

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 3DAL10001

Project: Dale Hollow

Location: Obey River, Mile 7.0

State: Tennessee

Latitude: 36° 32' 13.4'

Quad: Dale Hollow Dam, TN-KY

County: Clay

Longitude: 85° 27' 24.9'

HUC: 05130105

Sample Date: 16 Oct 2012

Water Surface Elevation = 508.8 ft

Stream Flow = 1620 cfs

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 82	0.0	11.7	53.1	5.0	46.3	192.0	6.7	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 106								
Solids, Tot Diss	mg/L 102								
Solids, Tot Susp	mg/L 4.00								
Solids, Vol	mg/L 92.0								
Solids, Vol Diss	mg/L 92.0								
Solids, Vol Susp	mg/L <4.00								
Ammonia N, Tot	mg/L 0.250								
Kjeldahl N, Tot	mg/L 0.370								
NO3+NO2, Tot	mg/L 0.289								
Phosphorus, Tot	mg/L <0.0200								
Phosphorus, Diss	mg/L <0.0200								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 2.30								
Hardness, Tot	mg/L 94.0								
Sulfate, Tot	mg/L 16.1								
Calcium, Tot	mg/L 29.3								
Magnesium, Tot	mg/L 5.06								
Sodium, Tot	mg/L 2.68								
Potassium, Tot	mg/L 1.20								
Chloride, Tot	mg/L 3.42								
Arsenic, Tot	ug/L <0.6								
Barium, Tot	ug/L 24.0								
Beryllium, Tot	ug/L <0.6								
Cadmium, Tot	ug/L <0.6								
Chromium, Tot	ug/L 1.7								
Cobalt, Tot	ug/L <0.6								
Copper, Tot	ug/L <0.6								
Iron, Tot	ug/L 31.9								
Iron, Diss	ug/L <20.0								
Lead, Tot	ug/L <0.6								
Lead, Diss	ug/L <0.6								
Manganese, Tot	ug/L 286.0								
Manganese, Diss	ug/L 226.0								
Thallium, Tot	ug/L <0.6								
Molybdenum, Tot	ug/L <0.6								
Nickel, Tot	ug/L 4.0								
Silver, Tot	ug/L <0.6								
Vanadium, Tot	ug/L <0.6								
Zinc, Tot	ug/L 0.9								
Zinc, Diss	ug/L 1.5								
Antimony, Tot	ug/L <0.6								
Aluminum, Tot	ug/L <20.0								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L <0.6								
Mercury, Tot	ug/L 0.006								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL10011

Project: Dale Hollow

Location: Wolf River, Mile 22.7

State: Tennessee

Latitude: 36° 35" 1'

Quad: Moodyville, TN-KY

County: Pickett

Longitude: 85° 7" 5'

HUC: 05130105

Sample Date: 17 Oct 2012

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 128	0.0	13.2	55.8	9.5	90.9	354.0	8.1	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 221								
Solids, Tot Diss	mg/L 221								
Solids, Tot Susp	mg/L <4.00								
Solids, Vol	mg/L 97.0								
Solids, Vol Diss	mg/L 97.0								
Solids, Vol Susp	mg/L <4.00								
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L <0.0700								
NO3+NO2, Tot	mg/L 0.501								
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 173								
Sulfate, Tot	mg/L 37.0								
Calcium, Tot	mg/L 53.6								
Magnesium, Tot	mg/L 9.55								
Sodium, Tot	mg/L 6.35								
Potassium, Tot	mg/L 1.36								
Chloride, Tot	mg/L 8.36								
Arsenic, Tot	ug/L <0.6								
Barium, Tot	ug/L 52.2								
Beryllium, Tot	ug/L <0.6								
Cadmium, Tot	ug/L <0.6								
Chromium, Tot	ug/L 1.5								
Cobalt, Tot	ug/L <0.6								
Copper, Tot	ug/L <0.6								
Iron, Tot	ug/L 40.3								
Iron, Diss	ug/L 21.7								
Lead, Tot	ug/L <0.6								
Lead, Diss	ug/L <0.6								
Manganese, Tot	ug/L 8.8								
Manganese, Diss	ug/L 8.0								
Thallium, Tot	ug/L <0.6								
Molybdenum, Tot	ug/L <0.6								
Nickel, Tot	ug/L 6.3								
Silver, Tot	ug/L <0.6								
Vanadium, Tot	ug/L <0.6								
Zinc, Tot	ug/L 0.75								
Zinc, Diss	ug/L 1.4								
Antimony, Tot	ug/L <0.6								
Aluminum, Tot	ug/L 22.2								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L <0.6								
Mercury, Tot	ug/L								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL10012

Project: Dale Hollow

Location: Spring Creek, Mile 2.7

State: Kentucky

Latitude: 36° 38" 6'

Quad: Albany, KY-TN

County: Clinton

Longitude: 85° 8" 43'

HUC: 05130105

Sample Date: 17 Oct 2012

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 164	0.0	11.8	53.2	10.4	96.4	581.0	8.1	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 348								
Solids, Tot Diss	mg/L 348								
Solids, Tot Susp	mg/L <4.00								
Solids, Vol	mg/L 151								
Solids, Vol Diss	mg/L 151								
Solids, Vol Susp	mg/L <4.00								
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L 0.280								
NO3+NO2, Tot	mg/L 1.38								
Phosphorus, Tot	mg/L 0.0466								
Phosphorus, Diss	mg/L 0.0403								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 2.70								
Hardness, Tot	mg/L 235								
Sulfate, Tot	mg/L 60.7								
Calcium, Tot	mg/L 72.1								
Magnesium, Tot	mg/L 13.3								
Sodium, Tot	mg/L 28.9								
Potassium, Tot	mg/L 2.37								
Chloride, Tot	mg/L 39.3								
Arsenic, Tot	ug/L 0.7								
Barium, Tot	ug/L 39.7								
Beryllium, Tot	ug/L <0.6								
Cadmium, Tot	ug/L <0.6								
Chromium, Tot	ug/L 2.1								
Cobalt, Tot	ug/L <0.6								
Copper, Tot	ug/L 0.6								
Iron, Tot	ug/L 71.4								
Iron, Diss	ug/L 20.3								
Lead, Tot	ug/L <0.6								
Lead, Diss	ug/L <0.6								
Manganese, Tot	ug/L 7.8								
Manganese, Diss	ug/L 6.3								
Thallium, Tot	ug/L <0.6								
Molybdenum, Tot	ug/L 0.6								
Nickel, Tot	ug/L 8.7								
Silver, Tot	ug/L <0.6								
Vanadium, Tot	ug/L 0.9								
Zinc, Tot	ug/L 2.5								
Zinc, Diss	ug/L 2.5								
Antimony, Tot	ug/L <0.6								
Aluminum, Tot	ug/L 78.9								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L 1.0								
Mercury, Tot	ug/L								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 3DAL10014

Project: Dale Hollow

Location: East Fork Obey River, Mile 12.6

State: Tennessee

Latitude: 36° 25" 0'

Quad: Riverton, TN

County: Fentress

Longitude: 85° 1" 38'

HUC: 05130105

Sample Date: 17 Oct 2012

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 40	0.0	14.0	57.2	10.1	98.4	155.0	7.9	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 89.0								
Solids, Tot Diss	mg/L 89.0								
Solids, Tot Susp	mg/L <4.00								
Solids, Vol	mg/L 82.0								
Solids, Vol Diss	mg/L 82.0								
Solids, Vol Susp	mg/L <4.00								
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L 0.120								
NO3+NO2, Tot	mg/L 0.108								
Phosphorus, Tot	mg/L <0.0200								
Phosphorus, Diss	mg/L <0.0200								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 2.10								
Hardness, Tot	mg/L 65.5								
Sulfate, Tot	mg/L 32.1								
Calcium, Tot	mg/L 19.8								
Magnesium, Tot	mg/L 3.91								
Sodium, Tot	mg/L 3.35								
Potassium, Tot	mg/L 1.32								
Chloride, Tot	mg/L 3.85								
Arsenic, Tot	ug/L <0.6								
Barium, Tot	ug/L 23.1								
Beryllium, Tot	ug/L <0.6								
Cadmium, Tot	ug/L <0.6								
Chromium, Tot	ug/L 0.7								
Cobalt, Tot	ug/L <0.6								
Copper, Tot	ug/L <0.6								
Iron, Tot	ug/L 77.1								
Iron, Diss	ug/L <20.0								
Lead, Tot	ug/L <0.6								
Lead, Diss	ug/L <0.6								
Manganese, Tot	ug/L 27.3								
Manganese, Diss	ug/L 23.7								
Thallium, Tot	ug/L <0.6								
Molybdenum, Tot	ug/L <0.6								
Nickel, Tot	ug/L 4.7								
Silver, Tot	ug/L <0.6								
Vanadium, Tot	ug/L <0.6								
Zinc, Tot	ug/L 3.3								
Zinc, Diss	ug/L 2.7								
Antimony, Tot	ug/L <0.6								
Aluminum, Tot	ug/L 146.0								
Aluminum, Diss	ug/L 46.2								
Selenium, Tot	ug/L <0.6								
Mercury, Tot	ug/L								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 3DAL10015

Project: Dale Hollow

Location: West Fork Obey River, Mile 7.5

State: Tennessee

Latitude: 36° 24" 7'

Quad: Alpine, TN

County: Overton

Longitude: 85° 10" 40'

HUC: 05130105

Sample Date: 17 Oct 2012

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 120	0.0	13.6	56.5	10.0	96.6	318.0	8.2	
Alkalinity, Phenol	mg/L 0								
Solids, Tot	mg/L 209								
Solids, Tot Diss	mg/L 209								
Solids, Tot Susp	mg/L <4.00								
Solids, Vol	mg/L 85.0								
Solids, Vol Diss	mg/L 85.0								
Solids, Vol Susp	mg/L <4.00								
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L <0.0700								
NO3+NO2, Tot	mg/L 0.435								
Phosphorus, Tot	mg/L <0.0200								
Phosphorus, Diss	mg/L <0.0200								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 1.80								
Hardness, Tot	mg/L 155								
Sulfate, Tot	mg/L 38.7								
Calcium, Tot	mg/L 48.4								
Magnesium, Tot	mg/L 8.38								
Sodium, Tot	mg/L 6.04								
Potassium, Tot	mg/L 1.13								
Chloride, Tot	mg/L 6.40								
Arsenic, Tot	ug/L <0.6								
Barium, Tot	ug/L 25.2								
Beryllium, Tot	ug/L <0.6								
Cadmium, Tot	ug/L <0.6								
Chromium, Tot	ug/L 1.4								
Cobalt, Tot	ug/L <0.6								
Copper, Tot	ug/L <0.6								
Iron, Tot	ug/L 26.8								
Iron, Diss	ug/L <20.0								
Lead, Tot	ug/L <0.6								
Lead, Diss	ug/L <0.6								
Manganese, Tot	ug/L 8.3								
Manganese, Diss	ug/L 6.4								
Thallium, Tot	ug/L <0.6								
Molybdenum, Tot	ug/L <0.6								
Nickel, Tot	ug/L 6.3								
Silver, Tot	ug/L <0.6								
Vanadium, Tot	ug/L <0.6								
Zinc, Tot	ug/L 2.0								
Zinc, Diss	ug/L 1.4								
Antimony, Tot	ug/L <0.6								
Aluminum, Tot	ug/L 110.0								
Aluminum, Diss	ug/L 62.6								
Selenium, Tot	ug/L <0.6								
Mercury, Tot	ug/L								

United States Army Corps of Engineers
Station: 3DAL10028
State: Tennessee
County: Overton
Sample Date: 17 Oct 2012

Nashville District
Project: Dale Hollow
Latitude: 36° 28" 43.9'
Longitude: 85° 14" 29.7'
Water Surface Elevation =

CELRN-EC-H / Water Management Section
Location: Big Eagle Creek, Mile 5.3
Quad: Alpine, TN
HUC: 05130105
Stream Flow =

(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	12.1	53.8	10.6	99.0	396.0		8.2		

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20002

Project: Dale Hollow

Location: Obey River, Mile 7.7

State: Tennessee

Latitude: 36° 32' 24.1'

Quad: Dale Hollow Dam, TN-KY

County: Clay

Longitude: 85° 26' 46'

HUC: 05130105

Sample Date: 16 Oct 2012

Water Surface Elevation = 642.0 ft

Secchi Disk = 5.2 m

Results of Laboratory Analyses

Profile Measurements

Sample	Depth ft	0.0	50.0	130.0	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	78	80	84	0.0	19.8	67.6	8.8	96.7	191.0	8.4	
Alkalinity, Phenol	mg/L	0	0	0	5.0	19.9	67.8	8.8	96.8	190.0	8.4	
Solids, Tot	mg/L	97.0	99.0	124	10.0	19.9	67.8	8.8	96.8	190.0	8.4	
Solids, Tot Diss	mg/L	97.0	99.0	119.6	15.0	19.9	67.8	8.8	96.8	190.0	8.4	
Solids, Tot Susp	mg/L	<4.00	<4.00	4.40	20.0	19.8	67.6	8.8	96.7	190.0	8.4	
Solids, Vol	mg/L	52.0	74.0	90.0	25.0	19.8	67.6	8.7	95.6	190.0	8.3	
Solids, Vol Diss	mg/L	52.0	74.0	90.0	30.0	19.8	67.6	8.7	95.6	190.0	8.3	
Solids, Vol Susp	mg/L	<4.00	<4.00	<4.00	35.0	19.8	67.6	8.6	94.5	190.0	8.3	
Ammonia N, Tot	mg/L	<0.200	<0.200	0.300	40.0	19.6	67.3	7.2	78.8	191.0	7.9	
Kjeldahl N, Tot	mg/L	0.290	0.190	0.330	45.0	16.5	61.7	4.5	46.3	192.0	7.5	
NO3+NO2, Tot	mg/L	<0.0200	0.212	0.175	50.0	14.4	57.9	2.8	27.5	192.0	7.2	
Phosphorus, Tot	mg/L	<0.0200	<0.0200	0.0238	55.0	12.7	54.9	1.8	17.0	193.0	7.1	
Phosphorus, Diss	mg/L	<0.0200	<0.0200	0.0212	60.0	12.0	53.6	1.1	10.3	191.0	7.1	
OrthoPhosphate, D	mg/L	<0.0500	<0.0500	<0.0500	65.0	11.6	52.9	0.8	7.4	192.0	7.0	
Organic Carbon, T	mg/L	2.60	2.20	2.20	70.0	11.2	52.2	0.4	3.7	192.0	6.9	
Hardness, Tot	mg/L	91.0	92.6	94.5	75.0	11.0	51.8	0.3	2.7	192.0	6.9	
Sulfate, Tot	mg/L	16.3	16.2	14.9	80.0	10.8	51.4	0.2	1.8	193.0	6.9	
Calcium, Tot	mg/L	28.2	28.9	29.6	85.0	10.6	51.1	0.2	1.8	194.0	6.9	
Magnesium, Tot	mg/L	5.00	4.94	5.02	90.0	10.4	50.7	0.1	0.9	196.0	6.9	
Sodium, Tot	mg/L	2.66	2.65	2.77	95.0	10.3	50.5	0.1	0.9	196.0	6.9	
Potassium, Tot	mg/L	1.16	1.13	1.24	100.0	10.1	50.2	0.1	0.9	197.0	6.8	
Chloride, Tot	mg/L	3.39	3.36	3.55	105.0	9.9	49.8	0.1	0.9	199.0	6.8	
Arsenic, Tot	ug/L	<0.6	<0.6	1.7	110.0	9.8	49.6	0.1	0.9	199.0	6.8	
Barium, Tot	ug/L	20.0	23.7	33.7	115.0	9.7	49.5	0.1	0.9	199.0	6.8	
Beryllium, Tot	ug/L	<0.6	<0.6	<0.6	120.0	9.6	49.3	0.1	0.9	200.0	6.8	
Cadmium, Tot	ug/L	<0.6	<0.6	<0.6	125.0	9.5	49.1	0.1	0.0	202.0	6.8	
Chromium, Tot	ug/L	1.3	1.4	1.4	130.0	9.5	49.1	0.1	0.9	202.0	6.8	
Cobalt, Tot	ug/L	<0.6	<0.6	<0.6	134.0	9.5	49.1	0.1	0.9	205.0	6.9	
Copper, Tot	ug/L	0.78	<0.6	<0.6								
Iron, Tot	ug/L	<20.0	<20.0	27.1								
Iron, Diss	ug/L	<20.0	<20.0	<20.0								
Lead, Tot	ug/L	<0.6	<0.6	<0.6								
Lead, Diss	ug/L	<0.6	<0.6	<0.6								
Manganese, Tot	ug/L	7.6	16.8	1950.0								
Manganese, Diss	ug/L	10.5	34.1	1990.0								
Thallium, Tot	ug/L	<0.6	<0.6	<0.6								
Molybdenum, Tot	ug/L	0.9	<0.6	1.3								
Nickel, Tot	ug/L	3.8	3.8	3.9								
Silver, Tot	ug/L	<0.6	<0.6	<0.6								
Vanadium, Tot	ug/L	0.8	<0.6	<0.6								
Zinc, Tot	ug/L	2.9	1.1	2.8								
Zinc, Diss	ug/L	0.6	1.9	1.7								
Antimony, Tot	ug/L	<0.6	<0.6	<0.6								
Aluminum, Tot	ug/L	<20.0	<20.0	<20.0								
Aluminum, Diss	ug/L	<20.0	<20.0	<20.0								
Selenium, Tot	ug/L	<0.6	<0.6	<0.6								
Mercury, Tot	ug/L	0.005	0.008	0.012								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20003

Project: Dale Hollow

Location: Obey River, Mile 16.7

State: Tennessee

Latitude: 36° 32' 48.9'

Quad: Dale Hollow Dam, TN-KY

County: Clay

Longitude: 85° 23' 25.1'

HUC: 05130105

Sample Date: 16 Oct 2012

Water Surface Elevation = 642.0 ft

Secchi Disk = 5.4 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	20.2	68.4	8.5	94.1	190.0	8.1	
5.0	20.0	68.0	8.5	93.7	190.0	8.1	
10.0	20.0	68.0	8.5	93.7	190.0	8.1	
15.0	19.9	67.8	8.4	92.4	190.0	8.1	
20.0	19.9	67.8	8.4	92.4	190.0	8.1	
25.0	19.9	67.8	8.3	91.3	190.0	8.1	
30.0	19.9	67.8	8.3	91.3	190.0	8.1	
35.0	19.9	67.8	8.3	91.3	190.0	8.1	
40.0	19.0	66.2	5.8	62.7	193.0	7.6	
45.0	15.6	60.1	0.8	8.1	196.0	7.2	
50.0	13.8	56.8	0.5	4.9	194.0	7.1	
55.0	12.8	55.0	0.3	2.9	194.0	7.0	
60.0	12.0	53.6	0.2	1.9	195.0	7.0	
65.0	11.4	52.5	0.2	1.8	197.0	6.9	
70.0	11.2	52.2	0.2	1.8	197.0	6.9	
75.0	10.8	51.4	0.1	0.9	198.0	6.8	
80.0	10.6	51.1	0.1	0.9	198.0	6.8	
85.0	10.5	50.9	0.1	0.9	199.0	6.9	
90.0	10.5	50.9	0.1	0.9	200.0	6.9	
95.0	10.4	50.7	0.1	0.9	200.0	6.9	
100.0	10.2	50.4	0.1	0.9	202.0	6.9	
105.0	10.1	50.2	0.1	0.9	202.0	6.9	
110.0	10.0	50.0	0.1	0.9	203.0	6.9	
115.0	10.0	50.0	0.1	0.9	204.0	6.9	
120.0	9.9	49.8	0.1	0.9	205.0	6.9	

CELNRN-EC-H / Water Management Section

Location: Obey River, Mile 27.7

Quad: Dale Hollow Reservoir SE, TN-KY
HUC: 05130105

Secchi Disk = 4.4 m

Profile Measurements

Sample	Depth ft	0.0	90.0	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	80	90	0.0	20.0	68.0	8.3	91.5	194.0	8.0	
Alkalinity, Phenol	mg/L	0	0	5.0	19.9	67.8	8.3	91.3	194.0	8.0	
Solids, Tot	mg/L	100	114	10.0	19.7	67.5	8.3	91.0	194.0	8.0	
Solids, Tot Diss	mg/L	100	105.2	15.0	19.7	67.5	8.2	89.9	194.0	8.0	
Solids, Tot Susp	mg/L	<4.00	8.80	20.0	19.6	67.3	8.1	88.6	194.0	8.0	
Solids, Vol	mg/L	71.0	100	25.0	19.6	67.3	8.1	88.6	194.0	8.0	
Solids, Vol Diss	mg/L	71.0	100	30.0	19.6	67.3	7.9	86.4	194.0	7.9	
Solids, Vol Susp	mg/L	<4.00	<4.00	35.0	19.5	67.1	7.5	81.9	196.0	7.8	
Ammonia N, Tot	mg/L	<0.200	0.380	40.0	19.3	66.7	6.5	70.7	199.0	7.7	
Kjeldahl N, Tot	mg/L	0.230	0.380	45.0	18.6	65.5	3.3	35.4	206.0	7.3	
NO3+NO2, Tot	mg/L	<0.0200	<0.0200	50.0	14.3	57.7	0.2	2.0	204.0	7.0	
Phosphorus, Tot	mg/L	<0.0200	0.0346	55.0	12.7	54.9	0.2	1.9	205.0	7.0	
Phosphorus, Diss	mg/L	<0.0200	0.0297	60.0	11.9	53.4	0.1	0.9	203.0	6.9	
OrthoPhosphate, D	mg/L	<0.0500	<0.0500	65.0	11.7	53.1	0.1	0.9	203.0	6.9	
Organic Carbon, T	mg/L	2.40	2.40	70.0	11.3	52.3	0.1	0.9	205.0	6.9	
Hardness, Tot	mg/L	91.7	96.5	75.0	11.2	52.2	0.1	0.9	206.0	6.9	
Sulfate, Tot	mg/L	16.8	12.8	80.0	11.1	52.0	0.1	0.9	206.0	6.9	
Calcium, Tot	mg/L	28.2	30.2	85.0	10.9	51.6	0.1	0.9	206.0	6.9	
Magnesium, Tot	mg/L	5.16	5.11	90.0	10.9	51.6	0.1	0.9	205.0	6.9	
Sodium, Tot	mg/L	2.85	2.68	95.0	10.8	51.4	0.1	0.9	206.0	6.9	
Potassium, Tot	mg/L	1.12	1.16	100.0	10.8	51.4	0.1	0.9	208.0	6.8	
Chloride, Tot	mg/L	3.54	3.39								
Arsenic, Tot	ug/L	<0.6	4.7								
Barium, Tot	ug/L	21.6	33.2								
Beryllium, Tot	ug/L	<0.6	<0.6								
Cadmium, Tot	ug/L	<0.6	<0.6								
Chromium, Tot	ug/L	1.2	1.3								
Cobalt, Tot	ug/L	<0.6	<0.6								
Copper, Tot	ug/L	<0.6	<0.6								
Iron, Tot	ug/L	<20.0	1220.0								
Iron, Diss	ug/L	<20.0	1070.0								
Lead, Tot	ug/L	<0.6	<0.6								
Lead, Diss	ug/L	<0.6	<0.6								
Manganese, Tot	ug/L	22.4	1340.0								
Manganese, Diss	ug/L	31.1	1370.0								
Thallium, Tot	ug/L	<0.6	<0.6								
Molybdenum, Tot	ug/L	<0.6	<0.6								
Nickel, Tot	ug/L	3.5	4.1								
Silver, Tot	ug/L	<0.6	<0.6								
Vanadium, Tot	ug/L	0.6	<0.6								
Zinc, Tot	ug/L	0.7	0.6								
Zinc, Diss	ug/L	3.8	2.3								
Antimony, Tot	ug/L	<0.6	<0.6								
Aluminum, Tot	ug/L	<20.0	<20.0								
Aluminum, Diss	ug/L	<20.0	<20.0								
Selenium, Tot	ug/L	<0.6	<0.6								
Mercury, Tot	ug/L										

United States Army Corps of Engineers

Nashville District

CELRN-EC-H / Water Management Section

Station: 3DAL20005

Project: Dale Hollow

Location: Obey River, Mile 33.0

State: Tennessee

Latitude: 36° 35" 46.6'

Quad: Dale Hollow Reservoir SE, TN-KY

County: Clay

Longitude: 85° 17" 1.7'

HUC: 05130105

Sample Date: 16 Oct 2012

Water Surface Elevation = 642.0 ft

Secchi Disk = 4.0 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	20.6	69.1	8.3	92.6	199.0	8.2	
5.0	20.2	68.4	8.3	91.9	199.0	8.1	
10.0	19.8	67.6	8.3	91.2	199.0	8.1	
15.0	19.6	67.3	8.3	90.8	199.0	8.0	
20.0	19.6	67.3	8.2	89.7	199.0	8.0	
25.0	19.6	67.3	8.1	88.6	199.0	8.0	
30.0	19.6	67.3	7.9	86.4	199.0	8.0	
35.0	19.6	67.3	7.9	86.4	198.0	7.9	
40.0	19.6	67.3	7.8	85.3	199.0	7.9	
45.0	17.4	63.3	1.6	16.8	192.0	7.1	
50.0	14.5	58.1	0.2	2.0	204.0	7.0	
55.0	13.2	55.8	0.1	1.0	205.0	7.0	
60.0	12.4	54.3	0.1	0.9	205.0	6.9	
65.0	12.0	53.6	0.1	0.9	206.0	6.9	
70.0	11.5	52.7	0.1	0.9	207.0	6.9	
75.0	11.5	52.7	0.1	0.9	207.0	6.8	
80.0	11.5	52.7	0.1	0.9	207.0	6.8	
85.0	11.4	52.5	0.1	0.9	208.0	6.7	
88.0	11.4	52.5	0.1	0.9	208.0	6.7	

CELNRN-EC-H / Water Management Section

Location: Obey River, Mile 41.6

Quad: Byrdstown, TN-KY
HUC: 05130105

Secchi Disk = 3.3 m

Profile Measurements

[illegible]

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20007

Project: Dale Hollow

Location: Obey River, Mile 55.8

State: Tennessee

Latitude: 36° 28' 21.3'

Quad: Alpine, TN

County: Pickett

Longitude: 85° 8' 6.8'

HUC: 05130105

Sample Date: 16 Oct 2012

Water Surface Elevation = 642.0 ft

Secchi Disk = 1.4 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	20.0	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 84	0.0	19.9	67.8	9.4	103.4	218.0	8.1	
Alkalinity, Phenol	mg/L 0	5.0	18.5	65.3	9.7	103.8	217.0	8.2	
Solids, Tot	mg/L 139	10.0	17.6	63.7	9.6	100.9	216.0	8.1	
Solids, Tot Diss	mg/L 121.8	15.0	17.1	62.8	9.0	93.7	217.0	7.9	
Solids, Tot Susp	mg/L 17.2	20.0	15.8	60.4	8.0	81.0	221.0	7.6	
Solids, Vol	mg/L 104	25.0	15.4	59.7	7.5	75.3	225.0	7.5	
Solids, Vol Diss	mg/L 100	30.0	15.1	59.2	7.1	70.9	229.0	7.5	
Solids, Vol Susp	mg/L 4	35.0	15.1	59.2	6.4	63.9	229.0	7.4	
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L 0.250								
NO3+NO2, Tot	mg/L 0.217								
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 101								
Sulfate, Tot	mg/L 27.3								
Calcium, Tot	mg/L 31.5								
Magnesium, Tot	mg/L 5.52								
Sodium, Tot	mg/L 3.51								
Potassium, Tot	mg/L 1.25								
Chloride, Tot	mg/L 4.18								
Arsenic, Tot	ug/L <0.6								
Barium, Tot	ug/L 28.9								
Beryllium, Tot	ug/L <0.6								
Cadmium, Tot	ug/L <0.6								
Chromium, Tot	ug/L 1.1								
Cobalt, Tot	ug/L <0.6								
Copper, Tot	ug/L <0.6								
Iron, Tot	ug/L 319.0								
Iron, Diss	ug/L 20.3								
Lead, Tot	ug/L 0.65								
Lead, Diss	ug/L <0.6								
Manganese, Tot	ug/L 155.0								
Manganese, Diss	ug/L 89.1								
Thallium, Tot	ug/L <0.6								
Molybdenum, Tot	ug/L <0.6								
Nickel, Tot	ug/L 4.6								
Silver, Tot	ug/L <0.6								
Vanadium, Tot	ug/L <0.6								
Zinc, Tot	ug/L 1.7								
Zinc, Diss	ug/L 3.5								
Antimony, Tot	ug/L <0.6								
Aluminum, Tot	ug/L 165.0								
Aluminum, Diss	ug/L 20.4								
Selenium, Tot	ug/L <0.6								
Mercury, Tot	ug/L								

CELNRN-EC-H / Water Management Section

Location: Wolf River, Mile 8.7

Quad: Byrdstown, TN-KY
HUC: 05130105

Secchi Disk = 2.7 m

Profile Measurements

[illegible]

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20009

Project: Dale Hollow

Location: East Fork Obey River, Mile 2.0

State: Tennessee

Latitude: 36° 27' 6.9'

Quad: Riverton, TN

County: Pickett

Longitude: 85° 5' 38.5'

HUC: 05130105

Sample Date: 16 Oct 2012

Water Surface Elevation = 642.0 ft

Secchi Disk = 2.2 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	10.0	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 68	0.0	17.1	62.8	9.7	100.9	208.0	8.0	
Alkalinity, Phenol	mg/L 0	5.0	16.1	61.0	9.6	97.9	207.0	7.9	
Solids, Tot	mg/L 122	10.0	15.4	59.7	9.3	93.4	202.0	7.8	
Solids, Tot Diss	mg/L 115.6	15.0	14.3	57.7	8.3	81.4	195.0	7.6	
Solids, Tot Susp	mg/L 6.40	20.0	14.2	57.6	6.7	65.6	240.0	7.3	
Solids, Vol	mg/L 93.0								
Solids, Vol Diss	mg/L 93.0								
Solids, Vol Susp	mg/L <4.00								
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L 0.140								
NO3+NO2, Tot	mg/L 0.174								
Phosphorus, Tot	mg/L <0.0200								
Phosphorus, Diss	mg/L <0.0200								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 1.80								
Hardness, Tot	mg/L 92.0								
Sulfate, Tot	mg/L 33.4								
Calcium, Tot	mg/L 28.2								
Magnesium, Tot	mg/L 5.26								
Sodium, Tot	mg/L 3.93								
Potassium, Tot	mg/L 1.29								
Chloride, Tot	mg/L 4.63								
Arsenic, Tot	ug/L <0.6								
Barium, Tot	ug/L 26.2								
Beryllium, Tot	ug/L <0.6								
Cadmium, Tot	ug/L <0.6								
Chromium, Tot	ug/L 1.0								
Cobalt, Tot	ug/L <0.6								
Copper, Tot	ug/L <0.6								
Iron, Tot	ug/L 146.0								
Iron, Diss	ug/L 33.4								
Lead, Tot	ug/L <0.6								
Lead, Diss	ug/L <0.6								
Manganese, Tot	ug/L 65.6								
Manganese, Diss	ug/L 54.2								
Thallium, Tot	ug/L <0.6								
Molybdenum, Tot	ug/L <0.6								
Nickel, Tot	ug/L 4.3								
Silver, Tot	ug/L <0.6								
Vanadium, Tot	ug/L <0.6								
Zinc, Tot	ug/L 1.1								
Zinc, Diss	ug/L 2.6								
Antimony, Tot	ug/L <0.6								
Aluminum, Tot	ug/L 153.0								
Aluminum, Diss	ug/L 58.0								
Selenium, Tot	ug/L <0.6								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20010

Project: Dale Hollow

Location: West Fork Obey River, Mile 1.8

State: Tennessee

Latitude: 36° 26" 49.3'

Quad: Alpine, TN

County: Overton

Longitude: 85° 9" 8.9'

HUC: 05130105

Sample Date: 16 Oct 2012

Water Surface Elevation = 642.0 ft

Secchi Disk = 1.4 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	10.0	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 124	0.0	18.4	65.1	9.9	105.8	336.0	8.1	
Alkalinity, Phenol	mg/L 0	5.0	15.6	60.1	9.7	97.8	337.0	8.0	
Solids, Tot	mg/L 196	10.0	14.4	57.9	8.7	85.5	324.0	7.8	
Solids, Tot Diss	mg/L 192	15.0	14.1	57.4	8.5	83.0	323.0	7.7	
Solids, Tot Susp	mg/L 4.00	20.0	14.0	57.2	8.3	80.9	325.0	7.7	
Solids, Vol	mg/L 152								
Solids, Vol Diss	mg/L 152								
Solids, Vol Susp	mg/L <4.00								
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L 0.160								
NO3+NO2, Tot	mg/L 0.593								
Phosphorus, Tot	mg/L <0.0200								
Phosphorus, Diss	mg/L <0.0200								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 1.60								
Hardness, Tot	mg/L 157								
Sulfate, Tot	mg/L 40.7								
Calcium, Tot	mg/L 48.7								
Magnesium, Tot	mg/L 8.63								
Sodium, Tot	mg/L 6.07								
Potassium, Tot	mg/L 1.26								
Chloride, Tot	mg/L 7.73								
Arsenic, Tot	ug/L <0.6								
Barium, Tot	ug/L 27.6								
Beryllium, Tot	ug/L <0.6								
Cadmium, Tot	ug/L <0.6								
Chromium, Tot	ug/L 1.7								
Cobalt, Tot	ug/L <0.6								
Copper, Tot	ug/L 2.6								
Iron, Tot	ug/L 111.0								
Iron, Diss	ug/L <20.0								
Lead, Tot	ug/L <0.6								
Lead, Diss	ug/L <0.6								
Manganese, Tot	ug/L 48.2								
Manganese, Diss	ug/L 27.8								
Thallium, Tot	ug/L <0.6								
Molybdenum, Tot	ug/L <0.6								
Nickel, Tot	ug/L 6.2								
Silver, Tot	ug/L <0.6								
Vanadium, Tot	ug/L 0.7								
Zinc, Tot	ug/L 0.76								
Zinc, Diss	ug/L 1.0								
Antimony, Tot	ug/L <0.6								
Aluminum, Tot	ug/L 126.0								
Aluminum, Diss	ug/L 54.6								
Selenium, Tot	ug/L <0.6								
Mercury, Tot	ug/L								

United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20020

Project: Dale Hollow

Location: Spring Creek, Mile 0.5

State: Kentucky

Latitude: 36° 37" 54'

Quad: Albany, KY-TN

County: Clinton

Longitude: 85° 9" 28.9'

HUC: 05130105

Sample Date: 16 Oct 2012

Water Surface Elevation = 642.0 ft

Secchi Disk = 0.6 m

Results of Laboratory Analyses

Profile Measurements

Sample Depth ft	5.0	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 118	0.0	19.5	67.1	11.6	126.7	294.0	8.9	
Alkalinity, Phenol	mg/L 4	5.0	16.4	61.5	9.2	94.4	456.0	8.2	
Solids, Tot	mg/L 196	8.0	16.0	60.8	8.8	89.5	506.0	8.1	
Solids, Tot Diss	mg/L 183.2								
Solids, Tot Susp	mg/L 12.8								
Solids, Vol	mg/L 151								
Solids, Vol Diss	mg/L 146								
Solids, Vol Susp	mg/L 5								
Ammonia N, Tot	mg/L <0.200								
Kjeldahl N, Tot	mg/L 0.760								
NO3+NO2, Tot	mg/L 0.297								
Phosphorus, Tot	mg/L 0.0311								
Phosphorus, Diss	mg/L <0.0200								
OrthoPhosphate, D	mg/L <0.0500								
Organic Carbon, T	mg/L 3.30								
Hardness, Tot	mg/L 143								
Sulfate, Tot	mg/L 35.1								
Calcium, Tot	mg/L 43.8								
Magnesium, Tot	mg/L 8.19								
Sodium, Tot	mg/L 11.1								
Potassium, Tot	mg/L 1.69								
Chloride, Tot	mg/L 17.6								
Arsenic, Tot	ug/L 0.9								
Barium, Tot	ug/L 35.3								
Beryllium, Tot	ug/L <0.6								
Cadmium, Tot	ug/L <0.6								
Chromium, Tot	ug/L 1.7								
Cobalt, Tot	ug/L <0.6								
Copper, Tot	ug/L 0.7								
Iron, Tot	ug/L 186.0								
Iron, Diss	ug/L <20.0								
Lead, Tot	ug/L <0.6								
Lead, Diss	ug/L <0.6								
Manganese, Tot	ug/L 57.0								
Manganese, Diss	ug/L 8.9								
Thallium, Tot	ug/L <0.6								
Molybdenum, Tot	ug/L <0.6								
Nickel, Tot	ug/L 5.1								
Silver, Tot	ug/L <0.6								
Vanadium, Tot	ug/L 1.1								
Zinc, Tot	ug/L 1.6								
Zinc, Diss	ug/L 1.1								
Antimony, Tot	ug/L <0.6								
Aluminum, Tot	ug/L 101.0								
Aluminum, Diss	ug/L <20.0								
Selenium, Tot	ug/L <0.6								
Mercury, Tot	ug/L								

Water Quality Physical / Chemical Data Report

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United States Army Corps of Engineers

Nashville District

CELNRN-EC-H / Water Management Section

Station: 3DAL20067

Project: Dale Hollow

Location: Obey River, Mile 50.0

State: Tennessee

Latitude: 36° 30" 49.8'

Quad: Byrdstown, TN-KY

County: Pickett

Longitude: 85° 9" 28.3'

HUC: 05130105

Sample Date: 16 Oct 2012

Water Surface Elevation = 642.0 ft

Secchi Disk = 4.4 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	21.1	70.0	8.4	94.6	218.0	8.2	
5.0	20.0	68.0	8.6	94.8	218.0	8.1	
10.0	19.7	67.5	8.4	92.1	217.0	8.1	
15.0	19.5	67.1	8.2	89.5	217.0	8.0	
20.0	19.3	66.7	7.8	84.8	217.0	7.9	
25.0	19.2	66.6	7.5	81.4	217.0	7.8	
30.0	19.2	66.6	7.3	82.5	218.0	7.8	
35.0	18.4	65.1	6.0	64.1	218.0	7.5	
40.0	17.0	62.6	4.4	45.7	216.0	7.3	
45.0	16.7	62.1	3.7	38.2	215.0	7.2	
50.0	13.4	56.1	0.2	1.9	222.0	7.2	
54.0	13.0	55.4	0.2	1.9	222.0	7.1	