot	mg/L	0.0794
Kjeldahl N, Tot	mg/L	0.280
NO3+NO2, Tot	mg/L	0.121
Phosphorus, Tot	mg/L	0.115
Phosphorus, Diss	mg/L	0.099
OrthoPhosphate, D	mg/L	0.0726
Organic Carbon, T	mg/L	3.00
Hardness, Tot	mg/L	220.3
Sulfate, Tot	mg/L	40.3
Calcium, Tot	mg/L	74.6
Magnesium, Tot	mg/L	8.26
Sodium, Tot	mg/L	4.30
Potassium, Tot	mg/L	1.66
Chloride, Tot	mg/L	5.81
Arsenic, Tot	ug/L	0.9
Barium, Tot	ug/L	35.2
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	4.0
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	0.9
Iron, Tot	ug/L	82.8
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	67.2
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	5.3
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.7
Zinc, Tot	ug/L	2.7
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	56.5
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	5.3	63.2	455.0	7.5	

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

Station: 3OLD10056 | Project: Old Hickory | Location: Bartons Creek, Mile 7.1

State: Tennessee | Latitude: 36º 15" 12' | Quad: Hunters Point, TN
County: Wilson | Longitude: 86º 19" 54' | HUC: *

Sample Date: 27 Jun 2013 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	178
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	274
Solids, Tot Diss	mg/L	242
Solids, Tot Susp	mg/L	<0.250
Solids, Vol	mg/L	128
Solids, Vol Diss	mg/L	124
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	0.0552
Kjeldahl N, Tot	mg/L	0.910
NO3+NO2, Tot	mg/L	0.0930
Phosphorus, Tot	mg/L	0.0507
Phosphorus, Diss	mg/L	0.045
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	3.00
Hardness, Tot	mg/L	182.5
Sulfate, Tot	mg/L	27.2
Calcium, Tot	mg/L	63.1
Magnesium, Tot	mg/L	6.05
Sodium, Tot	mg/L	5.02
Potassium, Tot	mg/L	1.31
Chloride, Tot	mg/L	7.20
Arsenic, Tot	ug/L	0.74
Barium, Tot	ug/L	27.1
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	3.2
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	0.9
Iron, Tot	ug/L	51.0
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	17.4
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	1.1
Nickel, Tot	ug/L	4.6
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.7
Zinc, Tot	ug/L	2.4
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	38.0
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	26.1	79.0	8.8	108.5	389.0	7.9	

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

Station: 3OLD10057 | Project: Old Hickory | Location: Spring Creek, Mile 5.8

State: Tennessee | Latitude: 36º 16" 36' | Quad: Hunters Point, TN
County: Wilson | Longitude: 86º 16" 31' | HUC: 05130201

Sample Date: 27 Jun 2013 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses			Profile Measurements							
			Depth	Water Temp	Water Temp	Dis Oxygen	Dis Oxygen	Spec Cond	pH	Chloro a F
Sample Depth ft		0.0	ft	deg C	deg F	mg/l	% sat	umho/cm	units	ug/l
Alkalinity, Tot	mg/L	184	0.0	27.1	80.8	5.2	65.2	218.0	7.6	
Alkalinity, Phenol	mg/L	0								
Solids, Tot	mg/L	232								
Solids, Tot Diss	mg/L	216								
Solids, Tot Susp	mg/L	3.00								
Solids, Vol	mg/L	162								
Solids, Vol Diss	mg/L	162								
Solids, Vol Susp	mg/L	<4.00								
Ammonia N, Tot	mg/L	0.0969								
Kjeldahl N, Tot	mg/L	0.490								
NO3+NO2, Tot	mg/L	0.0421								
Phosphorus, Tot	mg/L	0.179								
Phosphorus, Diss	mg/L	0.156								
OrthoPhosphate, D	mg/L	0.120								
Organic Carbon, T	mg/L	3.70								
Hardness, Tot	mg/L	171.7								
Sulfate, Tot	mg/L	8.03								
Calcium, Tot	mg/L	60.6								
Magnesium, Tot	mg/L	4.94								
Sodium, Tot	mg/L	3.03								
Potassium, Tot	mg/L	1.40								
Chloride, Tot	mg/L	4.16								
Arsenic, Tot	ug/L	1.4								
Barium, Tot	ug/L	27.7								
Beryllium, Tot	ug/L	<0.5								
Cadmium, Tot	ug/L	<0.5								
Chromium, Tot	ug/L	3.7								
Cobalt, Tot	ug/L	<0.5								
Copper, Tot	ug/L	0.7								
Iron, Tot	ug/L	102.0								
Iron, Diss	ug/L									
Lead, Tot	ug/L	<0.5								
Lead, Diss	ug/L									
Manganese, Tot	ug/L	50.7								
Manganese, Diss	ug/L									
Thallium, Tot	ug/L	<0.5								
Molybdenum, Tot	ug/L	<0.5								
Nickel, Tot	ug/L	4.6								
Silver, Tot	ug/L	<0.5								
Vanadium, Tot	ug/L	0.9								
Zinc, Tot	ug/L	1.9								
Zinc, Diss	ug/L									
Antimony, Tot	ug/L	<0.5								
Aluminum, Tot	ug/L	46.4								
Aluminum, Diss	ug/L									
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: 3OLD10058 | Project: Old Hickory | Location: Round Lick Creek, Mile 8.3

State: Tennessee | Latitude: 36º 10" 13.2' | Quad: New Middleton, TN
County: Smith | Longitude: 86º 5" 26' | HUC: 05130201

Sample Date: 26 Jun 2013 | 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	200
Solids, Tot Diss	mg/L	185
Solids, Tot Susp	mg/L	1.00
Solids, Vol	mg/L	132
Solids, Vol Diss	mg/L	132
Solids, Vol Susp	mg/L	<4.00
Ammonia N, Tot	mg/L	0.0827
Kjeldahl N, Tot	mg/L	0.250
NO3+NO2, Tot	mg/L	0.0330
Phosphorus, Tot	mg/L	0.117
Phosphorus, Diss	mg/L	0.096
OrthoPhosphate, D	mg/L	0.0631
Organic Carbon, T	mg/L	4.10
Hardness, Tot	mg/L	140.2
Sulfate, Tot	mg/L	11.5
Calcium, Tot	mg/L	47.9
Magnesium, Tot	mg/L	4.99
Sodium, Tot	mg/L	5.03
Potassium, Tot	mg/L	1.59
Chloride, Tot	mg/L	7.74
Arsenic, Tot	ug/L	1.3
Barium, Tot	ug/L	27.5
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	2.9
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	0.6
Iron, Tot	ug/L	81.5
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	47.2
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	0.5
Nickel, Tot	ug/L	3.4
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.9
Zinc, Tot	ug/L	1.7
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	68.1
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	29.2	84.6	8.4	109.1	310.0	7.8	

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

Station: 3OLD10059 | Project: Old Hickory | Location: Caney Fork River, Mile 7.3

State: Tennessee | Latitude: 36º 13" 6.9' | Quad: Gordonsville, TN
County: Smith | Longitude: 85º 56" 56.4' | HUC: 05130108

Sample Date: 26 Jun 2013 | Water Surface Elevation = | Stream Flow =

Results of Laboratory Analyses

Sample Depth ft		0.0
Alkalinity, Tot	mg/L	72
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	128
Solids, Tot Diss	mg/L	106
Solids, Tot Susp	mg/L	2.00
Solids, Vol	mg/L	93.0
Solids, Vol Diss	mg/L	87.0
Solids, Vol Susp	mg/L	6.00
Ammonia N, Tot	mg/L	0.0415
Kjeldahl N, Tot	mg/L	0.330
NO3+NO2, Tot	mg/L	0.431
Phosphorus, Tot	mg/L	0.0535
Phosphorus, Diss	mg/L	0.044
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.20
Hardness, Tot	mg/L	73
Sulfate, Tot	mg/L	13.4
Calcium, Tot	mg/L	23.9
Magnesium, Tot	mg/L	3.24
Sodium, Tot	mg/L	3.74
Potassium, Tot	mg/L	1.11
Chloride, Tot	mg/L	2.56
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	18.4
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	1.8
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	<0.5
Iron, Tot	ug/L	71.6
Iron, Diss	ug/L	
Lead, Tot	ug/L	7.2
Lead, Diss	ug/L	
Manganese, Tot	ug/L	23.6
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	1.9
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	<0.5
Zinc, Tot	ug/L	2.8
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	59.2
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	18.9	66.0	10.6	114.4	169.0	7.7	

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

Station: 3OLD20002 | Project: Old Hickory | Location: Cumberland River, Mile 216.9

State: Tennessee | Latitude: 36º 17" 29' | Quad: Goodlettsville, TN
County: Davidson | Longitude: 86º 38" 41' | HUC: 05130201

Sample Date: 27 Jun 2013 | Water Surface Elevation = 444.5 ft | Secchi Disk = 0.9 m

Results of Laboratory Analyses

Sample Depth ft		0.0	60.0
Alkalinity, Tot	mg/L	74	72
Alkalinity, Phenol	mg/L	10	0
Solids, Tot	mg/L	152	156
Solids, Tot Diss	mg/L	134	142
Solids, Tot Susp	mg/L	6.00	8.00
Solids, Vol	mg/L	150	128
Solids, Vol Diss	mg/L	142	121
Solids, Vol Susp	mg/L	8.00	7.00
Ammonia N, Tot	mg/L	0.0435	0.215
Kjeldahl N, Tot	mg/L	0.710	0.390
NO3+NO2, Tot	mg/L	<0.0200	0.143
Phosphorus, Tot	mg/L	0.0314	0.0616
Phosphorus, Diss	mg/L	0.0163	0.0468
OrthoPhosphate, D	mg/L	<0.05	<0.05
Organic Carbon, T	mg/L	2.80	2.40
Hardness, Tot	mg/L	81.4	83.1
Sulfate, Tot	mg/L	20.6	23.2
Calcium, Tot	mg/L	24.7	24.6
Magnesium, Tot	mg/L	4.80	5.27
Sodium, Tot	mg/L	4.01	4.31
Potassium, Tot	mg/L	1.29	1.33
Chloride, Tot	mg/L	3.86	4.17
Arsenic, Tot	ug/L	0.7	0.9
Barium, Tot	ug/L	19.3	23.2
Beryllium, Tot	ug/L	<0.5	<0.5
Cadmium, Tot	ug/L	<0.5	<0.5
Chromium, Tot	ug/L	1.3	1.5
Cobalt, Tot	ug/L	<0.5	<0.5
Copper, Tot	ug/L	0.8	0.8
Iron, Tot	ug/L	52.7	121.0
Iron, Diss	ug/L	3.3	4.4
Lead, Tot	ug/L	<0.5	<0.5
Lead, Diss	ug/L	<0.5	<0.5
Manganese, Tot	ug/L	50.3	260.0
Manganese, Diss	ug/L	4.8	95.5
Thallium, Tot	ug/L	<0.5	<0.5
Molybdenum, Tot	ug/L	<0.5	<0.5
Nickel, Tot	ug/L	1.9	2.3
Silver, Tot	ug/L	<0.5	<0.5
Vanadium, Tot	ug/L	0.77	0.7
Zinc, Tot	ug/L	0.6	2.1
Zinc, Diss	ug/L	<0.5	<0.5
Antimony, Tot	ug/L	<0.5	<0.5
Aluminum, Tot	ug/L	54.2	86.1
Aluminum, Diss	ug/L	11.1	7.6
Selenium, Tot	ug/L	<0.5	<0.5
Mercury, Tot	ug/L	0.359	0.279

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	29.0	84.2	9.9	128.2	187.0	8.9	
5.0	28.3	82.9		9.3	188.0	8.8	
10.0	27.4	81.3	6.9	87.0	192.0	8.0	
15.0	26.6	79.9	5.6	69.6	194.0	7.7	
20.0	25.6	78.1	4.7	57.4	195.0	7.6	
25.0	25.0	77.0	4.4	53.2	196.0	7.4	
30.0	24.8	76.6	4.2	50.6	195.0	7.4	
35.0	24.3	75.7	4.0	47.8	195.0	7.4	
40.0	24.0	75.2	4.0	47.5	196.0	7.3	
45.0	23.9	75.0	3.9	46.3	195.0	7.3	
50.0	23.8	74.8	3.9	46.2	196.0	7.3	
55.0	23.7	74.7	3.8	44.9	196.0	7.3	
60.0	23.7	74.7	3.7	43.7	196.0	7.3	
65.0	23.5	74.3	3.5	41.2	196.0	7.3	

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

Station: 3OLD20003 | Project: Old Hickory | Location: Cumberland River, Mile 221.2

State: Tennessee | Latitude: 36º 14" 41' | Quad: Hermitage, TN
County: Davidson | Longitude: 86º 36" 50' | HUC: 05130201

Sample Date: 27 Jun 2013 | Water Surface Elevation = 444.5 ft | Secchi Disk = 0.8 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	28.0	82.4	8.7	110.8	194.0	8.5	
5.0	27.8	82.0	8.6	109.2	193.0	8.4	
10.0	27.3	81.1	7.3	91.9	195.0	8.1	
15.0	27.1	80.8	6.7	84.0	196.0	7.8	
20.0	26.6	79.9	6.2	77.1	196.0	7.7	
25.0	25.6	78.1	5.0	61.1	196.0	7.5	
30.0	24.8	76.6	4.8	57.9	195.0	7.4	
35.0	24.5	76.1	4.9	58.7	194.0	7.4	
40.0	24.2	75.6	4.8	57.2	195.0	7.4	
45.0	24.1	75.4	4.4	52.4	195.0	7.3	
50.0	23.9	75.0	4.0	47.4	196.0	7.3	
55.0	23.6	74.5	3.8	44.8	196.0	7.3	
60.0	23.5	74.3	3.8	44.7	196.0	7.3	
65.0	23.5	74.3	3.8	44.7	197.0	7.3	
70.0	23.4	74.1	3.0	35.3	199.0	7.3	

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

Station: 3OLD20004 | Project: Old Hickory | Location: Cumberland River, Mile 236.0

State: Tennessee | Latitude: 36º 18" 48' | Quad: Laguardo, TN
County: Wilson | Longitude: 86º 29" 18' | HUC: 05130201

Sample Date: 27 Jun 2013 | Water Surface Elevation = 444.5 ft | Secchi Disk = 0.7 m

Results of Laboratory Analyses

Sample Depth ft		20.0
Alkalinity, Tot	mg/L	72
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	162
Solids, Tot Diss	mg/L	137
Solids, Tot Susp	mg/L	12.0
Solids, Vol	mg/L	184
Solids, Vol Diss	mg/L	174
Solids, Vol Susp	mg/L	10.0
Ammonia N, Tot	mg/L	0.105
Kjeldahl N, Tot	mg/L	0.440
NO3+NO2, Tot	mg/L	0.108
Phosphorus, Tot	mg/L	0.0430
Phosphorus, Diss	mg/L	0.019
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.40
Hardness, Tot	mg/L	82.1
Sulfate, Tot	mg/L	23.1
Calcium, Tot	mg/L	24.4
Magnesium, Tot	mg/L	5.15
Sodium, Tot	mg/L	4.17
Potassium, Tot	mg/L	1.30
Chloride, Tot	mg/L	4.17
Arsenic, Tot	ug/L	0.8
Barium, Tot	ug/L	24.9
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	1.6
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	1.3
Iron, Tot	ug/L	136.0
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	124.0
Manganese, Diss	ug/L	
Thallium, Tot	ug/L	<0.5
Molybdenum, Tot	ug/L	<0.5
Nickel, Tot	ug/L	2.2
Silver, Tot	ug/L	<0.5
Vanadium, Tot	ug/L	0.9
Zinc, Tot	ug/L	2.1
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	73.5
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	28.8	83.8	9.3	120.0	195.0	8.6	
5.0	28.4	83.1		9.0	195.0	8.4	
10.0	27.9	82.2	8.1	103.0	195.0	8.2	
15.0	26.7	80.1	7.2	89.7	195.0	7.8	
20.0	25.8	78.4	7.1	87.1	193.0	7.7	
25.0	24.8	76.6	6.8	82.0	193.0	7.6	
30.0	24.6	76.3	6.6	79.3	193.0	7.6	
35.0	24.4	75.9	6.4	76.6	192.0	7.5	
40.0	24.3	75.7	6.0	71.7	193.0	7.5	
45.0	24.3	75.7	5.9	70.5	194.0	7.5	
50.0	24.2	75.6	5.5	65.6	194.0	7.4	

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

Station: 3OLD20005 | Project: Old Hickory | Location: Cumberland River, Mile 241.0

State: Tennessee | Latitude: 36º 19" 40' | Quad: Laguardo, TN
County: Wilson | Longitude: 86º 25" 5' | HUC: 05130201

Sample Date: 27 Jun 2013 | Water Surface Elevation = 444.5 ft | Secchi Disk = 0.7 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	29.4	84.9	8.7	113.4	227.0	8.0	
5.0	28.7	83.7	8.5	109.5	203.0	8.0	
10.0	27.3	81.1	8.2	103.2	194.0	7.9	
15.0	26.4	79.5	8.1	100.4	193.0	7.9	
20.0	25.5	77.9	7.9	96.4	193.0	7.8	
25.0	24.6	76.3	7.7	92.5	191.0	7.7	
30.0	24.4	75.9	7.6	90.9	191.0	7.7	
35.0	24.2	75.6	7.6	90.6	190.0	7.7	
40.0	24.0	75.2	7.2	85.5	191.0	7.6	
45.0	24.0	75.2	7.0	83.2	192.0	7.6	
50.0	23.9	75.0	7.0	83.0	192.0	7.5	

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

Station: 3OLD20006 | Project: Old Hickory | Location: Cumberland River, Mile 245.0

State: Tennessee | Latitude: 36º 19" 40' | Quad: Laguardo, TN
County: Wilson | Longitude: 86º 23" 22' | HUC: 05130201

Sample Date: 27 Jun 2013 | Water Surface Elevation = 444.5 ft | Secchi Disk = 0.8 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	10.6	133.9	193.0	8.7	
5.0	27.3	81.1	10.3	129.6	193.0	8.6	
10.0	26.2	79.2	9.0	111.2	193.0	8.2	
15.0	25.3	77.5	8.6	104.6	193.0	8.0	
20.0	24.0	75.2	7.9	93.9	192.0	7.8	
25.0	23.9	75.0	7.8	92.5	192.0	7.7	
30.0	23.8	74.8	7.8	92.3	192.0	7.7	
35.0	23.8	74.8	7.7	91.2	191.0	7.6	
40.0	23.7	74.7	7.5	88.6	191.0	7.6	
45.0	23.7	74.7	7.5	88.6	192.0	7.6	
50.0	23.7	74.7	7.2	85.1	192.0	7.6	

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

Station: 3OLD20007 | Project: Old Hickory | Location: Cumberland River, Mile 263.1

State: Tennessee | Latitude: 36º 17" 57' | Quad: Hunters Point, TN
County: Wilson | Longitude: 86º 15" 49' | HUC: 05130201

Sample Date: 27 Jun 2013 | Water Surface Elevation = 444.5 ft | Secchi Disk = 0.9 m

Results of Laboratory Analyses

Sample Depth ft		20.0
Alkalinity, Tot	mg/L	68
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	
Solids, Tot Diss	mg/L	
Solids, Tot Susp	mg/L	
Solids, Vol	mg/L	204
Solids, Vol Diss	mg/L	193
Solids, Vol Susp	mg/L	11.0
Ammonia N, Tot	mg/L	0.0526
Kjeldahl N, Tot	mg/L	<0.0700
NO3+NO2, Tot	mg/L	0.215
Phosphorus, Tot	mg/L	0.0169
Phosphorus, Diss	mg/L	0.008
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.40
Hardness, Tot	mg/L	82
Sulfate, Tot	mg/L	24.7
Calcium, Tot	mg/L	23.8
Magnesium, Tot	mg/L	5.47
Sodium, Tot	mg/L	4.51
Potassium, Tot	mg/L	1.36
Chloride, Tot	mg/L	4.32
Arsenic, Tot	ug/L	0.5
Barium, Tot	ug/L	22.0
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	1.6
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	1.0
Iron, Tot	ug/L	82.5
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	59.2
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	1.6
Zinc, Diss	ug/L	
Antimony, Tot	ug/L	<0.5
Aluminum, Tot	ug/L	52.7
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	24.1	75.4	10.1	120.2	195.0	8.2	
5.0	23.4	74.1		9.2	194.0	7.9	
10.0	23.2	73.8	8.9	104.2	193.0	7.8	
15.0	23.3	73.9	8.9	104.4	194.0	7.8	
20.0	23.3	73.9	8.9	104.4	193.0	7.8	
25.0	23.3	73.9	8.8	103.2	193.0	7.8	
30.0	23.2	73.8	8.8	103.0	193.0	7.8	
35.0	23.3	73.9	8.7	102.1	193.0	7.8	
40.0	23.3	73.9	8.7	102.1	193.0	7.8	
45.0	23.2	73.8	8.7	101.9	193.0	7.8	
49.0	23.3	73.9	8.7	102.1	193.0	7.8	

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

Station: 3OLD20008 | Project: Old Hickory | Location: Cumberland River, Mile 278.7

State: Tennessee | Latitude: 36º 22" 25' | Quad: Bellwood, TN
County: Trousdale | Longitude: 86º 10" 37' | HUC: 05130201

Sample Date: 27 Jun 2013 | Water Surface Elevation = 444.5 ft | Secchi Disk = 1.2 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	22.2	72.0	8.6	98.9	183.0	7.7	
5.0	21.2	70.2	8.3	93.6	183.0	7.6	
10.0	21.1	70.0	8.2	92.3	182.0	7.6	
15.0	21.0	69.8	8.1	91.0	181.0	7.6	
20.0	21.0	69.8	8.1	91.0	180.0	7.6	
25.0	21.0	69.8	8.1	91.0	180.0	7.6	
30.0	21.0	69.8	8.1	91.0	180.0	7.6	
35.0	21.0	69.8	8.1	91.0	180.0	7.6	
38.0	21.0	69.8	8.1	91.0	180.0	7.6	

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

Station: 3OLD20013 | Project: Old Hickory | Location: Drakes Creek, Mile 1.9

State: Tennessee | Latitude: 36º 16" 16' | Quad: Hendersonville, TN
County: Sumner | Longitude: 86º 36" 4' | HUC: 05130201

Sample Date: 27 Jun 2013 | Water Surface Elevation = 444.5 ft | Secchi Disk = 0.8 m

Results of Laboratory Analyses

Sample Depth ft		0.0	25.0
Alkalinity, Tot	mg/L	88	94
Alkalinity, Phenol	mg/L	10	0
Solids, Tot	mg/L	162	150
Solids, Tot Diss	mg/L	147	140
Solids, Tot Susp	mg/L	6.00	8.00
Solids, Vol	mg/L	169	150
Solids, Vol Diss	mg/L	163	138
Solids, Vol Susp	mg/L	6.00	12.0
Ammonia N, Tot	mg/L	0.0531	0.389
Kjeldahl N, Tot	mg/L	0.800	1.00
NO3+NO2, Tot	mg/L	<0.0200	<0.0200
Phosphorus, Tot	mg/L	0.0673	0.382
Phosphorus, Diss	mg/L	0.040	0.306
OrthoPhosphate, D	mg/L	<0.05	0.239
Organic Carbon, T	mg/L	3.40	2.90
Hardness, Tot	mg/L	92.7	90.3
Sulfate, Tot	mg/L	19.9	17.1
Calcium, Tot	mg/L	28.8	28.0
Magnesium, Tot	mg/L	5.05	4.95
Sodium, Tot	mg/L	3.48	3.41
Potassium, Tot	mg/L	1.42	1.46
Chloride, Tot	mg/L	3.83	3.69
Arsenic, Tot	ug/L	1.4	3.7
Barium, Tot	ug/L	19.3	30.0
Beryllium, Tot	ug/L	<0.5	<0.5
Cadmium, Tot	ug/L	<0.5	<0.5
Chromium, Tot	ug/L	1.6	2.1
Cobalt, Tot	ug/L	<0.5	<0.5
Copper, Tot	ug/L	6.0	1.1
Iron, Tot	ug/L	51.3	252.0
Iron, Diss	ug/L		
Lead, Tot	ug/L	0.5	<0.5
Lead, Diss	ug/L		
Manganese, Tot	ug/L	69.9	1610.0
Manganese, Diss	ug/L		
Thallium, Tot	ug/L	<0.5	<0.5
Molybdenum, Tot	ug/L	<0.5	0.5
Nickel, Tot	ug/L	2.2	2.3
Silver, Tot	ug/L	<0.5	<0.5
Vanadium, Tot	ug/L	1.0	0.6
Zinc, Tot	ug/L	4.7	1.2
Zinc, Diss	ug/L		
Antimony, Tot	ug/L	<0.5	<0.5
Aluminum, Tot	ug/L	47.1	71.4
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	29.8	85.6	11.0	144.3	203.0	9.1	
5.0	29.5	85.1		10.6	202.0	9.0	
10.0	28.7	83.7	8.7	112.1	203.0	8.7	
15.0	26.4	79.5	0.8	9.9	195.0	7.6	
20.0	25.0	77.0	0.0	0.0	207.0	7.2	
25.0	24.1	75.4	0.0	0.0	217.0	7.2	

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

Station: 3OLD20016 | Project: Old Hickory | Location: Cumberland River, Mile 292.4

State: Tennessee | Latitude: 36º 15" 51' | Quad: Dixon Springs, TN
County: Smith | Longitude: 86º 4" 12' | HUC: 05130201

Sample Date: 27 Jun 2013 | Water Surface Elevation = 444.5 ft | Secchi Disk = 1.0 m

Results of Laboratory Analyses

Sample Depth ft		15.0
Alkalinity, Tot	mg/L	64
Alkalinity, Phenol	mg/L	0
Solids, Tot	mg/L	148
Solids, Tot Diss	mg/L	129
Solids, Tot Susp	mg/L	5.00
Solids, Vol	mg/L	135
Solids, Vol Diss	mg/L	125
Solids, Vol Susp	mg/L	10.0
Ammonia N, Tot	mg/L	0.0997
Kjeldahl N, Tot	mg/L	0.470
NO3+NO2, Tot	mg/L	0.275
Phosphorus, Tot	mg/L	0.0148
Phosphorus, Diss	mg/L	0.003
OrthoPhosphate, D	mg/L	<0.05
Organic Carbon, T	mg/L	2.40
Hardness, Tot	mg/L	77.7
Sulfate, Tot	mg/L	27.2
Calcium, Tot	mg/L	21.8
Magnesium, Tot	mg/L	5.64
Sodium, Tot	mg/L	4.89
Potassium, Tot	mg/L	1.34
Chloride, Tot	mg/L	4.43
Arsenic, Tot	ug/L	<0.5
Barium, Tot	ug/L	21.1
Beryllium, Tot	ug/L	<0.5
Cadmium, Tot	ug/L	<0.5
Chromium, Tot	ug/L	1.4
Cobalt, Tot	ug/L	<0.5
Copper, Tot	ug/L	0.9
Iron, Tot	ug/L	74.5
Iron, Diss	ug/L	
Lead, Tot	ug/L	<0.5
Lead, Diss	ug/L	
Manganese, Tot	ug/L	52.3
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	53.3
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	20.7	69.3	7.6	84.9	188.0	7.6	
5.0	20.7	69.3		7.6	187.0	7.6	
10.0	20.6	69.1	7.6	84.8	188.0	7.6	
15.0	20.6	69.1	7.5	83.7	187.0	7.6	
20.0	20.6	69.1	7.6	84.8	187.0	7.6	
25.0	20.6	69.1	7.6	84.8	186.0	7.6	
30.0	20.6	69.1	7.5	83.7	187.0	7.6	

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

Station: 3OLD20019
Project: Old Hickory
Location: Gallatin Fossil Plant Discharge, Mile 0.3

State: Tennessee
County: Sumner
Latitude: 36º 18" 50.6'
Longitude: 86º 24" 12.8'
Quad: Laguardo, TN
HUC: 05130201

Sample Date: 27 Jun 2013
Water Surface Elevation = 444.5 ft
Secchi Disk = 0.6 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	32.9	91.2	7.5	103.4	195.0	7.7	
5.0	32.9	91.2	7.5	103.4	195.0	7.7	
10.0	32.9	91.2	7.5	103.4	195.0	7.7	