Water Quality Survey Report
E. coli Concentrations in
Lake of the Ozarks
Miller, Camden, Morgan, and Benton Counties

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Prepared for:

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Division of Environmental Quality
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Prepared by:

Missouri Department of Natural Resources
Division of Environmental Quality
Environmental Services Program

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Summary

From 2007 to 2011, staff of the Missouri Department of Natural Resources Water Quality Monitoring Section (WQMS) conducted a water quality survey of the Lake of the Ozarks. Specifically, the WQMS, with the assistance of volunteers from the Lake of the Ozarks Watershed Alliance (LOWA), collected and analyzed 1,619 water samples for the concentration of the bacterium *Escherichia (E.) coli*. The survey included 451 sites within 118 coves of the lake.

The concentration of *E. coli* in samples collected during the survey ranged from non-detectable to greater than 2419 Most Probable Number per 100 milliliters (MPN/100 ml). Most of the higher concentrations of *E. coli* were detected in samples collected in the spring following heavy periods of precipitation or runoff. The annual geometric means of the sample data are significantly lower than the current Missouri Water Quality Standard of 126 E. coli/100mL for Lake of the Ozarks. The annual geometric means for the survey data were 5.0, 7.6, 8.8, 3.8, and 3.0, from 2007 through 2011, respectively.

1.0 Introduction

In May 2005, AmerenUE, the owner/operator of the Osage Hydroelectric Project (a.k.a. Bagnell Dam), entered into a settlement agreement with the Missouri Department of Natural Resources (the department) and other government agencies regarding certain aspects of the operation of Bagnell Dam and the Lake of the Ozarks. In March 2007, portions of the settlement agreement became a part of the operating license issued to AmerenUE by the Federal Energy Regulatory Commission (FERC). One of the requirements of the settlement agreement and FERC license was to provide funding to the department to "conduct bacterial monitoring in lake coves."

As a result of the settlement agreement, in March 2007, the department's Water Protection Program (WPP) requested the WQMS to begin a five-year bacterial monitoring survey of the Lake of the Ozarks. As planning began for the survey, WQMS staff realized that in order to collect and analyze samples over the entire lake additional resources would be required. WQMS recruited the assistance of a then newly-formed citizen-based watershed group called the Lake of the Ozarks Watershed Alliance (LOWA). Leaders of LOWA were eager to assist in the large effort and soon gathered sufficient volunteers to monitor the entire lake.

2.0 Survey Area

The Lake of the Ozarks was created in 1931 by the construction of Bagnell Dam, impounding the Osage River approximately 81 river miles from its confluence with the Missouri River. The Lake of the Ozarks covers approximately 55,000 acres and contains over 1100 miles of shoreline in four counties. The shoreline follows the natural rugged topography of the Ozark hills and valleys, creating numerous coves within the lake. The coves provide some protection from the sometimes turbulent water in the main channel of the lake and therefore provide more opportunities for whole-body contact recreation such as swimming. One achieved goal of the survey was to monitor as many of these coves as possible from Bagnell Dam to Truman Dam,

located at the upstream terminus of the Osage Arm of the lake.

3.0 Survey Design

Because of the large geographical area of the lake, time constraints of the analytical method, and limited resources of the WQMS, staff divided the lake into five smaller areas for purposes of the survey. Each of the five areas was monitored for one recreational season (May through October) during the survey. Each survey area contained 49 to 119 selected monitoring sites. Each month during the recreational season, approximately 50 to 60 predetermined sites were monitored. Each site was monitored three times during a recreational season, except in year five when sites were scheduled to be monitored six times due to the topography of the upper portion of the lake. A total of 118 coves and 451 sites were monitored during the survey.

3.1 Monitoring Locations

WQMS staff selected monitoring locations each year of the survey prior to the start of the recreational season. As indicated in the State-AmerenUE settlement agreement, monitoring sites were selected within coves. Each selected cove contained three to seven individual sites, depending on cove size and shape. For purposes of the survey, cove general criteria included that each was easily recognizable as a cove on a map and that the length of each was at least one-quarter mile from mouth to head. Specific coves were selected for a variety of reasons including density of shoreline development, locations of point-source discharges, locations of commercial establishments, locations of public areas, recreational use, and historical water quality data.

WQMS staff selected individual sites with the intent of collecting data representative of areas likely or potentially likely to attract whole-body contact recreation within each cove. Selected sites were indicated on maps by placing icons without specific locational data. The maps were provided to sample collectors with instructions to choose more specific locations in relatively close proximity to the map-indicated locations during the first monitoring event each season. The sample collectors or WQMS staff then collected field identified geographic data for each site. Appendix A lists each monitoring site along with its geographic coordinates and year(s) sampled. Appendix B contains maps of all monitoring sites.

3.2 Monitoring Schedule

The survey began in May 2007 and continued through October 2011. All monitoring was conducted during the recreational season (May through October) each year of the survey. During 2007 the survey focused on coves along the main stem of the lake from Bagnell Dam to approximately mile marker sixteen near the Lake of the Ozarks Community Bridge. Monitoring efforts in 2008 shifted upstream from the sixteen mile marker to the thirty mile marker of the main stem and the lower three miles of the Grand Glaize arm of the lake. The survey continued to move upstream in 2009 with monitoring from mile marker thirty-one to mile marker thirty-six of the main lake plus the Big and Little Niangua arms of the lake. In 2010, two separate areas were monitored – mile marker thirty-six to mile marker sixty of the main stem and the Gravois arm. The final year of the survey in 2011 completed monitoring of the lake from mile marker

sixty-one to mile marker ninety along the main stem of the lake. In addition to these base geographical areas, a few coves received additional monitoring in 2008, 2009, and 2010. Appendix A lists each monitoring site along with its geographic coordinates and year(s) sampled. Appendix B contains a map of all monitoring sites.

The schedule for monitoring was set prior to the start of field activities each year. The first monitoring event of each year was held on the Tuesday following Memorial Day. The third event each year was always scheduled on the first Monday or Tuesday following Independence Day. The fifth event each year was scheduled on the Tuesday following Labor Day. The second, fourth, and sixth events each year were scheduled on Mondays in June, August, and October, respectively, evenly spaced between the other three events. The strategy of this schedule was to collect water samples as soon as possible following peak use times of the lake during the recreational season.

3.3 Monitoring Method

All samples were collected as grab (discrete time and location) samples. A sample was collected by immersing a new, sterile sample container into the water inverted to a depth of six to twelve inches. When at depth, the container was up righted, allowed to fill, brought to the surface, and promptly capped. Sample collection was conducted from various watercraft owned by individual sample collectors or the department.

Immediately after collection, each sample was placed on ice inside a cooler. The date, time, and location of each sample were recorded by the collection team on a field sheet/chain-of-custody record supplied by the department. Each collection team relinquished samples to either a sample courier or WQMS staff as soon as possible so that all samples collected within a given day by all teams could be processed within the allotted holding time of six hours.

All sample collection, preservation, handling, transport, and documentation were conducted in accordance with applicable department standard operating procedures.

3.4 Monitoring Personnel

Volunteers recruited by LOWA conducted the vast majority of monitoring field activities, including sample collection. Volunteers included LOWA members, employees of AmerenUE, employees of the Missouri Department of Conservation, and other lake area residents interested in the water quality of the lake. Over the five year period of the survey, more than 100 volunteers assisted with the project. Volunteers were organized into monitoring teams and were responsible for providing their own watercraft in order to collect samples. At least one member of each monitoring team received four hours of classroom instruction from WQMS staff. Instruction included monitoring site selection, proper sample collection technique, sample preservation, and sample documentation.

3.5 Analytical Method

WQMS staff analyzed all samples collected during the survey for *Escherichia (E.) coli* bacteria using Colilert® reagent and the Quanti-Tray® 2000 system manufactured by IDEXX Laboratories. The method conforms to the *Standard Methods for the Examination of Water and Wastewater, 21st Edition*, method 9223 and is approved for the analysis of surface waters by the U.S. Environmental Protection Agency (USEPA). The department's Standard Operating Procedure MDNR-ESP-109 is based upon Standard Method 9223 and the IDEXX products.

3.6 Quality Assurance/Quality Control

WQMS staff employed several strategies to ensure quality data during the survey. As previously mentioned, at least one member of each monitoring team was required to attend a classroom training session presented by WQMS staff. Monitoring teams were asked to collect approximately one duplicate sample in each cove over the course of the monitoring season. The actual rate of duplicate sample collection for the survey as a whole was 6.3 percent of the total number of samples. During 2007 and 2008, the monitoring teams were also asked to collect one field blank sample for the year. In the laboratory, WQMS staff analyzed both negative and positive control samples for each lot of Colilert® reagent used in the survey.

4.0 Results and Discussion

Over the five years of the survey, 118 coves containing 451 sites were monitored. WQMS staff analyzed a total of 1619 samples for the survey. Analytical results varied widely from essentially zero (non-detect) to greater than 2419 MPN/100 ml (maximum limit for the method). Results within individual years, events, and even coves also varied considerably. Appendix C contains analytical results for all individual samples analyzed during the survey. This high variability in *E. coli* concentrations in surface waters is not uncommon. Bacteriological water quality studies by other entities, including the USEPA[1] and US Geological Survey (USGS)[2], have also demonstrated the highly variable nature of *E. coli* concentrations in surface waters. Some of the many identified factors that affect *E. coli* concentrations include precipitation duration and intensity, water temperature, solar radiation duration and intensity, water clarity, wind direction and intensity, water depth, time of day, density of water fowl, and density of recreational users.

Because of the highly variable nature of bacterial concentrations in surface waters, data are generally assessed and compared using geometric (logarithmic) means rather than arithmetic means. The current Missouri Water Quality Standard for *E. coli* in waters designated for whole-body contact recreation, such as Lake of the Ozarks, is 126 bacteria per 100 ml[3] as a geometric

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1 USEPA, 2005, The EMPACT Beaches Project, Results from a Study on Microbiological Monitoring in Recreational Waters, 600/R-04/023
2 Francy, D.S., Darner, R.A. and Bertke, E.E., 2006, Models for predicting recreational water quality at Lake Erie beaches: U.S. Geological Survey Scientific Investigations Report 2006-5192
3 Bacteria/100 ml, MPN/100 ml, and colony forming units (CFU)/100 ml are considered equivalent units of measure for bacterial concentrations.

mean for an entire recreational season (defined by rule as April 1 through October 31). In comparison, annual geometric means for the Lake of the Ozarks survey were 5.0, 7.6, 8.8, 3.8, and 3.0, from 2007 through 2011, respectively.

A general trend with respect to monthly geometric means developed over the course of the survey. During each respective year of the survey, the highest monthly geometric mean was recorded in May. The geometric mean for the following months generally trended downward. A possible explanation for this trend is the typically higher precipitation, inflow, and turbidity in May compared with the remainder of the season. Appendix D contains a graph depicting the trend for each year of the survey. The trend was most evident in 2009 when the May geometric mean was calculated as 215.25. The official recorded precipitation received at the Lee C. Fine Airport in Kaiser, Missouri during the 24-hour period prior to the May 26, 2009, monitoring event was 1.97 inches. Unofficial precipitation reports from volunteer sample collection teams ranged from three to five inches, most of it received during a thunderstorm in the early morning hours on May 26, 2009. The June 2009 geometric mean fell to 10.95 and the season ended with an October geometric mean of 1.87.

Submitted by: Scott Robinett

Scott Robinett
Environmental Specialist
Water Quality Monitoring Unit
Environmental Services Program

Date: 1/18/12

Approved by:

Brian Allen
Acting Director
Environmental Services Program

BA:srt

c: Alan Reinkemeyer, Acting Division Director, DEQ
Steve Feeler, Deputy Division Director, DEQ
John Madras, Director, Water Protection Program

APPENDIX A

Locational Data

Water Quality Survey Report
Lake of the Ozarks
Miller, Camden, Morgan, and Benton Counties

Lake of the Ozarks Water Quality Survey Locational Data

Site #	Cove name	Lake Arm	County	UTM Easting	UTM Northing	Latitude	Longitude	Year(s) Monitored
001A	Jennings Branch Cove	Osage	Camden	530587	4227366	38.1937	-92.6507	2007-2010
001B	Jennings Branch Cove	Osage	Camden	530971	4227926	38.1988	-92.6463	2007-2010
001C	Jennings Branch Cove	Osage	Camden	531293	4228479	38.2037	-92.6426	2007-2010
001D	Jennings Branch Cove	Osage	Camden	530629	4227823	38.1978	-92.6502	2007-2010
001E	Jennings Branch Cove	Osage	Camden	530921	4228416	38.2032	-92.6468	2007-2010
002A	McCoy Branch Cove	Osage	Camden	529203	4228026	38.1997	-92.6665	2007
002B	McCoy Branch Cove	Osage	Camden	529692	4228579	38.2047	-92.6609	2007
002C	McCoy Branch Cove	Osage	Camden	530138	4229007	38.2085	-92.6558	2007
002D	McCoy Branch Cove	Osage	Camden	529413	4228786	38.2066	-92.6641	2007
002E	McCoy Branch Cove	Osage	Camden	529859	4229178	38.2101	-92.6589	2007
003A	Lotell Hollow Cove	Osage	Miller	530680	4230634	38.2232	-92.6495	2007
003B	Lotell Hollow Cove	Osage	Miller	530250	4230672	38.2235	-92.6544	2007
003C	Lotell Hollow Cove	Osage	Miller	529959	4230291	38.2201	-92.6578	2007
003D	Lotell Hollow Cove	Osage	Miller	530405	4230330	38.2204	-92.6527	2007
003E	Lotell Hollow Cove	Osage	Miller	530140	4230248	38.2197	-92.6557	2007
004A	Cove 004	Osage	Camden	528793	4228839	38.2071	-92.6711	2007
004B	Cove 004	Osage	Camden	529227	4229168	38.2100	-92.6662	2007
004C	Cove 004	Osage	Camden	529005	4229284	38.2111	-92.6687	2007
005A	Cove 005	Osage	Camden	528400	4228960	38.2082	-92.6756	2007
005B	Cove 005	Osage	Camden	528238	4229161	38.2100	-92.6775	2007
005C	Cove 005	Osage	Camden	527980	4229053	38.2090	-92.6804	2007
006A	Birdsong Hollow Cove	Osage	Miller	529831	4230947	38.2260	-92.6592	2007
006B	Birdsong Hollow Cove	Osage	Miller	529187	4230764	38.2244	-92.6666	2007
006C	Birdsong Hollow Cove	Osage	Miller	529059	4230510	38.2221	-92.6680	2007
007A	Jobson Hollow Cove	Osage	Miller	528703	4231705	38.2329	-92.6720	2007
007B	Jobson Hollow Cove	Osage	Miller	528209	4231175	38.2281	-92.6777	2007
007C	Jobson Hollow Cove	Osage	Miller	528491	4231109	38.2275	-92.6745	2007
008A	Downing Branch Cove	Osage	Camden	527102	4227800	38.1977	-92.6905	2007
008B	Downing Branch Cove	Osage	Camden	526788	4228634	38.2053	-92.6940	2007
008C	Downing Branch Cove	Osage	Camden	527145	4229224	38.2106	-92.6899	2007
008D	Downing Branch Cove	Osage	Camden	526270	4227771	38.1975	-92.7000	2007
008E	Downing Branch Cove	Osage	Camden	526413	4228552	38.2045	-92.6983	2007
008F	Downing Branch Cove	Osage	Camden	526652	4229287	38.2112	-92.6956	2007
009A	Cove 009	Osage	Camden	525891	4228658	38.2055	-92.7043	2007-2010
009B	Cove 009	Osage	Camden	526144	4229291	38.2112	-92.7014	2007-2010
009C	Cove 009	Osage	Camden	526179	4229636	38.2143	-92.7010	2007-2010
009D	Cove 009	Osage	Camden	525752	4229071	38.2092	-92.7059	2007-2010
009E	Cove 009	Osage	Camden	525905	4229490	38.2130	-92.7041	2007-2010
010A	Cove 010	Osage	Camden	525395	4229246	38.2108	-92.7099	2007
010B	Cove 010	Osage	Camden	525505	4229790	38.2157	-92.7087	2007
010C	Cove 010	Osage	Camden	525042	4229396	38.2122	-92.7140	2007
010D	Cove 010	Osage	Camden	525041	4229694	38.2149	-92.7140	2007
011A	Cornett Branch Cove	Osage	Camden	524489	4228165	38.2011	-92.7203	2007
011B	Cornett Branch Cove	Osage	Camden	523999	4228963	38.2083	-92.7259	2007
011C	Cornett Branch Cove	Osage	Camden	524646	4228941	38.2081	-92.7185	2007
011D	Cornett Branch Cove	Osage	Camden	524552	4229694	38.2149	-92.7195	2007
011E	Cornett Branch Cove	Osage	Camden	523704	4228421	38.2034	-92.7293	2007
011F	Cornett Branch Cove	Osage	Camden	523633	4229195	38.2104	-92.7301	2007
011G	Cornett Branch Cove	Osage	Camden	523569	4229555	38.2137	-92.7308	2007
012A	Raccoon Hollow Cove	Gravois	Morgan	523482	4233097	38.2456	-92.7317	2007
012B	Raccoon Hollow Cove	Gravois	Morgan	523245	4232487	38.2401	-92.7344	2007
012C	Raccoon Hollow Cove	Gravois	Morgan	523125	4232203	38.2375	-92.7358	2007
012D	Raccoon Hollow Cove	Gravois	Morgan	523665	4232401	38.2393	-92.7296	2007
012E	Raccoon Hollow Cove	Gravois	Morgan	523495	4232140	38.2370	-92.7315	2007
013A	North Buck Creek	Osage	Morgan	519494	4230455	38.2219	-92.7773	2007
013B	North Buck Creek	Osage	Morgan	519912	4230006	38.2178	-92.7725	2007

Lake of the Ozarks Water Quality Survey Locational Data

Site #	Cove name	Lake Arm	County	UTM Easting	UTM Northing	Latitude	Longitude	Year(s) Monitored
013C	North Buck Creek	Osage	Morgan	520219	4229478	38.2130	-92.7690	2007
013D	North Buck Creek	Osage	Morgan	520200	4230501	38.2223	-92.7692	2007
013E	North Buck Creek	Osage	Morgan	520550	4229935	38.2172	-92.7653	2007
014A	Cove 014	Osage	Camden	522962	4229040	38.2090	-92.7377	2007
014B	Cove 014	Osage	Camden	522776	4229207	38.2105	-92.7398	2007
014C	Cove 014	Osage	Camden	522252	4229207	38.2106	-92.7458	2007
014D	Cove 014	Osage	Camden	522566	4228984	38.2085	-92.7423	2007
014E	Cove 014	Osage	Camden	522165	4228986	38.2086	-92.7468	2007
015A	Workman Hollow Cove	Osage	Camden	522797	4227511	38.1953	-92.7397	2007
015B	Workman Hollow Cove	Osage	Camden	522885	4228250	38.2019	-92.7386	2007
015C	Workman Hollow Cove	Osage	Camden	522020	4228470	38.2039	-92.7485	2007
015D	Workman Hollow Cove	Osage	Camden	521824	4227786	38.1978	-92.7508	2007
015E	Workman Hollow Cove	Osage	Camden	521527	4227857	38.1984	-92.7542	2007
016A	South Buck Creek	Osage	Morgan	518698	4227940	38.1992	-92.7865	2007
016B	South Buck Creek	Osage	Morgan	519301	4228342	38.2028	-92.7796	2007
016C	South Buck Creek	Osage	Morgan	519929	4228376	38.2031	-92.7724	2007
016D	South Buck Creek	Osage	Morgan	518214	4229336	38.2118	-92.7919	2007
016E	South Buck Creek	Osage	Morgan	518828	4228682	38.2059	-92.7850	2007
016F	South Buck Creek	Osage	Morgan	519706	4228620	38.2053	-92.7749	2007
017A	Cape Hollow Cove	Osage	Morgan	519439	4227219	38.1927	-92.7780	2007
017B	Cape Hollow Cove	Osage	Morgan	520016	4227611	38.1962	-92.7714	2007
017C	Cape Hollow Cove	Osage	Morgan	520379	4227591	38.1960	-92.7673	2007
017D	Cape Hollow Cove	Osage	Morgan	519945	4227844	38.1983	-92.7722	2007
017E	Cape Hollow Cove	Osage	Morgan	520146	4228020	38.1999	-92.7699	2007
018A	Lynch Hollow Cove	Osage	Camden	521373	4223710	38.1610	-92.7560	2007
018B	Lynch Hollow Cove	Osage	Camden	521943	4223979	38.1634	-92.7495	2007
018C	Lynch Hollow Cove	Osage	Camden	522155	4225171	38.1742	-92.7471	2007
018D	Lynch Hollow Cove	Osage	Camden	521624	4224634	38.1694	-92.7531	2007
018E	Lynch Hollow Cove	Osage	Camden	521645	4225196	38.1744	-92.7529	2007
019A	Cove 019	Osage	Camden	524954	4226703	38.1879	-92.7151	2007
019B	Cove 019	Osage	Camden	525214	4226494	38.1860	-92.7121	2007
019C	Cove 019	Osage	Camden	525391	4226818	38.1889	-92.7101	2007
019D	Cove 019	Osage	Camden	525713	4226837	38.1891	-92.7064	2007
019E	Cove 019	Osage	Camden	525627	4226531	38.1863	-92.7074	2007
020A	Cove 020	Osage	Camden	526933	4226725	38.1881	-92.6925	2007
020B	Cove 020	Osage	Camden	527213	4226783	38.1886	-92.6893	2007
020C	Cove 020	Osage	Camden	527523	4226465	38.1857	-92.6857	2007
021A	Chimney Cove	Osage	Camden	525471	4224034	38.1638	-92.7092	2007
021B	Chimney Cove	Osage	Camden	526194	4224727	38.1701	-92.7010	2007
021C	Chimney Cove	Osage	Camden	525820	4225047	38.1730	-92.7052	2007
022A	Middle Hollow Cove	Osage	Camden	526926	4224009	38.1636	-92.6926	2007
022B	Middle Hollow Cove	Osage	Camden	527020	4224712	38.1699	-92.6915	2007
022C	Middle Hollow Cove	Osage	Camden	526629	4224534	38.1683	-92.6960	2007
023A	Forked Hollow Cove	Osage	Camden	527567	4224117	38.1645	-92.6853	2007
023B	Forked Hollow Cove	Osage	Camden	528376	4224761	38.1703	-92.6761	2007
023C	Forked Hollow Cove	Osage	Camden	527656	4225330	38.1755	-92.6843	2007
024A	Cove 024	Osage	Camden	529263	4225411	38.1761	-92.6659	2007
024B	Cove 024	Osage	Camden	529648	4225824	38.1799	-92.6615	2007
024C	Cove 024	Osage	Camden	529477	4225689	38.1786	-92.6634	2007
025A	Cove 025	Osage	Camden	529893	4225530	38.1772	-92.6587	2007
025B	Cove 025	Osage	Camden	529994	4225964	38.1811	-92.6575	2007
025C	Cove 025	Osage	Camden	529859	4225879	38.1803	-92.6591	2007
026A	Cove 026	Osage	Camden	530691	4225405	38.1760	-92.6496	2007
026B	Cove 026	Osage	Camden	530749	4225766	38.1793	-92.6489	2007
026C	Cove 026	Osage	Camden	530576	4225781	38.1794	-92.6509	2007
027A	Davey Hollow Cove	Osage	Camden	523328	4224158	38.1650	-92.7337	2007

Lake of the Ozarks Water Quality Survey Locational Data

Site #	Cove name	Lake Arm	County	UTM Easting	UTM Northing	Latitude	Longitude	Year(s) Monitored
027B	Davey Hollow Cove	Osage	Camden	523832	4224570	38.1687	-92.7279	2007
027C	Davey Hollow Cove	Osage	Camden	524194	4224978	38.1724	-92.7238	2007
027D	Davey Hollow Cove	Osage	Camden	523739	4224903	38.1717	-92.7290	2007
027E	Davey Hollow Cove	Osage	Camden	524168	4225262	38.1750	-92.7241	2007
028A	Dry Branch Cove	Osage	Morgan	526262	4231677	38.2327	-92.6999	2007
028B	Dry Branch Cove	Osage	Morgan	525981	4231051	38.2271	-92.7032	2007
028C	Dry Branch Cove	Osage	Morgan	526469	4231141	38.2279	-92.6976	2007
029A	Pogue Hollow	Osage	Camden	532702	4223040	38.1547	-92.6267	2008
029B	Pogue Hollow	Osage	Camden	532078	4223270	38.1567	-92.6339	2008
029C	Pogue Hollow	Osage	Camden	531994	4222958	38.1539	-92.6348	2008
029D	Pogue Hollow	Osage	Camden	532706	4223428	38.1581	-92.6267	2008
029E	Pogue Hollow	Osage	Camden	532793	4224927	38.1717	-92.6256	2008
030A	Ham Rock Cove	Osage	Camden	532302	4222510	38.1499	-92.6313	2008
030B	Ham Rock Cove	Osage	Camden	532191	4222703	38.1516	-92.6326	2008
030C	Ham Rock Cove	Osage	Camden	532475	4222704	38.1516	-92.6294	2008
031A	Cove 031	Osage	Camden	532915	4222848	38.1529	-92.6243	2008
031B	Cove 031	Osage	Camden	532942	4223100	38.1552	-92.6240	2008
031C	Cove 031	Osage	Camden	532220	4223186	38.1560	-92.6322	2008
032A	Cove 032	Osage	Camden	532024	4222955	38.1539	-92.6345	2008
032B	Cove 032	Osage	Camden	532314	4222516	38.1499	-92.6312	2008
032C	Cove 032	Osage	Camden	532494	4222565	38.1504	-92.6291	2008
033A	Shawnee Bend Cove	Osage	Camden	530681	4224391	38.1669	-92.6498	2008
033B	Shawnee Bend Cove	Osage	Camden	531266	4224011	38.1635	-92.6431	2008
033C	Shawnee Bend Cove	Osage	Camden	530492	4224121	38.1645	-92.6519	2008
033D	Shawnee Bend Cove	Osage	Camden	531142	4223744	38.1611	-92.6445	2008
034A	Cove 034	Osage	Camden	530742	4223359	38.1576	-92.6491	2008
034B	Cove 034	Osage	Camden	531049	4223238	38.1565	-92.6456	2008
034C	Cove 034	Osage	Camden	530919	4222772	38.1523	-92.6471	2008
035A	Cove 035	Osage	Camden	529890	4223054	38.1549	-92.6588	2008
035B	Cove 035	Osage	Camden	530388	4222916	38.1536	-92.6532	2008
035C	Cove 035	Osage	Camden	530061	4217572	38.1055	-92.6571	2008
036A	Fish Hatchery Cove	Grand Glaize	Camden	532056	4220978	38.1361	-92.6342	2008
036B	Fish Hatchery Cove	Grand Glaize	Camden	531778	4220667	38.1333	-92.6374	2008
036C	Fish Hatchery Cove	Grand Glaize	Camden	532021	4220506	38.1318	-92.6346	2008
037A	Anderson Hollow	Grand Glaize	Camden	529929	4215843	38.0899	-92.6587	2008
037B	Anderson Hollow	Grand Glaize	Camden	530190	4216507	38.0959	-92.6557	2008
037C	Anderson Hollow	Grand Glaize	Camden	530423	4217699	38.1066	-92.6530	2008
037D	Anderson Hollow	Grand Glaize	Camden	529977	4217068	38.1009	-92.6581	2008
037E	Anderson Hollow	Grand Glaize	Camden	530061	4217572	38.1055	-92.6571	2008
038A	Pin Oak Hollow	Grand Glaize	Camden	533486	4218542	38.1141	-92.6180	2008
038B	Pin Oak Hollow	Grand Glaize	Camden	531736	4218819	38.1166	-92.6380	2008
038C	Pin Oak Hollow	Grand Glaize	Camden	531736	4218602	38.1147	-92.6380	2008
039A	Brushy Hollow	Grand Glaize	Camden	528836	4216948	38.0999	-92.6711	2008
039B	Brushy Hollow	Grand Glaize	Camden	528646	4217396	38.1039	-92.6733	2008
039C	Brushy Hollow	Grand Glaize	Camden	529280	4217768	38.1073	-92.6660	2008
040A	Watson Hollow	Grand Glaize	Camden	532987	4220562	38.1323	-92.6236	2008
040B	Watson Hollow	Grand Glaize	Camden	532678	4220089	38.1281	-92.6272	2008
040C	Watson Hollow	Grand Glaize	Camden	532259	4219697	38.1245	-92.6320	2008
040D	Watson Hollow	Grand Glaize	Camden	532814	4219736	38.1249	-92.6256	2008
040E	Watson Hollow	Grand Glaize	Camden	532566	4219149	38.1196	-92.6285	2008
041A	Harpers-Darby Hollow	Osage	Camden	529114	4220623	38.1330	-92.6678	2008
041B	Harpers-Darby Hollow	Osage	Camden	529818	4221116	38.1374	-92.6597	2008
041C	Harpers-Darby Hollow	Osage	Camden	530362	4221451	38.1404	-92.6535	2008
041D	Harpers-Darby Hollow	Osage	Camden	530048	4220588	38.1326	-92.6571	2008
041E	Harpers-Darby Hollow	Osage	Camden	530301	4220740	38.1340	-92.6542	2008
042A	Cove 042	Osage	Camden	529307	4221278	38.1389	-92.6656	2008

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Site #	Cove name	Lake Arm	County	UTM Easting	UTM Northing	Latitude	Longitude	Year(s) Monitored
042B	Cove 042	Osage	Camden	529185	4221585	38.1417	-92.6669	2008
042C	Cove 042	Osage	Camden	529696	4221464	38.1406	-92.6611	2008
043A	Cove 043	Osage	Camden	528171	4221467	38.1406	-92.6785	2008
043B	Cove 043	Osage	Camden	528094	4221804	38.1437	-92.6794	2008
043C	Cove 043	Osage	Camden	528600	4221251	38.1387	-92.6736	2008
043D	Cove 043	Osage	Camden	528735	4221379	38.1398	-92.6721	2008
044A	Salt Hollow	Osage	Camden	527410	4220809	38.1347	-92.6872	2008
044B	Salt Hollow	Osage	Camden	527116	4221455	38.1406	-92.6906	2008
044C	Salt Hollow	Osage	Camden	527725	4221334	38.1394	-92.6836	2008
045A	Miller Hollow	Osage	Camden	526639	4221803	38.1437	-92.6960	2008
045B	Miller Hollow	Osage	Camden	527082	4222029	38.1457	-92.6909	2008
045C	Miller Hollow	Osage	Camden	527182	4221430	38.1403	-92.6898	2008
045D	Miller Hollow	Osage	Camden	527583	4221757	38.1433	-92.6852	2008
046A	Woods Hollow	Osage	Camden	525338	4221911	38.1447	-92.7108	2008
046B	Woods Hollow	Osage	Camden	525604	4222190	38.1472	-92.7078	2008
046C	Woods Hollow	Osage	Camden	525288	4222312	38.1483	-92.7114	2008
047A	Cove 047	Osage	Camden	523883	4221558	38.1416	-92.7275	2008
047B	Cove 047	Osage	Camden	523992	4221302	38.1393	-92.7262	2008
047C	Cove 047	Osage	Camden	523742	4221069	38.1372	-92.7291	2008
047D	Cove 047	Osage	Camden	523802	4220935	38.1360	-92.7284	2008
048A	Cove 048	Osage	Camden	524974	4220278	38.1300	-92.7150	2008-2009
048B	Cove 048	Osage	Camden	524814	4219922	38.1268	-92.7169	2008-2009
048C	Cove 048	Osage	Camden	524962	4219894	38.1265	-92.7152	2008-2009
048D	Cove 048	Osage	Camden	525328	4220016	38.1276	-92.7110	2008-2009
049A	Bee Hole Hollow	Osage	Camden	525738	4219587	38.1238	-92.7064	2008
049B	Bee Hole Hollow	Osage	Camden	525584	4219540	38.1233	-92.7081	2008
049C	Bee Hole Hollow	Osage	Camden	525287	4219525	38.1232	-92.7115	2008
050A	Cove 050	Osage	Camden	524191	4220644	38.1333	-92.7240	2008
050B	Cove 050	Osage	Camden	524031	4220608	38.1330	-92.7258	2008
050C	Cove 050	Osage	Camden	524022	4220551	38.1325	-92.7259	2008
051A	Crabtree Cove	Osage	Camden	522993	4218555	38.1145	-92.7377	2008
051B	Crabtree Cove	Osage	Camden	522931	4218511	38.1141	-92.7384	2008
051C	Crabtree Cove	Osage	Camden	523899	4218675	38.1156	-92.7274	2008
051D	Crabtree Cove	Osage	Camden	524233	4218758	38.1163	-92.7236	2008
052A	Cove 052	Osage	Camden	526577	4216931	38.0998	-92.6969	2008
052B	Cove 052	Osage	Camden	526494	4216740	38.0981	-92.6978	2008
052C	Cove 052	Osage	Camden	525752	4216513	38.0961	-92.7063	2008
052D	Cove 052	Osage	Camden	526289	4216959	38.1001	-92.7002	2008
053A	Racetrack Hollow	Osage	Camden	525736	4216668	38.0974	-92.7065	2008
053B	Racetrack Hollow	Osage	Camden	525642	4215502	38.0869	-92.7076	2008
053C	Racetrack Hollow	Osage	Camden	525310	4215819	38.0898	-92.7114	2008
053D	Racetrack Hollow	Osage	Camden	525233	4216222	38.0934	-92.7122	2008
053E	Racetrack Hollow	Osage	Camden	525141	4216493	38.0959	-92.7133	2008
054A	Cove 054	Osage	Camden	523405	4216347	38.0946	-92.7331	2008
054B	Cove 054	Osage	Camden	523700	4216322	38.0944	-92.7297	2008
054C	Cove 054	Osage	Camden	523810	4216461	38.0956	-92.7285	2008
055A	Toad Cove	Osage	Camden	522086	4228753	38.2065	-92.7477	2008
055B	Toad Cove	Osage	Camden	521983	4228832	38.2072	-92.7489	2008
055C	Toad Cove	Osage	Camden	521811	4228586	38.2050	-92.7509	2008
056A	Linn Creek East	Osage	Camden	524232	4211589	38.0517	-92.7238	2009
056B	Linn Creek East	Osage	Camden	524135	4212399	38.0590	-92.7249	2009
056C	Linn Creek East	Osage	Camden	523062	4213965	38.0732	-92.7371	2009
056D	Linn Creek East	Osage	Camden	522610	4214682	38.0796	-92.7422	2009
057A	Linn Creek West	Osage	Camden	523779	4212066	38.0560	-92.7290	2009
057B	Linn Creek West	Osage	Camden	523058	4213039	38.0648	-92.7371	2009
057C	Linn Creek West	Osage	Camden	522055	4213948	38.0730	-92.7485	2009

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057D	Linn Creek West	Osage	Camden	521514	4214015	38.0736	-92.7547	2009
058A	Possum Hollow	Osage	Camden	522154	4212290	38.0581	-92.7475	2009
058B	Possum Hollow	Osage	Camden	522391	4212742	38.0622	-92.7448	2009
058C	Possum Hollow	Osage	Camden	522121	4212765	38.0624	-92.7478	2009
058D	Possum Hollow	Osage	Camden	522238	4213630	38.0702	-92.7465	2009
059A	Libby Hollow	Big Niangua	Camden	519304	4214214	38.0755	-92.7799	2009
059B	Libby Hollow	Big Niangua	Camden	520094	4213961	38.0732	-92.7709	2009
059C	Libby Hollow	Big Niangua	Camden	519927	4213861	38.0723	-92.7728	2009
059D	Libby Hollow	Big Niangua	Camden	520138	4213706	38.0709	-92.7704	2009
059E	Libby Hollow	Big Niangua	Camden	520095	4213406	38.0682	-92.7709	2009
060A	Anthony Hollow	Big Niangua	Camden	518767	4214857	38.0813	-92.7860	2009
060B	Anthony Hollow	Big Niangua	Camden	518900	4214591	38.0789	-92.7845	2009
060C	Anthony Hollow	Big Niangua	Camden	518690	4214046	38.0740	-92.7869	2009
061A	Cove 061	Big Niangua	Camden	516723	4215329	38.0856	-92.8093	2009
061B	Cove 061	Big Niangua	Camden	516775	4215585	38.0879	-92.8087	2009
061C	Cove 061	Big Niangua	Camden	516538	4215562	38.0877	-92.8114	2009
062A	Narrows Hollow	Big Niangua	Camden	515996	4215084	38.0834	-92.8176	2009
062B	Narrows Hollow	Big Niangua	Camden	515986	4215350	38.0858	-92.8177	2009
062C	Narrows Hollow	Big Niangua	Camden	515907	4215505	38.0872	-92.8186	2009
063A	Swift Hollow	Big Niangua	Camden	515452	4214961	38.0823	-92.8238	2009
063B	Swift Hollow	Big Niangua	Camden	515496	4214872	38.0815	-92.8233	2009
063C	Swift Hollow	Big Niangua	Camden	515716	4214517	38.0783	-92.8208	2009
064A	Barnes Hollow	Big Niangua	Camden	516546	4212034	38.0559	-92.8114	2009
064B	Barnes Hollow	Big Niangua	Camden	515001	4212297	38.0583	-92.8290	2009
064C	Barnes Hollow	Big Niangua	Camden	515914	4212054	38.0561	-92.8186	2009
065A	EE Area	Little Niangua	Camden	514955	4212478	38.0599	-92.8295	2009
065B	EE Area	Little Niangua	Camden	514962	4212086	38.0564	-92.8295	2009
065C	EE Area	Little Niangua	Camden	515283	4211696	38.0529	-92.8258	2009
065D	EE Area	Little Niangua	Camden	514283	4211689	38.0528	-92.8372	2009
065E	EE Area	Little Niangua	Camden	513826	4212056	38.0561	-92.8424	2009
066A	Jackson Hollow	Little Niangua	Camden	513769	4214694	38.0799	-92.8430	2009
066B	Jackson Hollow	Little Niangua	Camden	513857	4214584	38.0789	-92.8420	2009
066C	Jackson Hollow	Little Niangua	Camden	513664	4214369	38.0770	-92.8442	2009
067A	Windermere Cove	Big Niangua	Camden	514434	4209422	38.0324	-92.8355	2009
067B	Windermere Cove	Big Niangua	Camden	514410	4209597	38.0340	-92.8358	2009
067C	Windermere Cove	Big Niangua	Camden	514895	4209609	38.0341	-92.8303	2009
067D	Windermere Cove	Big Niangua	Camden	514750	4209864	38.0364	-92.8319	2009
068A	Owens Hollow	Big Niangua	Camden	514290	4207505	38.0151	-92.8372	2009
068B	Owens Hollow	Big Niangua	Camden	514435	4207737	38.0172	-92.8355	2009
068C	Owens Hollow	Big Niangua	Camden	514678	4208077	38.0203	-92.8328	2009
069A	Morrow Hollow	Big Niangua	Camden	515289	4207084	38.0113	-92.8258	2009
069B	Morrow Hollow	Big Niangua	Camden	515260	4207445	38.0146	-92.8262	2009
069C	Morrow Hollow	Big Niangua	Camden	515102	4207517	38.0152	-92.8280	2009
070A	Cove 070	Big Niangua	Camden	517835	4206565	38.0066	-92.7968	2009
070B	Cove 070	Big Niangua	Camden	518093	4206631	38.0072	-92.7939	2009
070C	Cove 070	Big Niangua	Camden	517928	4206762	38.0084	-92.7958	2009
071A	Cove 071	Big Niangua	Camden	519161	4206979	38.0103	-92.7817	2009
071B	Cove 071	Big Niangua	Camden	518836	4206869	38.0093	-92.7854	2009
071C	Cove 071	Big Niangua	Camden	519008	4206796	38.0086	-92.7835	2009
072A	Cove 072	Big Niangua	Camden	518982	4205808	37.9997	-92.7838	2009
072B	Cove 072	Big Niangua	Camden	518849	4205821	37.9999	-92.7853	2009
072C	Cove 072	Big Niangua	Camden	518794	4205696	37.9987	-92.7859	2009
073A	Cove 073	Big Niangua	Camden	518343	4204555	37.9885	-92.7911	2009
073B	Cove 073	Big Niangua	Camden	518333	4204622	37.9891	-92.7912	2009
073C	Cove 073	Big Niangua	Camden	518477	4204691	37.9897	-92.7896	2009
074A	Minnow Brook	Big Niangua	Camden	519385	4204744	37.9901	-92.7792	2009

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074B	Minnow Brook	Big Niangua	Camden	519073	4204768	37.9904	-92.7828	2009
074C	Minnow Brook	Big Niangua	Camden	519107	4204575	37.9886	-92.7824	2009
075A	Ha Ha Tonka Branch	Big Niangua	Camden	519969	4203082	37.9751	-92.7726	2009
075B	Ha Ha Tonka Branch	Big Niangua	Camden	519509	4203072	37.9751	-92.7779	2009
075C	Ha Ha Tonka Branch	Big Niangua	Camden	519520	4202945	37.9739	-92.7777	2009
076A	Standing Rock Hollow	Osage	Camden	518086	4217289	38.1032	-92.7937	2009
076B	Standing Rock Hollow	Osage	Camden	518317	4217113	38.1016	-92.7911	2009
076C	Standing Rock Hollow	Osage	Camden	518701	4216657	38.0975	-92.7867	2009
076D	Standing Rock Hollow	Osage	Camden	518516	4217115	38.1017	-92.7888	2009
076E	Standing Rock Hollow	Osage	Camden	518776	4217088	38.1014	-92.7858	2009
077A	Eady Hollow	Osage	Camden	519937	4218427	38.1134	-92.7726	2009
077B	Eady Hollow	Osage	Camden	519694	4218106	38.1106	-92.7754	2009
077C	Eady Hollow	Osage	Camden	519424	4218610	38.1151	-92.7784	2009
078A	Crane-Hart Hollow	Osage	Camden	518855	4219657	38.1246	-92.7849	2009
078B	Crane-Hart Hollow	Osage	Camden	519317	4219234	38.1207	-92.7796	2009
078C	Crane-Hart Hollow	Osage	Camden	518865	4219264	38.1210	-92.7848	2009
079A	Francis Hollow	Osage	Camden	518471	4220287	38.1302	-92.7892	2009
079B	Francis Hollow	Osage	Camden	518131	4219887	38.1266	-92.7931	2009
079C	Francis Hollow	Osage	Camden	517933	4219770	38.1256	-92.7954	2009
079D	Francis Hollow	Osage	Camden	518441	4219923	38.1270	-92.7896	2009
080A	Kendrick Hollow	Osage	Camden	516470	4219068	38.1193	-92.8121	2009
080B	Kendrick Hollow	Osage	Camden	516890	4219180	38.1203	-92.8073	2009
080C	Kendrick Hollow	Osage	Camden	516662	4219346	38.1218	-92.8099	2009
081A	Laurie Hollow	Osage	Camden	515043	4219828	38.1262	-92.8284	2009-2010
081B	Laurie Hollow	Osage	Camden	515513	4220477	38.1320	-92.8230	2009-2010
081C	Laurie Hollow	Osage	Camden	515902	4220369	38.1310	-92.8186	2009-2010
081D	Laurie Hollow	Osage	Camden	515368	4220746	38.1344	-92.8246	2009-2010
081E	Laurie Hollow	Osage	Camden	516042	4220977	38.1365	-92.8169	2009-2010
082A	Welcher Hollow	Osage	Camden	518355	4222745	38.1524	-92.7905	2009
082B	Welcher Hollow	Osage	Camden	518391	4222456	38.1498	-92.7901	2009
082C	Welcher Hollow	Osage	Camden	517953	4222045	38.1461	-92.7951	2009
082D	Welcher Hollow	Osage	Camden	517795	4222266	38.1481	-92.7969	2009
083A	Fan Hollow	Osage	Camden	517593	4225126	38.1739	-92.7991	2010
083B	Fan Hollow	Osage	Camden	518206	4225003	38.1728	-92.7921	2010
083C	Fan Hollow	Osage	Camden	517673	4224874	38.1716	-92.7982	2010
084A	Porter Mill Hollow	Osage	Camden	516373	4225254	38.1751	-92.8131	2010
084B	Porter Mill Hollow	Osage	Camden	516815	4225383	38.1762	-92.8080	2010
084C	Porter Mill Hollow	Osage	Camden	516962	4224801	38.1710	-92.8064	2010
084D	Porter Mill Hollow	Osage	Camden	516472	4224721	38.1702	-92.8120	2010
085A	Brush Creek Cove	Osage	Camden	514624	4224566	38.1689	-92.8331	2010
085B	Brush Creek Cove	Osage	Camden	514892	4224036	38.1641	-92.8300	2010
085C	Brush Creek Cove	Osage	Camden	515260	4223785	38.1618	-92.8258	2010
085D	Brush Creek Cove	Osage	Camden	515193	4224220	38.1658	-92.8266	2010
085E	Brush Creek Cove	Osage	Camden	515578	4224058	38.1643	-92.8222	2010
086A	Alcorn Hollow	Osage	Camden	512405	4220451	38.1318	-92.8585	2010
086B	Alcorn Hollow	Osage	Camden	513183	4220644	38.1336	-92.8496	2010
086C	Alcorn Hollow	Osage	Camden	513329	4221003	38.1368	-92.8479	2010
086D	Alcorn Hollow	Osage	Camden	512924	4220840	38.1353	-92.8525	2010
086E	Alcorn Hollow	Osage	Camden	513057	4221213	38.1387	-92.8510	2010
087A	Bollinger Creek Cove	Osage	Camden	507145	4223183	38.1565	-92.9184	2010
087B	Bollinger Creek Cove	Osage	Camden	507978	4223133	38.1560	-92.9089	2010
087C	Bollinger Creek Cove	Osage	Camden	509216	4223330	38.1578	-92.8948	2010
087D	Bollinger Creek Cove	Osage	Camden	508166	4223556	38.1599	-92.9068	2010
087E	Bollinger Creek Cove	Osage	Camden	509053	4224175	38.1654	-92.8967	2010
088A	Cartwright Springs Bay	Osage	Camden	510881	4226451	38.1859	-92.8758	2010
088B	Cartwright Springs Bay	Osage	Camden	510072	4226421	38.1857	-92.8850	2010

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088C	Cartwright Springs Bay	Osage	Camden	508861	4226432	38.1858	-92.8988	2010
088D	Cartwright Springs Bay	Osage	Camden	510211	4225941	38.1813	-92.8834	2010
089A	Cove 089	Osage	Camden	507852	4225288	38.1755	-92.9104	2010
089B	Cove 089	Osage	Camden	507461	4225545	38.1778	-92.9148	2010
089C	Cove 089	Osage	Camden	507227	4225556	38.1779	-92.9175	2010
090A	Blue Cat Cove	Osage	Camden	505374	4226509	38.1865	-92.9386	2010
090B	Blue Cat Cove	Osage	Camden	505351	4226093	38.1827	-92.9389	2010
090C	Blue Cat Cove	Osage	Camden	505022	4225837	38.1804	-92.9427	2010
091A	Pearson Bay	Osage	Camden	501227	4223504	38.1594	-92.9860	2010
091B	Pearson Bay	Osage	Camden	501017	4223939	38.1633	-92.9884	2010
091C	Pearson Bay	Osage	Camden	501464	4224291	38.1665	-92.9833	2010
091D	Pearson Bay	Osage	Camden	501812	4224681	38.1700	-92.9793	2010
091E	Pearson Bay	Osage	Camden	502465	4223959	38.1635	-92.9719	2010
092A	Proctor Creek	Osage	Morgan	505109	4233316	38.2478	-92.9416	2010
092B	Proctor Creek	Osage	Morgan	505862	4232776	38.2430	-92.9330	2010
092C	Proctor Creek	Osage	Morgan	504441	4233169	38.2465	-92.9492	2010
092D	Proctor Creek	Osage	Morgan	504793	4232303	38.2387	-92.9452	2010
092E	Proctor Creek	Osage	Morgan	504013	4232191	38.2377	-92.9541	2010
093A	Ivy Bend	Osage	Morgan	500995	4228096	38.2008	-92.9886	2010
093B	Ivy Bend	Osage	Morgan	501199	4228311	38.2027	-92.9863	2010
093C	Ivy Bend	Osage	Morgan	501428	4228245	38.2022	-92.9837	2010
094A	Rainy Creek Cove	Osage	Camden	496980	4225115	38.1739	-93.0345	2010
094B	Rainy Creek Cove	Osage	Camden	497483	4224388	38.1674	-93.0287	2010
094C	Rainy Creek Cove	Osage	Camden	499486	4225522	38.1776	-93.0059	2010
094D	Rainy Creek Cove	Osage	Camden	498882	4226242	38.1841	-93.0128	2010
095A	Cove 095	Gravois	Morgan	521975	4230923	38.2260	-92.7489	2010
095B	Cove 095	Gravois	Morgan	521432	4230923	38.2260	-92.7551	2010
095C	Cove 095	Gravois	Morgan	521099	4231337	38.2298	-92.7589	2010
095D	Cove 095	Gravois	Morgan	520915	4232016	38.2359	-92.7610	2010
096A	Cove 096	Gravois	Morgan	522617	4232302	38.2384	-92.7416	2010
096B	Cove 096	Gravois	Morgan	522462	4232308	38.2385	-92.7433	2010
096C	Cove 096	Gravois	Morgan	522525	4232383	38.2392	-92.7426	2010
097A	Gladstone Cove	Gravois	Morgan	520626	4232930	38.2441	-92.7643	2010
097B	Gladstone Cove	Gravois	Morgan	521310	4233155	38.2462	-92.7565	2010
097C	Gladstone Cove	Gravois	Morgan	520963	4233621	38.2504	-92.7604	2010
098A	Cedar Creek	Gravois	Morgan	522934	4235035	38.2631	-92.7378	2010
098B	Cedar Creek	Gravois	Morgan	522712	4234710	38.2601	-92.7404	2010
098C	Cedar Creek	Gravois	Morgan	522330	4234962	38.2624	-92.7448	2010
099A	Mill Creek Cove	Gravois	Morgan	518339	4233033	38.2451	-92.7904	2010
099B	Mill Creek Cove	Gravois	Morgan	518807	4232898	38.2439	-92.7851	2010
099C	Mill Creek Cove	Gravois	Morgan	520023	4233088	38.2456	-92.7712	2010
099D	Mill Creek Cove	Gravois	Morgan	519045	4233842	38.2524	-92.7823	2010
099E	Mill Creek Cove	Gravois	Morgan	520016	4234093	38.2546	-92.7712	2010
100A	Bogue Bay	Gravois	Morgan	522332	4237136	38.2820	-92.7447	2010
100B	Bogue Bay	Gravois	Morgan	521524	4236586	38.2771	-92.7539	2010
100C	Bogue Bay	Gravois	Morgan	522027	4236552	38.2768	-92.7482	2010
100D	Bogue Bay	Gravois	Morgan	521775	4236192	38.2735	-92.7511	2010
101A	Soap Creek Cove	Gravois	Morgan	516417	4236307	38.2747	-92.8123	2010
101B	Soap Creek Cove	Gravois	Morgan	517483	4236097	38.2728	-92.8001	2010
101C	Soap Creek Cove	Gravois	Morgan	518047	4235838	38.2704	-92.7937	2010
101D	Soap Creek Cove	Gravois	Morgan	517150	4236755	38.2787	-92.8039	2010
102A	Indian Creek Cove	Gravois	Morgan	523032	4239166	38.3003	-92.7366	2010
102B	Indian Creek Cove	Gravois	Morgan	521966	4239941	38.3073	-92.7488	2010
102C	Indian Creek Cove	Gravois	Morgan	520913	4238283	38.2924	-92.7609	2010
102D	Indian Creek Cove	Gravois	Morgan	520390	4239241	38.3010	-92.7668	2010
102E	Indian Creek Cove	Gravois	Morgan	519167	4238086	38.2906	-92.7808	2010

Lake of the Ozarks Water Quality Survey Locational Data

Site #	Cove name	Lake Arm	County	UTM Easting	UTM Northing	Latitude	Longitude	Year(s) Monitored
102F	Indian Creek Cove	Gravois	Morgan	519799	4237462	38.2850	-92.7736	2010
103A	Little Gravois Cove	Gravois	Morgan	517694	4242352	38.3291	-92.7976	2010
103B	Little Gravois Cove	Gravois	Morgan	517829	4241679	38.3231	-92.7960	2010
103C	Little Gravois Cove	Gravois	Morgan	516974	4241469	38.3212	-92.8058	2010
104A	Gravois Cove	Gravois	Morgan	515364	4241129	38.3181	-92.8242	2010
104B	Gravois Cove	Gravois	Morgan	515514	4240396	38.3115	-92.8225	2010
104C	Gravois Cove	Gravois	Morgan	516315	4240647	38.3138	-92.8134	2010
105A	Cove 105	Gravois	Morgan	517142	4238166	38.2914	-92.8040	2010
105B	Cove 105	Gravois	Morgan	517268	4238135	38.2911	-92.8025	2010
105C	Cove 105	Gravois	Morgan	517326	4238013	38.2900	-92.8019	2010
106A	Rise Branch	Osage	Camden	497459	4229438	38.2129	-93.0290	2011
106B	Rise Branch	Osage	Camden	498073	4229246	38.2112	-93.0220	2011
106C	Rise Branch	Osage	Camden	497690	4229125	38.2101	-93.0264	2011
107A	Lick Creek	Osage	Camden	497431	4232596	38.2414	-93.0294	2011
107B	Lick Creek	Osage	Camden	498302	4232403	38.2396	-93.0194	2011
107C	Lick Creek	Osage	Camden	497973	4232190	38.2377	-93.0232	2011
108A	Little Buffalo Creek	Osage	Morgan	497981	4236220	38.2740	-93.0231	2011
108B	Little Buffalo Creek	Osage	Morgan	497997	4235276	38.2655	-93.0229	2011
108C	Little Buffalo Creek	Osage	Morgan	497346	4234972	38.2628	-93.0303	2011
108D	Little Buffalo Creek	Osage	Morgan	498353	4234411	38.2577	-93.0188	2011
108E	Little Buffalo Creek	Osage	Morgan	498484	4234086	38.2548	-93.0173	2011
109A	Big Buffalo Creek	Osage	Benton	491813	4237887	38.2890	-93.0936	2011
109B	Big Buffalo Creek	Osage	Benton	492552	4236603	38.2775	-93.0852	2011
109C	Big Buffalo Creek	Osage	Benton	493340	4236312	38.2748	-93.0761	2011
109D	Big Buffalo Creek	Osage	Benton	492290	4236135	38.2732	-93.0881	2011
109E	Big Buffalo Creek	Osage	Benton	492763	4235896	38.2711	-93.0827	2011
110A	Knobby Creek	Osage	Benton	490137	4230174	38.2195	-93.1127	2011
110B	Knobby Creek	Osage	Benton	490840	4230974	38.2267	-93.1047	2011
110C	Knobby Creek	Osage	Benton	490441	4231194	38.2287	-93.1092	2011
111A	Deer Creek	Osage	Benton	486918	4231287	38.2295	-93.1495	2011
111B	Deer Creek	Osage	Benton	487718	4230759	38.2247	-93.1403	2011
111C	Deer Creek	Osage	Benton	488645	4230389	38.2214	-93.1297	2011
111D	Deer Creek	Osage	Benton	488446	4231385	38.2304	-93.1320	2011
111E	Deer Creek	Osage	Benton	488885	4231328	38.2299	-93.1270	2011
112A	Mossy Creek	Osage	Benton	484873	4233579	38.2501	-93.1729	2011
112B	Mossy Creek	Osage	Benton	485480	4233527	38.2496	-93.1659	2011
112C	Mossy Creek	Osage	Benton	485439	4233724	38.2514	-93.1664	2011
113A	Brushy Creek	Osage	Benton	487247	4234455	38.2580	-93.1458	2011
113B	Brushy Creek	Osage	Benton	486090	4234238	38.2561	-93.1590	2011
113C	Brushy Creek	Osage	Benton	486408	4234030	38.2542	-93.1553	2011
114A	Cole Camp Creek	Osage	Benton	479935	4236628	38.2775	-93.2294	2011
114B	Cole Camp Creek	Osage	Benton	480943	4236643	38.2776	-93.2179	2011
114C	Cole Camp Creek	Osage	Benton	481498	4235615	38.2684	-93.2115	2011
114D	Cole Camp Creek	Osage	Benton	480520	4237005	38.2809	-93.2227	2011
114E	Cole Camp Creek	Osage	Benton	481844	4235844	38.2705	-93.2076	2011
115A	Turkey Creek	Osage	Benton	477860	4233560	38.2498	-93.2530	2011
115B	Turkey Creek	Osage	Benton	478906	4233312	38.2476	-93.2411	2011
115C	Turkey Creek	Osage	Benton	479761	4234012	38.2539	-93.2313	2011
115D	Turkey Creek	Osage	Benton	478869	4233654	38.2507	-93.2415	2011
115E	Turkey Creek	Osage	Benton	479069	4234509	38.2584	-93.2392	2011
116A	Feaster Branch	Osage	Benton	475167	4236862	38.2795	-93.2839	2011
116B	Feaster Branch	Osage	Benton	475716	4236881	38.2797	-93.2776	2011
116C	Feaster Branch	Osage	Benton	475807	4237041	38.2811	-93.2766	2011
117A	White Branch	Osage	Benton	469211	4231799	38.2337	-93.3518	2011
117B	White Branch	Osage	Benton	469188	4232274	38.2379	-93.3521	2011
117C	White Branch	Osage	Benton	468980	4232106	38.2364	-93.3545	2011

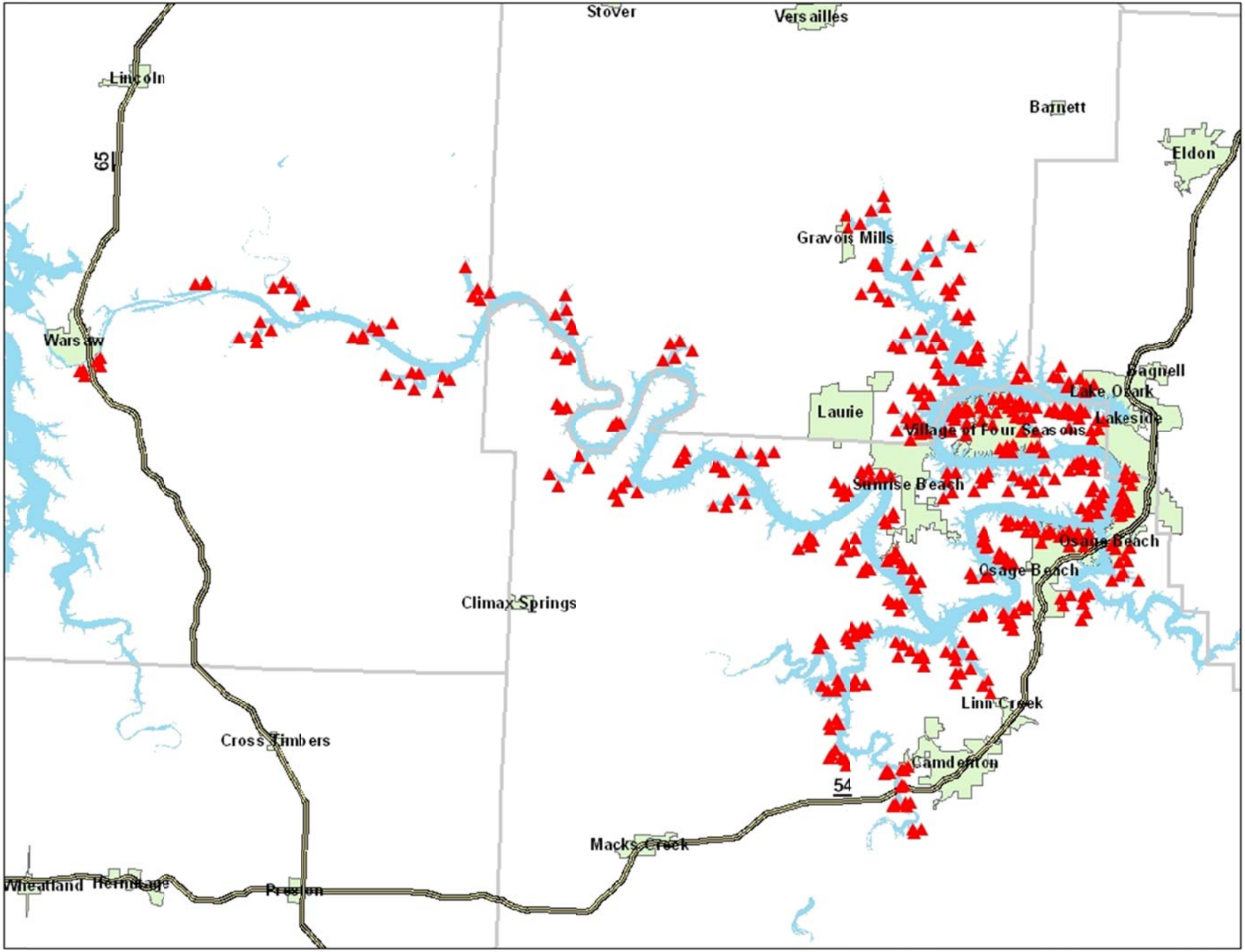
Lake of the Ozarks Water Quality Survey Locational Data

Site #	Cove name	Lake Arm	County	UTM Easting	UTM Northing	Latitude	Longitude	Year(s) Monitored
118A	Blue Branch	Osage	Benton	468267	4231210	38.2283	-93.3626	2011
118B	Blue Branch	Osage	Benton	468198	4231524	38.2311	-93.3634	2011
118C	Blue Branch	Osage	Benton	467912	4231445	38.2304	-93.3666	2011

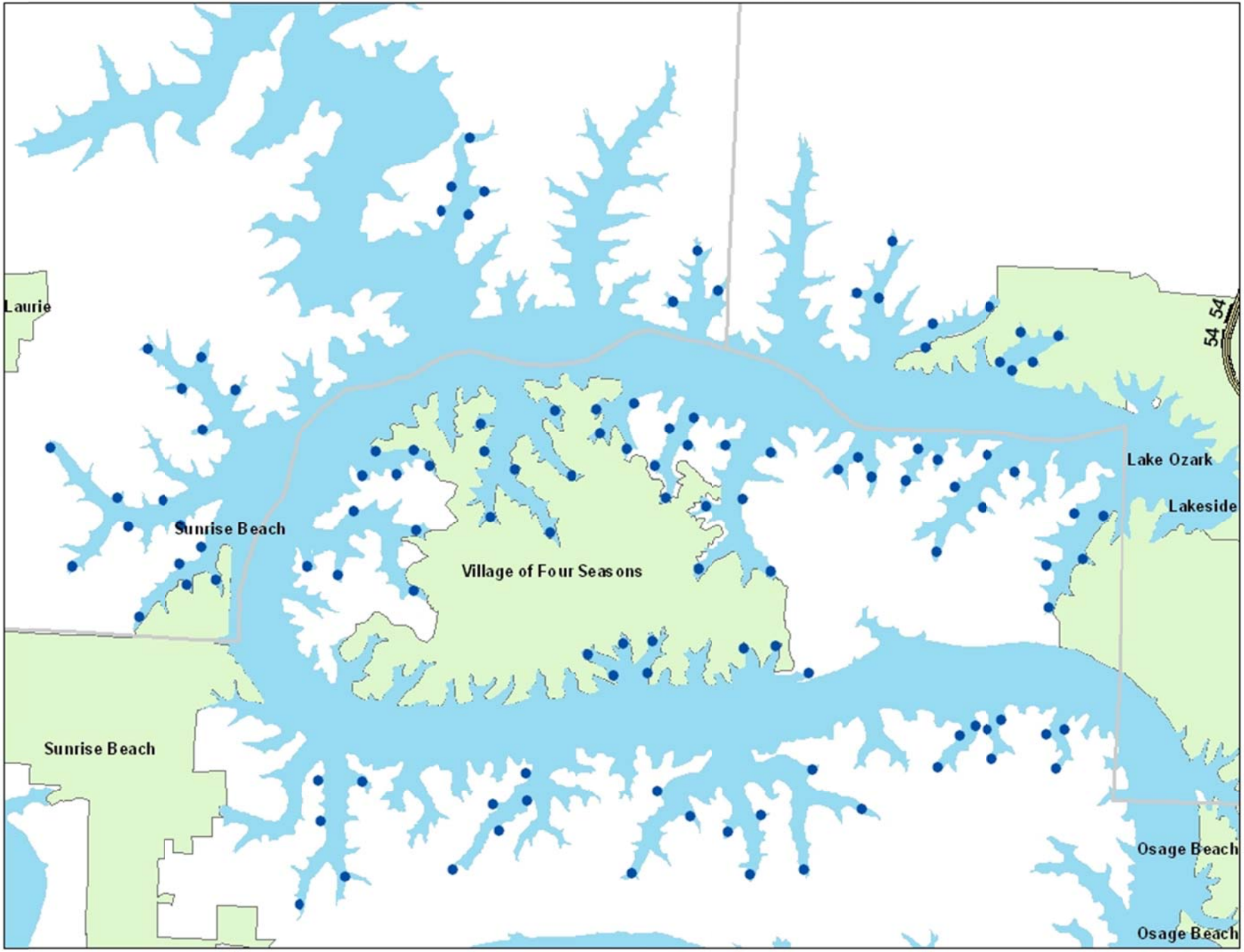
APPENDIX B

Monitoring Area Maps

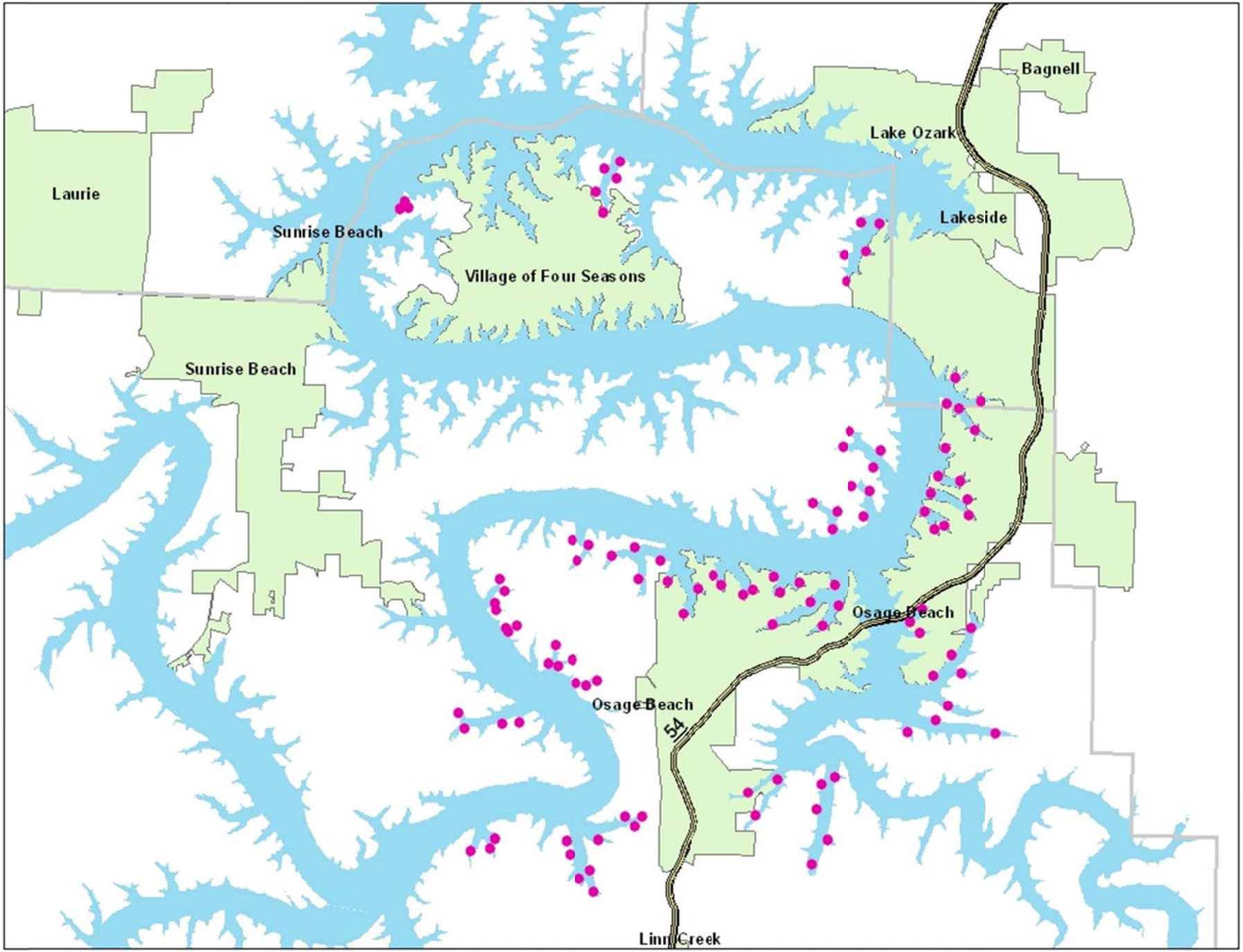
Water Quality Survey Report
Lake of the Ozarks
Miller, Camden, Morgan, and Benton Counties



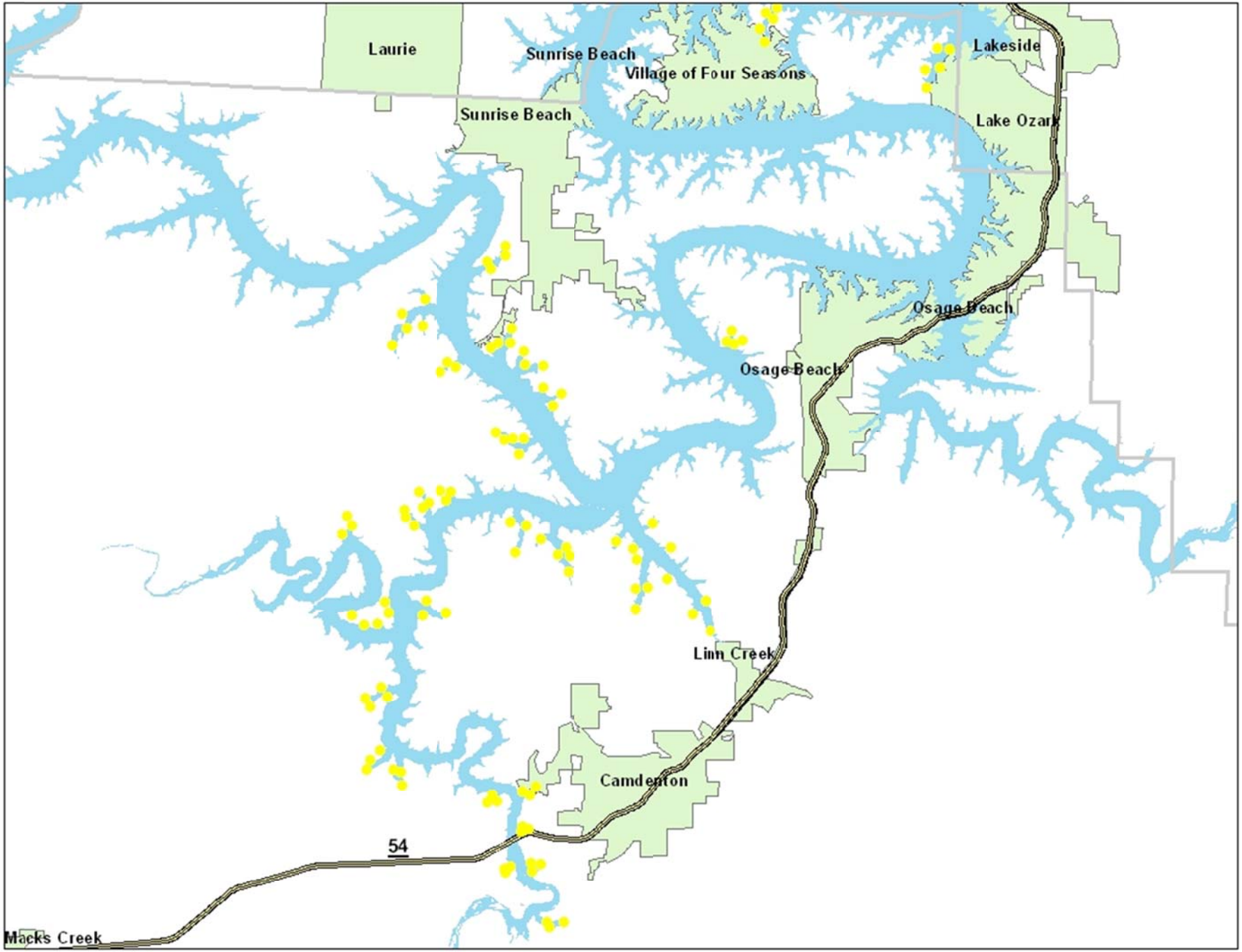
Lake of the Ozarks Water Quality Survey, Monitoring Locations 2007-2011



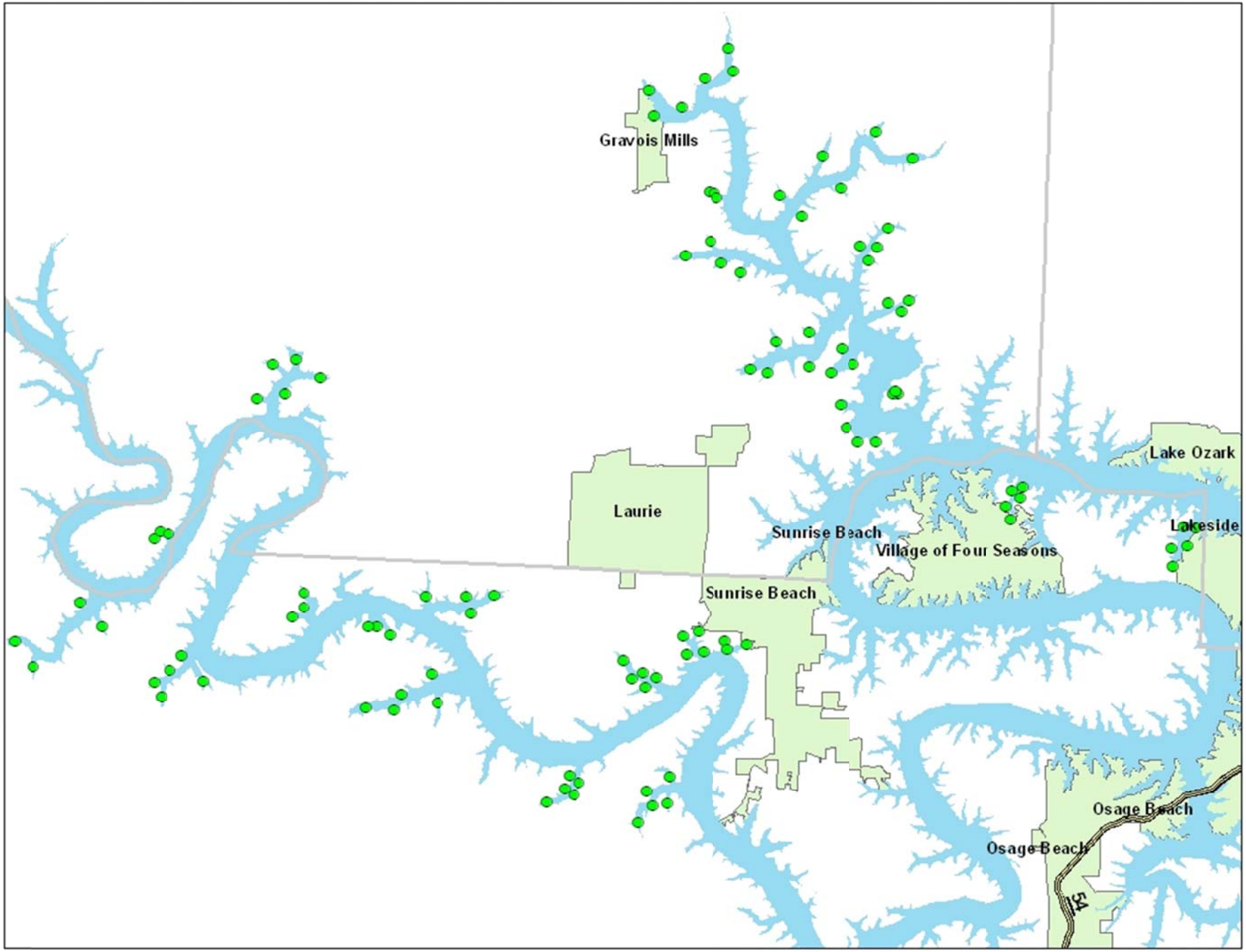
Lake of the Ozarks Water Quality Survey, Monitoring Locations 2007



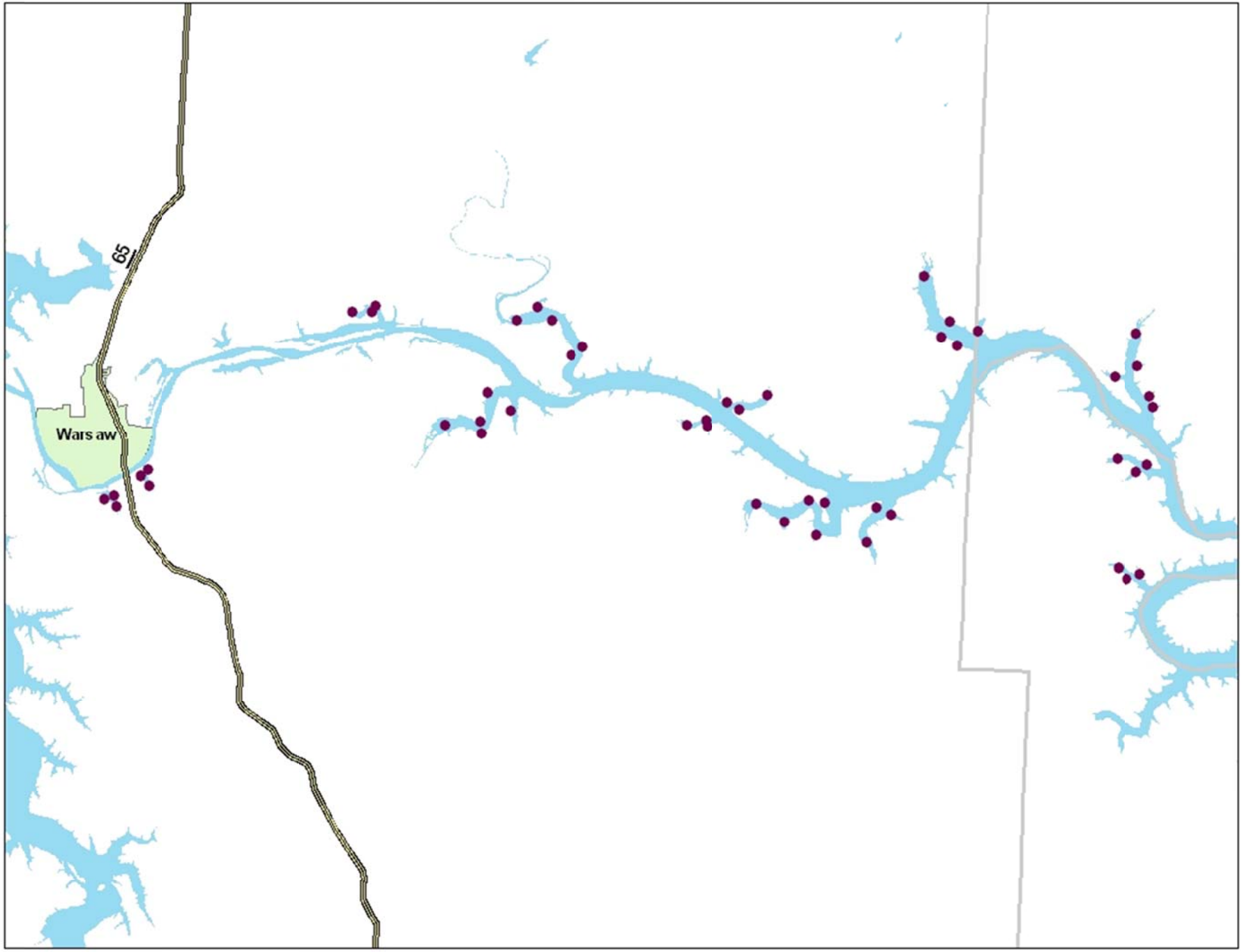
Lake of the Ozarks Water Quality Survey, Monitoring Locations 2008



Lake of the Ozarks Water Quality Survey, Monitoring Locations 2009



Lake of the Ozarks Water Quality Survey, Monitoring Locations 2010



Lake of the Ozarks Water Quality Survey, Monitoring Locations 2011

APPENDIX C

Analytical Data

Water Quality Survey Report
Lake of the Ozarks
Miller, Camden, Morgan, and Benton Counties

Lake of the Ozarks Water Quality Survey 2007 Data

Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
001A	Jennings Branch Cove	5/29/2007	866	7/9/2007	8.6	9/4/2007	1986.3
001B	Jennings Branch Cove	5/29/2007	116	7/9/2007	3.1	9/4/2007	16.9
001C	Jennings Branch Cove	5/29/2007	40.8	7/9/2007	<1	9/4/2007	6.3
001D	Jennings Branch Cove	5/29/2007	144	7/9/2007	3.0	9/4/2007	128.1
001E	Jennings Branch Cove	5/29/2007	30.5	7/9/2007	<1	9/4/2007	7.5
003A	Lotell Hollow Cove	5/29/2007	1.0	7/9/2007	34.5	9/4/2007	14.6
003B	Lotell Hollow Cove	5/29/2007	2.0	7/9/2007	<1	9/4/2007	7.5
003C	Lotell Hollow Cove	5/29/2007	7.4	7/9/2007	2.0	9/4/2007	<1
003D	Lotell Hollow Cove	5/29/2007	2.0	7/9/2007	1.0	9/4/2007	2
003E	Lotell Hollow Cove	5/29/2007	2.0	7/9/2007	<1	9/4/2007	<1
005A	Cove 005	5/29/2007	2.0	7/9/2007	2.0	9/4/2007	<1
005B	Cove 005	5/29/2007	<1	7/9/2007	1.0	9/4/2007	4.1
005C	Cove 005	5/29/2007	7.5	7/9/2007	<1	9/4/2007	4.1
007A	Jobson Hollow Cove	5/29/2007	4.1	7/9/2007	3.1	9/4/2007	12.2
007B	Jobson Hollow Cove	5/29/2007	9.6	7/9/2007	12.2	9/4/2007	8.6
007C	Jobson Hollow Cove	5/29/2007	16.9	7/9/2007	3.1	9/4/2007	95.9
009A	Cove 009	5/29/2007	81.3	7/9/2007	20.1	9/4/2007	4.1
009B	Cove 009	5/29/2007	112	7/9/2007	59.1	9/4/2007	14.5
009C	Cove 009	5/29/2007	488	7/9/2007	228	9/4/2007	14.2
009D	Cove 009	5/29/2007	13.2	7/9/2007	3.1	9/4/2007	18.5
009E	Cove 009	5/29/2007	24.3	7/9/2007	6.3	9/4/2007	6.3
011A	Cornett Branch Cove	5/29/2007	17.1	7/9/2007	21.6	9/4/2007	5.2
011B	Cornett Branch Cove	5/29/2007	13.1	7/9/2007	10.9	9/4/2007	6.3
011C	Cornett Branch Cove	5/29/2007	3.1	7/9/2007	2.0	9/4/2007	3.1
011D	Cornett Branch Cove	5/29/2007	22.8	7/9/2007	1.0	9/4/2007	18.3
011E	Cornett Branch Cove	5/29/2007	4.1	7/9/2007	1.0	9/4/2007	5.2
011F	Cornett Branch Cove	5/29/2007	5.2	7/9/2007	2.0	9/4/2007	2
011G	Cornett Branch Cove	5/29/2007	6.3	7/9/2007	6.3	9/4/2007	6.3
013A	North Buck Creek	5/29/2007	35.5	7/9/2007	12.0	9/4/2007	10.9
013B	North Buck Creek	5/29/2007	24.6	7/9/2007	1.0	9/4/2007	1
013C	North Buck Creek	5/29/2007	6.3	7/9/2007	3.0	9/4/2007	3.1
013D	North Buck Creek	5/29/2007	6.3	7/9/2007	1.0	9/4/2007	5.2
013E	North Buck Creek	5/29/2007	10.9	7/9/2007	39.9	9/4/2007	6.3
015A	Workman Hollow Cove	5/29/2007	5.2	7/9/2007	3.1	9/4/2007	2
015B	Workman Hollow Cove	5/29/2007	13.4	7/9/2007	22.8	9/4/2007	5.2
015C	Workman Hollow Cove	5/29/2007	18.9	7/9/2007	13.5	9/4/2007	25.9
015D	Workman Hollow Cove	5/29/2007	16.0	7/9/2007	2.0	9/4/2007	13.4
015E	Workman Hollow Cove	5/29/2007	13.1	7/9/2007	1.0	9/4/2007	<1
017A	Cape Hollow Cove	5/29/2007	6.3	7/9/2007	2.0	9/4/2007	30.9
017B	Cape Hollow Cove	5/29/2007	13.5	7/9/2007	6.3	9/4/2007	5.2
017C	Cape Hollow Cove	5/29/2007	8.5	7/9/2007	2.0	9/4/2007	<1
017D	Cape Hollow Cove	5/29/2007	3.1	7/9/2007	5.2	9/4/2007	2
017E	Cape Hollow Cove	5/29/2007	3.1	7/9/2007	5.2	9/4/2007	2
019A	Cove 019	5/29/2007	41.4	7/9/2007	5.2	9/4/2007	115.3

Lake of the Ozarks Water Quality Survey 2007 Data

Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
019B	Cove 019	5/29/2007	30.9	7/9/2007	<1	9/4/2007	32.3
019C	Cove 019	5/29/2007	13.5	7/9/2007	5.2	9/4/2007	64.4
019D	Cove 019	5/29/2007	14.2	7/9/2007	4.1	9/4/2007	3.1
019E	Cove 019	5/29/2007	6.3	7/9/2007	6.3	9/4/2007	9.6
021A	Chimney Cove	5/29/2007	5.2	7/9/2007	3.0	9/4/2007	1
021B	Chimney Cove	5/29/2007	14.6	7/9/2007	3.1	9/4/2007	17.3
021C	Chimney Cove	5/29/2007	5.2	7/9/2007	2.0	9/4/2007	1
023A	Forked Hollow Cove	5/29/2007	3.1	7/9/2007	29.3	9/4/2007	9.7
023B	Forked Hollow Cove	5/29/2007	8.5	7/9/2007	3.1	9/4/2007	8.6
023C	Forked Hollow Cove	5/29/2007	7.3	7/9/2007	<1	9/4/2007	2
025A	Cove 025	5/29/2007	11.9	7/9/2007	1.0	9/4/2007	1
025B	Cove 025	5/29/2007	4.1	7/9/2007	7.4	9/4/2007	1
025C	Cove 025	5/29/2007	6.3	7/9/2007	3.0	9/4/2007	1
027A	Davey Hollow Cove	5/29/2007	37.3	7/9/2007	21.8	9/4/2007	10.8
027B	Davey Hollow Cove	5/29/2007	6.3	7/9/2007	9.6	9/4/2007	410.6
027C	Davey Hollow Cove	5/29/2007	2.0	7/9/2007	4.1	9/4/2007	2
027D	Davey Hollow Cove	5/29/2007	10.8	7/9/2007	8.6	9/4/2007	5.2
027E	Davey Hollow Cove	5/29/2007	25.9	7/9/2007	3.1	9/4/2007	2
002A	McCoy Branch Cove	6/11/2007	28.8	8/6/2007	6.3	10/9/2007	31.3
002B	McCoy Branch Cove	6/11/2007	17.5	8/6/2007	1.0	10/9/2007	4.1
002C	McCoy Branch Cove	6/11/2007	4.1	8/6/2007	10.9	10/9/2007	4.1
002D	McCoy Branch Cove	6/11/2007	224	8/6/2007	8.4	10/9/2007	3.1
002E	McCoy Branch Cove	6/11/2007	14.8	8/6/2007	18.1	10/9/2007	5.2
004A	Cove 004	6/11/2007	7.4	8/6/2007	9.8	10/9/2007	18.5
004B	Cove 004	6/11/2007	19.9	8/6/2007	2.0	10/9/2007	3.0
004C	Cove 004	6/11/2007	3.1	8/6/2007	2.0	10/9/2007	1.0
006A	Birdsong Hollow Cove	6/11/2007	12.2	8/6/2007	7.4	10/9/2007	1.0
006B	Birdsong Hollow Cove	6/11/2007	1.0	8/6/2007	<1	10/9/2007	2.0
006C	Birdsong Hollow Cove	6/11/2007	4.1	8/6/2007	1.0	10/9/2007	1.0
008A	Downing Branch Cove	6/11/2007	53.0	8/6/2007	3.0	10/9/2007	22.6
008B	Downing Branch Cove	6/11/2007	5.2	8/6/2007	3.1	10/9/2007	4.1
008C	Downing Branch Cove	6/11/2007	6.3	8/6/2007	4.1	10/9/2007	<1
008D	Downing Branch Cove	6/11/2007	10.8	8/6/2007	10.8	10/9/2007	13.0
008E	Downing Branch Cove	6/11/2007	7.5	8/6/2007	6.3	10/9/2007	4.1
008F	Downing Branch Cove	6/11/2007	5.2	8/6/2007	2.0	10/9/2007	1.0
010A	Cove 010	6/11/2007	8.6	8/6/2007	NR[4]	10/9/2007	5.2
010B	Cove 010	6/11/2007	2.0	8/6/2007	<1	10/9/2007	2.0
010C	Cove 010	6/11/2007	2.0	8/6/2007	3.1	10/9/2007	11.0
010D	Cove 010	6/11/2007	7.5	8/6/2007	7.3	10/9/2007	<1
012A	Raccoon Hollow Cove	6/11/2007	<1	8/6/2007	2.0	10/9/2007	2.0
012B	Raccoon Hollow Cove	6/11/2007	<1	8/6/2007	<1	10/9/2007	1.0
012C	Raccoon Hollow Cove	6/11/2007	2.0	8/6/2007	<1	10/9/2007	2.0

4 No result due to broken sample container

Lake of the Ozarks Water Quality Survey 2007 Data

Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
012D	Raccoon Hollow Cove	6/11/2007	5.2	8/6/2007	1.0	10/9/2007	1.0
012E	Raccoon Hollow Cove	6/11/2007	3.1	8/6/2007	<1	10/9/2007	<1
014A	Cove 014	6/11/2007	6.3	8/6/2007	23.8	10/9/2007	5.2
014B	Cove 014	6/11/2007	4.1	8/6/2007	20.1	10/9/2007	7.3
014C	Cove 014	6/11/2007	1.0	8/6/2007	4.1	10/9/2007	1.0
014D	Cove 014	6/11/2007	3.1	8/6/2007	33.2	10/9/2007	2.0
014E	Cove 014	6/11/2007	2.0	8/6/2007	4.1	10/9/2007	<1
016A	South Buck Creek	6/11/2007	15.8	8/6/2007	6.3	10/9/2007	7.3
016B	South Buck Creek	6/11/2007	<1	8/6/2007	<1	10/9/2007	24.9
016C	South Buck Creek	6/11/2007	4.1	8/6/2007	4.1	10/9/2007	2.0
016D	South Buck Creek	6/11/2007	12.1	8/6/2007	2.0	10/9/2007	13.4
016E	South Buck Creek	6/11/2007	2.0	8/6/2007	2.0	10/9/2007	8.5
016F	South Buck Creek	6/11/2007	7.5	8/6/2007	3.1	10/9/2007	10.9
018A	Lynch Hollow Cove	6/11/2007	39.9	8/6/2007	13.2	10/9/2007	4.1
018B	Lynch Hollow Cove	6/11/2007	13.5	8/6/2007	2.0	10/9/2007	4.1
018C	Lynch Hollow Cove	6/11/2007	4.1	8/6/2007	14.8	10/9/2007	9.8
018D	Lynch Hollow Cove	6/11/2007	4.1	8/6/2007	2.0	10/9/2007	37.9
018E	Lynch Hollow Cove	6/11/2007	4.1	8/6/2007	1.0	10/9/2007	2.0
020A	Cove 020	6/11/2007	6.3	8/6/2007	<1	10/9/2007	2.0
020B	Cove 020	6/11/2007	35.9	8/6/2007	5.2	10/9/2007	6.2
020C	Cove 020	6/11/2007	17.1	8/6/2007	6.3	10/9/2007	3.1
022A	Middle Hollow Cove	6/11/2007	6.3	8/6/2007	7.3	10/9/2007	2.0
022B	Middle Hollow Cove	6/11/2007	8.6	8/6/2007	4.1	10/9/2007	<1
022C	Middle Hollow Cove	6/11/2007	3.1	8/6/2007	3.1	10/9/2007	5.2
024A	Cove 024	6/11/2007	29.9	8/6/2007	11.0	10/9/2007	1.0
024B	Cove 024	6/11/2007	5.2	8/6/2007	2.0	10/9/2007	1.0
024C	Cove 024	6/11/2007	3.1	8/6/2007	2.0	10/9/2007	2.0
026A	Cove 026	6/11/2007	31.3	8/6/2007	10.9	10/9/2007	<1
026B	Cove 026	6/11/2007	4.1	8/6/2007	1.0	10/9/2007	2.0
026C	Cove 026	6/11/2007	7.5	8/6/2007	1.0	10/9/2007	2.0
028A	Dry Branch Cove	6/11/2007	9.7	8/6/2007	3.1	10/9/2007	8.6
028B	Dry Branch Cove	6/11/2007	8.6	8/6/2007	1.0	10/9/2007	6.3
028C	Dry Branch Cove	6/11/2007	4.1	8/6/2007	<1	10/9/2007	3.0

Lake of the Ozarks Water Quality Survey 2008 Data

Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
029A	Pogue Hollow	5/27/2008	20.9	7/7/2008	1.0	9/2/2008	2.0
029B	Pogue Hollow	5/27/2008	18.7	7/7/2008	2.0	9/2/2008	2.0
029C	Pogue Hollow	5/27/2008	15.8	7/7/2008	2.0	9/2/2008	<1
029D	Pogue Hollow	5/27/2008	33.6	7/7/2008	3.0	9/2/2008	18.5
029E	Pogue Hollow	5/27/2008	27.8	7/7/2008	41.7	9/2/2008	4.1
031A	Cove 031	5/27/2008	34.1	7/7/2008	10.9	9/2/2008	5.2
031B	Cove 031	5/27/2008	43.5	7/7/2008	4.1	9/2/2008	4.1
031C	Cove 031	5/27/2008	20.9	7/7/2008	2.0	9/2/2008	1.0
033A	Shawnee Bend Cove	5/27/2008	39.5	7/7/2008	14.6	9/2/2008	17.5
033B	Shawnee Bend Cove	5/27/2008	23.8	7/7/2008	2.0	9/2/2008	8.6
033C	Shawnee Bend Cove	5/27/2008	32.3	7/7/2008	9.8	9/2/2008	14.8
033D	Shawnee Bend Cove	5/27/2008	39.9	7/7/2008	7.4	9/2/2008	185
035A	Cove 035	5/27/2008	23.3	7/7/2008	8.5	9/2/2008	2.0
035B	Cove 035	5/27/2008	42.2	7/7/2008	2.0	9/2/2008	1.0
035C	Cove 035	5/27/2008	15.8	7/7/2008	2.0	9/2/2008	<1
036A	Fish Hatchery Cove	5/27/2008	27.8	7/7/2008	4.1	9/2/2008	18.5
036B	Fish Hatchery Cove	5/27/2008	9.7	7/7/2008	12.0	9/2/2008	7.5
036C	Fish Hatchery Cove	5/27/2008	23.8	7/7/2008	3.1	9/2/2008	1.0
037A	Anderson Hollow	5/27/2008	41.7	7/7/2008	13.1	9/2/2008	18.7
037B	Anderson Hollow	5/27/2008	57.3	7/7/2008	29.2	9/2/2008	8.5
037C	Anderson Hollow	5/27/2008	10.8	7/7/2008	4.1	9/2/2008	48.0
037D	Anderson Hollow	5/27/2008	8.4	7/7/2008	3.1	9/2/2008	2.0
037E	Anderson Hollow	5/27/2008	8.4	7/7/2008	3.0	9/2/2008	1.0
041A	Harpers-Darby Hollow	5/27/2008	88.2	7/7/2008	12.2	9/2/2008	9.8
041B	Harpers-Darby Hollow	5/27/2008	30.1	7/7/2008	6.2	9/2/2008	6.3
041C	Harpers-Darby Hollow	5/27/2008	11.9	7/7/2008	1.0	9/2/2008	12.0
041D	Harpers-Darby Hollow	5/27/2008	35.9	7/7/2008	5.2	9/2/2008	9.7
041E	Harpers-Darby Hollow	5/27/2008	13.4	7/7/2008	1.0	9/2/2008	2.0
043A	Cove 043	5/27/2008	57.3	7/7/2008	6.3	9/2/2008	4.1
043B	Cove 043	5/27/2008	548	7/7/2008	<1	9/2/2008	2.0
043C	Cove 043	5/27/2008	57.3	7/7/2008	3.0	9/2/2008	<1
043D	Cove 043	5/27/2008	79.4	7/7/2008	3.1	9/2/2008	10.8
045A	Miller Hollow	5/27/2008	37.9	7/7/2008	10.8	9/2/2008	6.3
045B	Miller Hollow	5/27/2008	44.6	7/7/2008	7.5	9/2/2008	6.3
045C	Miller Hollow	5/27/2008	18.3	7/7/2008	60.2	9/2/2008	15.8
045D	Miller Hollow	5/27/2008	47.5	7/7/2008	4.1	9/2/2008	9.7
047A	Cove 047	5/27/2008	22.6	7/7/2008	4.1	9/2/2008	10.8
047B	Cove 047	5/27/2008	55.4	7/7/2008	45.0	9/2/2008	7.2
047C	Cove 047	5/27/2008	23.0	7/7/2008	2.0	9/2/2008	3.1
047D	Cove 047	5/27/2008	19.3	7/7/2008	2.0	9/2/2008	<1
049A	Bee Hole Hollow	5/27/2008	129	7/7/2008	36.8	9/2/2008	21.3
049B	Bee Hole Hollow	5/27/2008	119	7/7/2008	12.1	9/2/2008	6.3
049C	Bee Hole Hollow	5/27/2008	119	7/7/2008	6.3	9/2/2008	5.2
051A	Crabtree Cove	5/27/2008	53.6	7/7/2008	30.9	9/2/2008	44.1

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Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
051B	Crabtree Cove	5/27/2008	125	7/7/2008	23.1	9/2/2008	50.4
051C	Crabtree Cove	5/27/2008	35.9	7/7/2008	9.7	9/2/2008	1.0
051D	Crabtree Cove	5/27/2008	57.6	7/7/2008	16.0	9/2/2008	1.0
053A	Racetrack Hollow	5/27/2008	178	7/7/2008	6.3	9/2/2008	3.0
053B	Racetrack Hollow	5/27/2008	70.8	7/7/2008	24.3	9/2/2008	8.5
053C	Racetrack Hollow	5/27/2008	19.5	7/7/2008	14.5	9/2/2008	7.5
053D	Racetrack Hollow	5/27/2008	40.2	7/7/2008	18.5	9/2/2008	3.0
053E	Racetrack Hollow	5/27/2008	43.3	7/7/2008	24.1	9/2/2008	10.8
055A	Toad Cove	5/27/2008	53.0	7/7/2008	27.5	9/2/2008	53.7
055B	Toad Cove	5/27/2008	43.7	7/7/2008	16.0	9/2/2008	1.0
055C	Toad Cove	5/27/2008	25.9	7/7/2008	4.1	9/2/2008	5.2
001A	Jennings Branch Cove	6/16/2008	31.3	8/4/2008	12.1	10/6/2008	1
001B	Jennings Branch Cove	6/16/2008	16.0	8/4/2008	2.0	10/6/2008	4.1
001C	Jennings Branch Cove	6/16/2008	3.1	8/4/2008	4.1	10/6/2008	1.0
001D	Jennings Branch Cove	6/16/2008	24.1	8/4/2008	11.5	10/6/2008	6.3
001E	Jennings Branch Cove	6/16/2008	2.0	8/4/2008	1.0	10/6/2008	<1
009A	Cove 009	6/16/2008	60.9	8/4/2008	10.9	10/6/2008	5.2
009B	Cove 009	6/16/2008	14.4	8/4/2008	4.1	10/6/2008	2.0
009C	Cove 009	6/16/2008	17.3	8/4/2008	2.0	10/6/2008	4.1
009D	Cove 009	6/16/2008	35.0	8/4/2008	<1	10/6/2008	1.0
009E	Cove 009	6/16/2008	24.3	8/4/2008	<1	10/6/2008	2.0
030A	Ham Rock Cove	6/16/2008	12.1	8/4/2008	2.0	10/6/2008	3.0
030B	Ham Rock Cove	6/16/2008	9.7	8/4/2008	<1	10/6/2008	2.0
030C	Ham Rock Cove	6/16/2008	7.3	8/4/2008	12.0	10/6/2008	4.1
032A	Cove 032	6/16/2008	8.6	8/4/2008	<1	10/6/2008	3.1
032B	Cove 032	6/16/2008	16.9	8/4/2008	<1	10/6/2008	1.0
032C	Cove 032	6/16/2008	27.5	8/4/2008	1.0	10/6/2008	5.1
034A	Cove 034	6/16/2008	10.9	8/4/2008	2.0	10/6/2008	9.8
034B	Cove 034	6/16/2008	7.5	8/4/2008	<1	10/6/2008	3.1
034C	Cove 034	6/16/2008	4.1	8/4/2008	1.0	10/6/2008	4.1
038A	Pin Oak Hollow	6/16/2008	<1	8/4/2008	13.5	10/6/2008	3.1
038B	Pin Oak Hollow	6/16/2008	<1	8/4/2008	<1	10/6/2008	3.0
038C	Pin Oak Hollow	6/16/2008	2.0	8/4/2008	1.0	10/6/2008	<1
039A	Brushy Hollow	6/16/2008	25.9	8/4/2008	1.0	10/6/2008	8.6
039B	Brushy Hollow	6/16/2008	9.8	8/4/2008	3.1	10/6/2008	2.0
039C	Brushy Hollow	6/16/2008	6.3	8/4/2008	<1	10/6/2008	<1
040A	Watson Hollow	6/16/2008	21.3	8/4/2008	2.0	10/6/2008	6.3
040B	Watson Hollow	6/16/2008	7.4	8/4/2008	1.0	10/6/2008	7.4
040C	Watson Hollow	6/16/2008	5.2	8/4/2008	21.3	10/6/2008	44.3
040D	Watson Hollow	6/16/2008	<1	8/4/2008	7.4	10/6/2008	3.1
040E	Watson Hollow	6/16/2008	<1	8/4/2008	<1	10/6/2008	1.0
042A	Cove 042	6/16/2008	16.1	8/4/2008	5.2	10/6/2008	2.0
042B	Cove 042	6/16/2008	18.7	8/4/2008	<1	10/6/2008	2.0
042C	Cove 042	6/16/2008	10.8	8/4/2008	<1	10/6/2008	8.5

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Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
044A	Salt Hollow	6/16/2008	122	8/4/2008	10.9	10/6/2008	3.1
044B	Salt Hollow	6/16/2008	201	8/4/2008	5.2	10/6/2008	1.0
044C	Salt Hollow	6/16/2008	98.8	8/4/2008	1.0	10/6/2008	1.0
046A	Woods Hollow	6/16/2008	192	8/4/2008	5.2	10/6/2008	53.8
046B	Woods Hollow	6/16/2008	119	8/4/2008	4.1	10/6/2008	2.0
046C	Woods Hollow	6/16/2008	44.8	8/4/2008	<1	10/6/2008	5.2
048A	Cove 048	6/16/2008	1550	8/4/2008	1.0	10/6/2008	60.9
048B	Cove 048	6/16/2008	435	8/4/2008	5.2	10/6/2008	120
048C	Cove 048	6/16/2008	186	8/4/2008	<1	10/6/2008	54.8
048D	Cove 048	6/16/2008	71.2	8/4/2008	19.7	10/6/2008	71.7
050A	Cove 050	6/16/2008	8.5	8/4/2008	6.3	10/6/2008	29.5
050B	Cove 050	6/16/2008	4.1	8/4/2008	<1	10/6/2008	17.3
050C	Cove 050	6/16/2008	4.1	8/4/2008	<1	10/6/2008	8.5
052A	Cove 052	6/16/2008	48.7	8/4/2008	1.0	10/6/2008	10.7
052B	Cove 052	6/16/2008	105	8/4/2008	7.5	10/6/2008	<1
052C	Cove 052	6/16/2008	80.9	8/4/2008	<1	10/6/2008	<1
052D	Cove 052	6/16/2008	5.2	8/4/2008	18.9	10/6/2008	17.1
054A	Cove 054	6/16/2008	16.0	8/4/2008	10.9	10/6/2008	8.4
054B	Cove 054	6/16/2008	23.8	8/4/2008	2.0	10/6/2008	8.5
054C	Cove 054	6/16/2008	29.5	8/4/2008	10.8	10/6/2008	21.6

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Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
001A	Jennings Branch Cove	5/26/2009	>2419.6				
001B	Jennings Branch Cove	5/26/2009	1990				
001C	Jennings Branch Cove	5/26/2009	870				
001D	Jennings Branch Cove	5/26/2009	687				
001E	Jennings Branch Cove	5/26/2009	328				
009A	Cove 009	5/26/2009	>2419.6	7/6/2009	4.1	9/8/2009	12.2
009B	Cove 009	5/26/2009	1410	7/6/2009	4.1	9/8/2009	16.1
009C	Cove 009	5/26/2009	870	7/6/2009	1	9/8/2009	5.2
009D	Cove 009	5/26/2009	387	7/6/2009	6.3	9/8/2009	3.1
009E	Cove 009	5/26/2009	411	7/6/2009	<1	9/8/2009	2.0
057A	Linn Creek West	5/26/2009	345	7/6/2009	5.2	9/8/2009	4.1
057B	Linn Creek West	5/26/2009	27.9	7/6/2009	1	9/8/2009	6.3
057C	Linn Creek West	5/26/2009	47.3	7/6/2009	<1	9/8/2009	25.3
057D	Linn Creek West	5/26/2009	156	7/6/2009	8.6	9/8/2009	9.8
059A	Libby Hollow	5/26/2009	345	7/6/2009	8.6	9/8/2009	4.1
059B	Libby Hollow	5/26/2009	345	7/6/2009	1	9/8/2009	8.6
059C	Libby Hollow	5/26/2009	517	7/6/2009	3.1	9/8/2009	5.2
059D	Libby Hollow	5/26/2009	236	7/6/2009	2	9/8/2009	1.0
059E	Libby Hollow	5/26/2009	727	7/6/2009	1	9/8/2009	7.5
060A	Anthony Hollow	5/26/2009	129	7/6/2009	<1	9/8/2009	<1
060B	Anthony Hollow	5/26/2009	285	7/6/2009	2	9/8/2009	5.2
060C	Anthony Hollow	5/26/2009	192	7/6/2009	7.5	9/8/2009	3.0
065A	EE Area	5/26/2009	23.3	7/6/2009	1	9/8/2009	1.0
065B	EE Area	5/26/2009	98.7	7/6/2009	1	9/8/2009	5.2
065C	EE Area	5/26/2009	55.7	7/6/2009	6.1	9/8/2009	29.8
065D	EE Area	5/26/2009	60.5	7/6/2009	1	9/8/2009	45.0
065E	EE Area	5/26/2009	16	7/6/2009	1	9/8/2009	1.0
067A	Windermere Cove	5/26/2009	549	7/6/2009	1	9/8/2009	4.1
067B	Windermere Cove	5/26/2009	344	7/6/2009	4.1	9/8/2009	5.2
067C	Windermere Cove	5/26/2009	228	7/6/2009	1	9/8/2009	5.2
067D	Windermere Cove	5/26/2009	378	7/6/2009	1	9/8/2009	6.3
068A	Owens Hollow	5/26/2009	387	7/6/2009	9.7	9/8/2009	6.2
068B	Owens Hollow	5/26/2009	121	7/6/2009	5.2	9/8/2009	6.3
068C	Owens Hollow	5/26/2009	152	7/6/2009	<1	9/8/2009	10.9
069A	Morrow Hollow	5/26/2009	85.7	7/6/2009	1	9/8/2009	4.1
069B	Morrow Hollow	5/26/2009	56.3	7/6/2009	2	9/8/2009	4.1
069C	Morrow Hollow	5/26/2009	31.8	7/6/2009	1	9/8/2009	<1
073A	Cove 073	5/26/2009	1990	7/6/2009	21.1	9/8/2009	8.5
073B	Cove 073	5/26/2009	291	7/6/2009	4.1	9/8/2009	3.1
073C	Cove 073	5/26/2009	416	7/6/2009	2	9/8/2009	5.2
075A	Ha Ha Tonka Branch	5/26/2009	17.1	7/6/2009	9.7	9/8/2009	10.7
075B	Ha Ha Tonka Branch	5/26/2009	27.2	7/6/2009	4.1	9/8/2009	26.2
075C	Ha Ha Tonka Branch	5/26/2009	58.3	7/6/2009	12	9/8/2009	23.1
077A	Eady Hollow	5/26/2009	261	7/6/2009	35.9	9/8/2009	16.0

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Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
077B	Eady Hollow	5/26/2009	272	7/6/2009	24.9	9/8/2009	9.7
077C	Eady Hollow	5/26/2009	345	7/6/2009	3	9/8/2009	1.0
079A	Francis Hollow	5/26/2009	816	7/6/2009	8.6	9/8/2009	8.6
079B	Francis Hollow	5/26/2009	172	7/6/2009	8.4	9/8/2009	21.6
079C	Francis Hollow	5/26/2009	205	7/6/2009	14.6	9/8/2009	7.4
079D	Francis Hollow	5/26/2009	152	7/6/2009	5.2	9/8/2009	2.0
081A	Laurie Hollow	5/26/2009	365	7/6/2009	1	9/8/2009	5.2
081B	Laurie Hollow	5/26/2009	206	7/6/2009	6.2	9/8/2009	40.4
081C	Laurie Hollow	5/26/2009	83.9	7/6/2009	11.9	9/8/2009	13.4
081D	Laurie Hollow	5/26/2009	98.5	7/6/2009	55.6	9/8/2009	378.4
081E	Laurie Hollow	5/26/2009	90.8	7/6/2009	579	9/8/2009	13.1
001A	Jennings Branch Cove	6/22/2009	4.1	8/17/2009	4.1	10/5/2009	5.2
001B	Jennings Branch Cove	6/22/2009	2	8/17/2009	1.0	10/5/2009	<1
001C	Jennings Branch Cove	6/22/2009	1	8/17/2009	<1	10/5/2009	2.0
001D	Jennings Branch Cove	6/22/2009	10.9	8/17/2009	3.1	10/5/2009	3.1
001E	Jennings Branch Cove	6/22/2009	23.8	8/17/2009	1.0	10/5/2009	3.1
048A	Cove 048	6/22/2009	62.4	8/17/2009	7.3	10/5/2009	4.1
048B	Cove 048	6/22/2009	49.5	8/17/2009	17.5	10/5/2009	3.0
048C	Cove 048	6/22/2009	4.1	8/17/2009	2.0	10/5/2009	<1
048D	Cove 048	6/22/2009	8.5	8/17/2009	9.7	10/5/2009	1.0
056A	Linn Creek East	6/22/2009	40.2	8/17/2009	8.4	10/5/2009	<1
056B	Linn Creek East	6/22/2009	14.5	8/17/2009	1.0	10/5/2009	<1
056C	Linn Creek East	6/22/2009	4.1	8/17/2009	5.2	10/5/2009	7.5
056D	Linn Creek East	6/22/2009	9.6	8/17/2009	10.7	10/5/2009	<1
058A	Possum Hollow	6/22/2009	13.4	8/17/2009	7.4	10/5/2009	6.3
058B	Possum Hollow	6/22/2009	4.1	8/17/2009	2.0	10/5/2009	<1
058C	Possum Hollow	6/22/2009	4.1	8/17/2009	6.3	10/5/2009	<1
058D	Possum Hollow	6/22/2009	6.3	8/17/2009	8.5	10/5/2009	1.0
061A	Cove 061	6/22/2009	2	8/17/2009	5.2	10/5/2009	<1
061B	Cove 061	6/22/2009	2	8/17/2009	21.1	10/5/2009	<1
061C	Cove 061	6/22/2009	4.1	8/17/2009	9.8	10/5/2009	<1
062A	Narrows Hollow	6/22/2009	17.3	8/17/2009	4.1	10/5/2009	<1
062B	Narrows Hollow	6/22/2009	6.3	8/17/2009	27.5	10/5/2009	2.0
062C	Narrows Hollow	6/22/2009	2	8/17/2009	24.3	10/5/2009	2.0
063A	Swift Hollow	6/22/2009	<1	8/17/2009	8.3	10/5/2009	5.2
063B	Swift Hollow	6/22/2009	9.8	8/17/2009	9.6	10/5/2009	1.0
063C	Swift Hollow	6/22/2009	7.4	8/17/2009	11.8	10/5/2009	<1
064A	Barnes Hollow	6/22/2009	9.8	8/17/2009	7.5	10/5/2009	1.0
064B	Barnes Hollow	6/22/2009	3.1	8/17/2009	10.7	10/5/2009	3.1
064C	Barnes Hollow	6/22/2009	<1	8/17/2009	17.5	10/5/2009	2.0
066A	Jackson Hollow	6/22/2009	19.9	8/17/2009	10.8	10/5/2009	2.0
066B	Jackson Hollow	6/22/2009	19.9	8/17/2009	3.1	10/5/2009	4.1
066C	Jackson Hollow	6/22/2009	7.5	8/17/2009	4.1	10/5/2009	6.3
070A	Cove 070	6/22/2009	54.8	8/17/2009	3.1	10/5/2009	2.0

Lake of the Ozarks Water Quality Survey 2009 Data

Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
070B	Cove 070	6/22/2009	57.3	8/17/2009	<1	10/5/2009	1.0
070C	Cove 070	6/22/2009	68.3	8/17/2009	4.1	10/5/2009	<1
071A	Cove 071	6/22/2009	144	8/17/2009	8.6	10/5/2009	3.1
071B	Cove 071	6/22/2009	98.7	8/17/2009	3.1	10/5/2009	2.0
071C	Cove 071	6/22/2009	69.1	8/17/2009	10.8	10/5/2009	6.3
072A	Cove 072	6/22/2009	186	8/17/2009	3.0	10/5/2009	10.9
072B	Cove 072	6/22/2009	219	8/17/2009	3.0	10/5/2009	3.1
072C	Cove 072	6/22/2009	98.7	8/17/2009	3.1	10/5/2009	9.8
074A	Minnow Brook	6/22/2009	155	8/17/2009	30.1	10/5/2009	24.6
074B	Minnow Brook	6/22/2009	142	8/17/2009	5.2	10/5/2009	21.3
074C	Minnow Brook	6/22/2009	114	8/17/2009	3.1	10/5/2009	12.1
076A	Standing Rock Hollow	6/22/2009	4.1	8/17/2009	9.7	10/5/2009	5.2
076B	Standing Rock Hollow	6/22/2009	6.2	8/17/2009	7.4	10/5/2009	<1
076C	Standing Rock Hollow	6/22/2009	5.2	8/17/2009	16.0	10/5/2009	3.1
076D	Standing Rock Hollow	6/22/2009	5.2	8/17/2009	<1	10/5/2009	<1
076E	Standing Rock Hollow	6/22/2009	3.1	8/17/2009	1.0	10/5/2009	<1
078A	Crane-Hart Hollow	6/22/2009	13.2	8/17/2009	2.0	10/5/2009	1.0
078B	Crane-Hart Hollow	6/22/2009	4.1	8/17/2009	7.5	10/5/2009	3.0
078C	Crane-Hart Hollow	6/22/2009	7.5	8/17/2009	12.0	10/5/2009	5.2
080A	Kendrick Hollow	6/22/2009	8.5	8/17/2009	8.4	10/5/2009	4.1
080B	Kendrick Hollow	6/22/2009	<1	8/17/2009	1.0	10/5/2009	<1
080C	Kendrick Hollow	6/22/2009	5.1	8/17/2009	10.8	10/5/2009	1.0
082A	Welcher Hollow	6/22/2009	12.1	8/17/2009	2.0	10/5/2009	5.2
082B	Welcher Hollow	6/22/2009	16	8/17/2009	1.0	10/5/2009	3.0
082C	Welcher Hollow	6/22/2009	11	8/17/2009	4.1	10/5/2009	2.0
082D	Welcher Hollow	6/22/2009	6.2	8/17/2009	<1	10/5/2009	1.0

Lake of the Ozarks Water Quality Survey 2010 Data

Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
081A	Laurie Hollow	6/1/2010	8.5	7/6/2010	3.1	9/7/2010	5.1
081B	Laurie Hollow	6/1/2010	7.5	7/6/2010	8.4	9/7/2010	<1
081C	Laurie Hollow	6/1/2010	8.5	7/6/2010	4.1	9/7/2010	1.0
081D	Laurie Hollow	6/1/2010	2.0	7/6/2010	5.2	9/7/2010	<1
081E	Laurie Hollow	6/1/2010	15.8	7/6/2010	5.1	9/7/2010	4.1
083A	Fan Hollow	6/1/2010	4.1	7/6/2010	17.3	9/7/2010	2.0
083B	Fan Hollow	6/1/2010	9.6	7/6/2010	14.6	9/7/2010	1.0
083C	Fan Hollow	6/1/2010	8.6	7/6/2010	6.3	9/7/2010	<1
084A	Porter Mill Hollow	6/1/2010	24.6	7/6/2010	7.2	9/7/2010	13.4
084B	Porter Mill Hollow	6/1/2010	129.6	7/6/2010	13.2	9/7/2010	8.5
084C	Porter Mill Hollow	6/1/2010	8.5	7/6/2010	9.7	9/7/2010	2.0
084D	Porter Mill Hollow	6/1/2010	325.5	7/6/2010	9.7	9/7/2010	5.2
085A	Brush Creek Cove	6/1/2010	7.5	7/6/2010	2.0	9/7/2010	5.2
085B	Brush Creek Cove	6/1/2010	8.4	7/6/2010	38.3	9/7/2010	4.1
085C	Brush Creek Cove	6/1/2010	3.1	7/6/2010	4.1	9/7/2010	2.0
085D	Brush Creek Cove	6/1/2010	1.0	7/6/2010	14.8	9/7/2010	5.2
085E	Brush Creek Cove	6/1/2010	8.6	7/6/2010	4.1	9/7/2010	3.0
086A	Alcorn Hollow	6/1/2010	7.5	7/6/2010	4.1	9/7/2010	38.4
086B	Alcorn Hollow	6/1/2010	4.1	7/6/2010	3.1	9/7/2010	3.1
086C	Alcorn Hollow	6/1/2010	7.5	7/6/2010	5.2	9/7/2010	1.0
086D	Alcorn Hollow	6/1/2010	23.8	7/6/2010	9.8	9/7/2010	<1
086E	Alcorn Hollow	6/1/2010	7.4	7/6/2010	<1	9/7/2010	<1
087A	Bollinger Creek Cove	6/1/2010	13.2	7/7/2010	4.1	9/7/2010	3.0
087B	Bollinger Creek Cove	6/1/2010	2.0	7/7/2010	<1	9/7/2010	2.0
087C	Bollinger Creek Cove	6/1/2010	4.1	7/7/2010	6.3	9/7/2010	2.0
087D	Bollinger Creek Cove	6/1/2010	6.3	7/7/2010	3.1	9/7/2010	2.0
087E	Bollinger Creek Cove	6/1/2010	2.0	7/7/2010	2.0	9/7/2010	2.0
088A	Cartwright Springs Bay	6/1/2010	5.2	7/7/2010	1.0	9/7/2010	1.0
088B	Cartwright Springs Bay	6/1/2010	4.1	7/7/2010	1.0	9/7/2010	4.1
088C	Cartwright Springs Bay	6/1/2010	6.3	7/7/2010	2.0	9/7/2010	3.1
088D	Cartwright Springs Bay	6/1/2010	37.3	7/7/2010	11.0	9/7/2010	<1
089A	Cove 089	6/1/2010	9.8	7/6/2010	11.9	9/7/2010	3.1
089B	Cove 089	6/1/2010	17.1	7/6/2010	7.5	9/7/2010	1.0
089C	Cove 089	6/1/2010	27.9	7/6/2010	5.2	9/7/2010	7.4
090A	Blue Cat Cove	6/1/2010	18.3	7/6/2010	11.8	9/7/2010	30.9
090B	Blue Cat Cove	6/1/2010	19.9	7/6/2010	14.5	9/7/2010	18.3
090C	Blue Cat Cove	6/1/2010	64.4	7/6/2010	7.5	9/7/2010	6.3
091A	Pearson Bay	6/1/2010	30.9	7/6/2010	13.1	9/7/2010	3.1
091B	Pearson Bay	6/1/2010	12.1	7/6/2010	4.1	9/7/2010	5.1
091C	Pearson Bay	6/1/2010	11.0	7/6/2010	5.2	9/7/2010	24.3
091D	Pearson Bay	6/1/2010	14.5	7/6/2010	9.8	9/7/2010	90.6
091E	Pearson Bay	6/1/2010	9.6	7/6/2010	3.1	9/7/2010	6.3
092A	Proctor Creek	6/1/2010	22.8	7/6/2010	13.5	9/7/2010	4.1
092B	Proctor Creek	6/1/2010	3.0	7/6/2010	6.3	9/7/2010	5.2

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Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
092C	Proctor Creek	6/1/2010	4.1	7/6/2010	9.7	9/7/2010	3.1
092D	Proctor Creek	6/1/2010	2.0	7/6/2010	2.0	9/7/2010	2.0
092E	Proctor Creek	6/1/2010	1.0	7/6/2010	25.3	9/7/2010	3.0
093A	Ivy Bend	6/1/2010	14.6	7/6/2010	13.2	9/7/2010	5.2
093B	Ivy Bend	6/1/2010	28.8	7/6/2010	56.5	9/7/2010	2.0
093C	Ivy Bend	6/1/2010	20.1	7/6/2010	26.2	9/7/2010	3.1
094A	Rainy Creek Cove	6/1/2010	3.0	7/6/2010	12.1	9/7/2010	1.0
094B	Rainy Creek Cove	6/1/2010	21.1	7/6/2010	12.2	9/7/2010	<1
094C	Rainy Creek Cove	6/1/2010	4.1	7/6/2010	6.2	9/7/2010	2.0
094D	Rainy Creek Cove	6/1/2010	8.4	7/6/2010	14.8	9/7/2010	5.2
001A	Jennings Branch Cove	6/21/2010	1.0	8/2/2010	4.1	10/4/2010	1.0
001B	Jennings Branch Cove	6/21/2010	1.0	8/2/2010	2.0	10/4/2010	<1
001C	Jennings Branch Cove	6/21/2010	1.0	8/2/2010	<1	10/4/2010	<1
001D	Jennings Branch Cove	6/21/2010	1.0	8/2/2010	4.1	10/4/2010	1.0
001E	Jennings Branch Cove	6/21/2010	<1	8/2/2010	4.1	10/4/2010	2.0
009A	Cove 009	6/21/2010	16.0	8/2/2010	5.2	10/4/2010	1.0
009B	Cove 009	6/21/2010	4.1	8/2/2010	2.0	10/4/2010	1.0
009C	Cove 009	6/21/2010	2.0	8/2/2010	5.2	10/4/2010	1.0
009D	Cove 009	6/21/2010	5.2	8/2/2010	5.2	10/4/2010	1.0
009E	Cove 009	6/21/2010	2.0	8/2/2010	9.8	10/4/2010	1.0
095A	Cove 095	6/21/2010	1.0	8/2/2010	6.2	10/4/2010	6.3
095B	Cove 095	6/21/2010	<1	8/2/2010	1.0	10/4/2010	<1
095C	Cove 095	6/21/2010	1.0	8/2/2010	<1	10/4/2010	1.0
095D	Cove 095	6/21/2010	<1	8/2/2010	5.1	10/4/2010	6.3
096A	Cove 096	6/21/2010	<1	8/2/2010	2.0	10/4/2010	<1
096B	Cove 096	6/21/2010	<1	8/2/2010	1.0	10/4/2010	<1
096C	Cove 096	6/21/2010	4.1	8/2/2010	<1	10/4/2010	<1
097A	Gladstone Cove	6/21/2010	133.3	8/2/2010	8.5	10/4/2010	4.1
097B	Gladstone Cove	6/21/2010	4.1	8/2/2010	9.6	10/4/2010	<1
097C	Gladstone Cove	6/21/2010	<1	8/2/2010	<1	10/4/2010	3.1
098A	Cedar Creek	6/21/2010	26.9	8/2/2010	18.5	10/4/2010	12.7
098B	Cedar Creek	6/21/2010	42.0	8/2/2010	2.0	10/4/2010	1.0
098C	Cedar Creek	6/21/2010	4.1	8/2/2010	4.1	10/4/2010	1.0
099A	Mill Creek Cove	6/21/2010	2.0	8/2/2010	3.1	10/4/2010	3.1
099B	Mill Creek Cove	6/21/2010	2.0	8/2/2010	5.2	10/4/2010	<1
099C	Mill Creek Cove	6/21/2010	<1	8/2/2010	3.0	10/4/2010	1.0
099D	Mill Creek Cove	6/21/2010	4.1	8/2/2010	5.1	10/4/2010	3.0
099E	Mill Creek Cove	6/21/2010	3.1	8/2/2010	5.2	10/4/2010	2.0
100A	Bogue Bay	6/21/2010	13.2	8/2/2010	28.8	10/4/2010	14.8
100B	Bogue Bay	6/21/2010	6.3	8/2/2010	1.0	10/4/2010	1.0
100C	Bogue Bay	6/21/2010	<1	8/2/2010	<1	10/4/2010	4.1
100D	Bogue Bay	6/21/2010	<1	8/2/2010	2.0	10/4/2010	17.0
101A	Soap Creek Cove	6/21/2010	17.3	8/2/2010	9.7	10/4/2010	1.0
101B	Soap Creek Cove	6/21/2010	22.8	8/2/2010	6.3	10/4/2010	1.0

Lake of the Ozarks Water Quality Survey 2010 Data

Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result
101C	Soap Creek Cove	6/21/2010	4.1	8/2/2010	6.3	10/4/2010	12.1
101D	Soap Creek Cove	6/21/2010	14.4	8/2/2010	13.2	10/4/2010	5.2
102A	Indian Creek Cove	6/21/2010	<1	8/2/2010	4.1	10/4/2010	3.0
102B	Indian Creek Cove	6/21/2010	<1	8/2/2010	3.1	10/4/2010	<1
102C	Indian Creek Cove	6/21/2010	<1	8/2/2010	1.0	10/4/2010	1.0
102D	Indian Creek Cove	6/21/2010	2.0	8/2/2010	<1	10/4/2010	<1
102E	Indian Creek Cove	6/21/2010	3.1	8/2/2010	4.1	10/4/2010	2.0
102F	Indian Creek Cove	6/21/2010	<1	8/2/2010	39.3	10/4/2010	2.0
103A	Little Gravois Cove	6/21/2010	1.0	8/2/2010	18.7	10/4/2010	4.1
103B	Little Gravois Cove	6/21/2010	3.0	8/2/2010	7.4	10/4/2010	6.2
103C	Little Gravois Cove	6/21/2010	4.1	8/2/2010	3.1	10/4/2010	1.0
104A	Gravois Cove	6/21/2010	2.0	8/2/2010	1.0	10/4/2010	4.1
104B	Gravois Cove	6/21/2010	2.0	8/2/2010	5.2	10/4/2010	2.0
104C	Gravois Cove	6/21/2010	35.0	8/2/2010	4.1	10/4/2010	<1
105A	Cove 105	6/21/2010	10.8	8/2/2010	7.2	10/4/2010	<1
105B	Cove 105	6/21/2010	1.0	8/2/2010	9.7	10/4/2010	1.0
105C	Cove 105	6/21/2010	25.3	8/2/2010	9.8	10/4/2010	<1

Lake of the Ozarks Water Quality Survey 2011 Data

Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result	Date Collected	Result	Date Collected	Result	Date Collected	Result
106A	Rise Branch	5/31/2011	14.4	6/20/2011	8.5	7/5/2011	2.0	8/1/2011	14.5	9/6/2011	<1	10/3/2011	<1
106B	Rise Branch	5/31/2011	46.5	6/20/2011	7.5	7/5/2011	8.6	8/1/2011	8.5	9/6/2011	2.0	10/3/2011	<1
106C	Rise Branch	5/31/2011	12.0	6/20/2011	7.3	7/5/2011	1.0	8/1/2011	7.3	9/6/2011	<1	10/3/2011	<1
107A	Lick Creek	5/31/2011	8.6	6/20/2011	4.1	7/5/2011	5.2	8/1/2011	1.0	9/6/2011	5.2	10/3/2011	2.0
107B	Lick Creek	5/31/2011	18.1	6/20/2011	3.1	7/5/2011	4.1	8/1/2011	<1	9/6/2011	1.0	10/3/2011	1.0
107C	Lick Creek	5/31/2011	28.8	6/20/2011	14.8	7/5/2011	6.2	8/1/2011	17.5	9/6/2011	3.1	10/3/2011	2.0
108A	Little Buffalo Creek	5/31/2011	52.9	6/20/2011	<1	7/5/2011	6.3	8/1/2011	3.1	9/6/2011	2.0	10/3/2011	5.2
108B	Little Buffalo Creek	5/31/2011	25.9	6/20/2011	3.0	7/5/2011	2.0	8/1/2011	5.2	9/6/2011	3.1	10/3/2011	<1
108C	Little Buffalo Creek	5/31/2011	18.9	6/20/2011	3.1	7/5/2011	2.0	8/1/2011	<1	9/6/2011	1.0	10/3/2011	1.0
108D	Little Buffalo Creek	5/31/2011	29.2	6/20/2011	7.5	7/5/2011	1.0	8/1/2011	1.0	9/6/2011	2.0	10/3/2011	1.0
108E	Little Buffalo Creek	5/31/2011	23.1	6/20/2011	5.2	7/5/2011	1.0	8/1/2011	<1	9/6/2011	<1	10/3/2011	<1
109A	Big Buffalo Creek	5/31/2011	435.2	6/20/2011	5.2	7/5/2011	<1	8/1/2011	<1	9/6/2011	<1	10/3/2011	1.0
109B	Big Buffalo Creek	5/31/2011	129.6	6/20/2011	<1	7/5/2011	<1	8/1/2011	5.2	9/6/2011	5.2	10/3/2011	<1
109C	Big Buffalo Creek	5/31/2011	185.0	6/20/2011	1.0	7/5/2011	<1	8/1/2011	<1	9/6/2011	<1	10/3/2011	<1
109D	Big Buffalo Creek	5/31/2011	137.6	6/20/2011	1.0	7/5/2011	<1	8/1/2011	<1	9/6/2011	1.0	10/3/2011	1.0
109E	Big Buffalo Creek	5/31/2011	184.2	6/20/2011	2.0	7/5/2011	2.0	8/1/2011	1.0	9/6/2011	<1	10/3/2011	1.0
110A	Knobby Creek	5/31/2011	56.3	6/20/2011	<1	7/5/2011	1.0	8/1/2011	<1	9/6/2011	1.0	10/3/2011	<1
110B	Knobby Creek	5/31/2011	28.5	6/20/2011	1.0	7/5/2011	2.0	8/1/2011	<1	9/6/2011	1.0	10/3/2011	<1
110C	Knobby Creek	5/31/2011	36.9	6/20/2011	1.0	7/5/2011	2.0	8/1/2011	<1	9/6/2011	1.0	10/3/2011	<1
111A	Deer Creek	5/31/2011	NR[5]	6/20/2011	<1	7/5/2011	3.1	8/1/2011	<1	9/6/2011	<1	10/3/2011	3.1
111B	Deer Creek	5/31/2011	31.8	6/20/2011	4.1	7/5/2011	<1	8/1/2011	1.0	9/6/2011	1.0	10/3/2011	2.0
111C	Deer Creek	5/31/2011	21.3	6/20/2011	3.1	7/5/2011	<1	8/1/2011	<1	9/6/2011	<1	10/3/2011	1.0
111D	Deer Creek	5/31/2011	18.1	6/20/2011	1.0	7/5/2011	<1	8/1/2011	1.0	9/6/2011	1.0	10/3/2011	1.0
111E	Deer Creek	5/31/2011	19.9	6/20/2011	1.0	7/5/2011	<1	8/1/2011	<1	9/6/2011	1.0	10/3/2011	1.0
112A	Mossy Creek	5/31/2011	69.7	6/20/2011	6.3	7/5/2011	15.8	8/1/2011	1.0	9/6/2011	2.0	N/A[6]	NR
112B	Mossy Creek	5/31/2011	40.8	6/20/2011	2.0	7/5/2011	1.0	8/1/2011	3.0	9/6/2011	1.0	N/A[7]	NR
112C	Mossy Creek	5/31/2011	70.3	6/20/2011	32.7	7/5/2011	28.8	8/1/2011	1.0	9/6/2011	<1	N/A[8]	NR

5 No result due to broken sample container
6 Sample not collected due to low water preventing accessibility by boat
7 Sample not collected due to low water preventing accessibility by boat
8 Sample not collected due to low water preventing accessibility by boat

Lake of the Ozarks Water Quality Survey 2011 Data

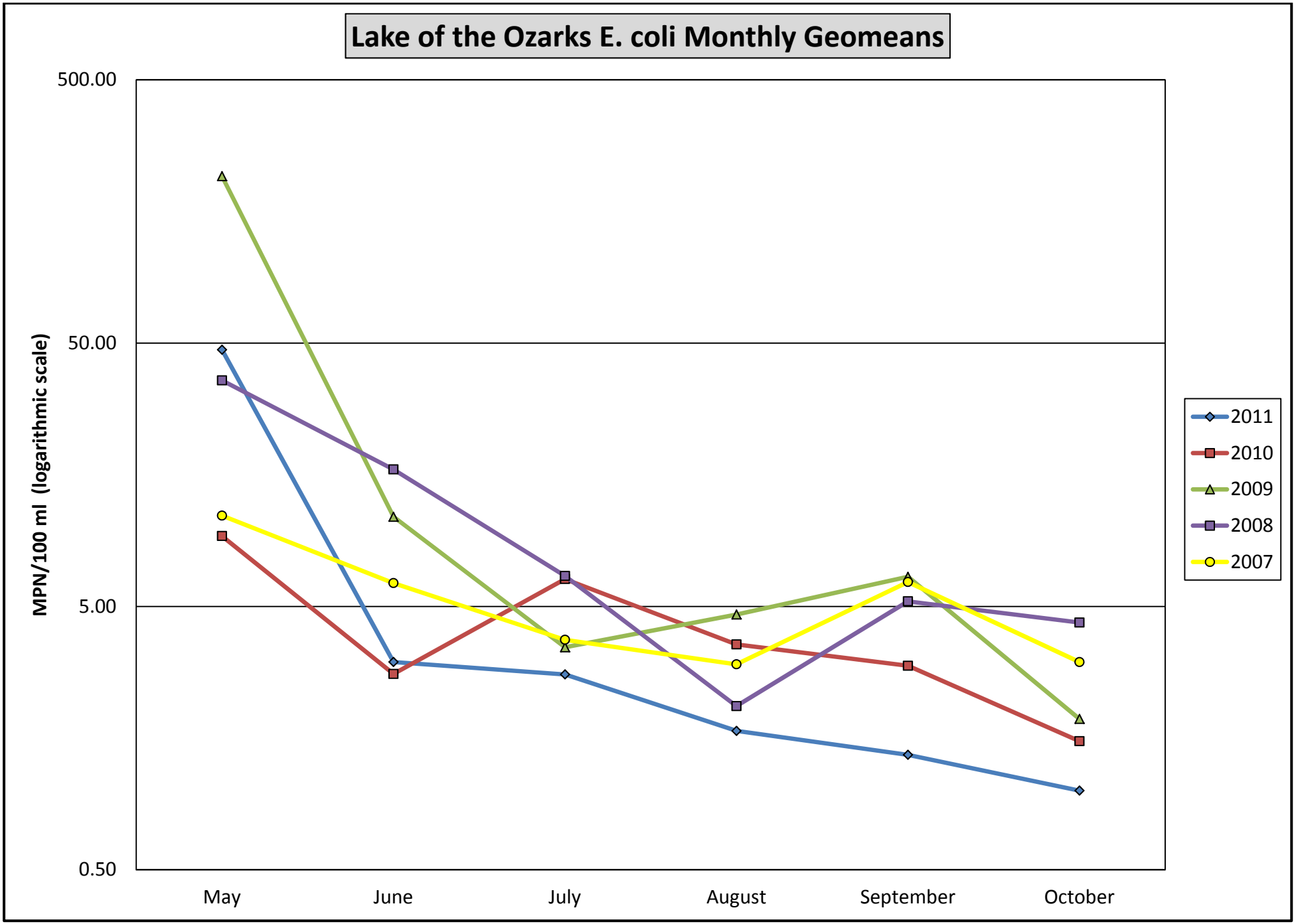
Site ID	Cove Name	Date Collected	Result	Date Collected	Result	Date Collected	Result	Date Collected	Result	Date Collected	Result	Date Collected	Result
113A	Brushy Creek	5/31/2011	30.5	6/20/2011	9.7	7/5/2011	2.0	8/1/2011	5.2	9/6/2011	2.0	10/3/2011	<1
113B	Brushy Creek	5/31/2011	18.7	6/20/2011	3.1	7/5/2011	6.3	8/1/2011	<1	9/6/2011	1.0	10/3/2011	<1
113C	Brushy Creek	5/31/2011	25.9	6/20/2011	2.0	7/5/2011	8.5	8/1/2011	3.1	9/6/2011	<1	10/3/2011	<1
114A	Cole Camp Creek	5/31/2011	261.3	6/20/2011	6.3	7/5/2011	7.4	8/1/2011	4.1	9/6/2011	2.0	10/3/2011	37.3
114B	Cole Camp Creek	5/31/2011	137.6	6/20/2011	1.0	7/5/2011	<1	8/1/2011	<1	9/6/2011	3.1	10/3/2011	<1
114C	Cole Camp Creek	5/31/2011	110.6	6/20/2011	3.1	7/5/2011	11.0	8/1/2011	15.8	9/6/2011	10.9	10/3/2011	<1
114D	Cole Camp Creek	5/31/2011	83.9	6/20/2011	2.0	7/5/2011	3.1	8/1/2011	1.0	9/6/2011	4.1	10/3/2011	1.0
114E	Cole Camp Creek	5/31/2011	128.1	6/20/2011	4.1	7/5/2011	10.9	8/1/2011	2.0	9/6/2011	<1	10/3/2011	<1
115A	Turkey Creek	5/31/2011	238.2	6/20/2011	2.0	7/5/2011	3.1	8/1/2011	1.0	9/6/2011	3.1	10/3/2011	<1
115B	Turkey Creek	5/31/2011	118.7	6/20/2011	1.0	7/5/2011	2.0	8/1/2011	4.1	9/6/2011	5.2	10/3/2011	1.0
115C	Turkey Creek	5/31/2011	75.9	6/20/2011	7.4	7/5/2011	5.2	8/1/2011	2.0	9/6/2011	2.0	10/3/2011	1.0
115D	Turkey Creek	5/31/2011	90.8	6/20/2011	2.0	7/5/2011	6.3	8/1/2011	<1	9/6/2011	3.1	10/3/2011	3.1
115E	Turkey Creek	5/31/2011	78.9	6/20/2011	5.2	7/5/2011	2.0	8/1/2011	2.0	9/6/2011	<1	10/3/2011	<1
116A	Feaster Branch	5/31/2011	NR[9]	N/A[10]	NR	7/5/2011	7.4	8/1/2011	4.1	9/6/2011	3.1	10/3/2011	4.1
116B	Feaster Branch	5/31/2011	NR[11]	N/A[12]	NR	7/5/2011	<1	8/1/2011	<1	9/6/2011	1.0	10/3/2011	<1
116C	Feaster Branch	5/31/2011	NR[13]	N/A[14]	NR	7/5/2011	4.1	8/1/2011	<1	9/6/2011	4.1	10/3/2011	8.4
117A	White Branch	5/31/2011	40.8	6/20/2011	12.1	7/5/2011	24.3	8/1/2011	5.2	9/6/2011	2.0	10/3/2011	4.1
117B	White Branch	5/31/2011	21.6	6/20/2011	7.4	7/5/2011	4.1	8/1/2011	2.0	9/6/2011	<1	10/3/2011	1.0
117C	White Branch	5/31/2011	24.6	6/20/2011	10.9	7/5/2011	30.1	8/1/2011	3.1	9/6/2011	2.0	10/3/2011	<1
118A	Blue Branch	5/31/2011	53.8	6/20/2011	7.4	7/5/2011	7.3	8/1/2011	16.0	9/6/2011	2.0	10/3/2011	3.0
118B	Blue Branch	5/31/2011	29.2	6/20/2011	3.1	7/5/2011	4.1	8/1/2011	20.1	9/6/2011	4.1	10/3/2011	<1
118C	Blue Branch	5/31/2011	13.4	6/20/2011	8.5	7/5/2011	23.8	8/1/2011	4.1	9/6/2011	<1	10/3/2011	<1

9 No result due to improper sample documentation
10 Sample not collected
11 No result due to improper sample documentation
12 Sample not collected
13 No result due to improper sample documentation
14 Sample not collected

APPENDIX D

Monthly Geometric Means Graph

Water Quality Survey Report
Lake of the Ozarks
Miller, Camden, Morgan, and Benton Counties


Lake of the Ozarks E. coli Monthly Geomeans
500.00
50.00
5.00
0.50
MPN/100 ml (logarithmic scale)
May
June
July
August
September
October
2011
2010
2009
2008
2007