



Prepared in cooperation with the
OKLAHOMA WATER RESOURCES BOARD

Environmental Characteristics and Geographic Information System Applications for the Development of Nutrient Thresholds in Oklahoma Streams

Water-Resources Investigations Report 02–4191

Environmental Characteristics and Geographic Information System Applications for the Development of Nutrient Thresholds in Oklahoma Streams

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Water-Resources Investigations Report 02–4191

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Conversion Factors and Datum

Multiply	By	To obtain
Length		
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
Area		
square foot (ft ²)	0.09290	square meter (m ²)
square mile (mi ²)	2.590	square kilometer (km ²)

Vertical coordinate information is referenced to North American Vertical Datum of 1988 (NAVD 88).

Horizontal coordinate information is referenced to North American Datum of 1983 (NAD 83).

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Abstract

The U.S. Environmental Protection Agency has developed nutrient criteria using ecoregions to manage and protect rivers and streams in the United States. Individual states and tribes are encouraged by the U.S. Environmental Protection Agency to modify or improve upon the ecoregion approach. The Oklahoma Water Resources Board uses a dichotomous process that stratifies streams using environmental characteristics such as stream order and stream slope. This process is called the Use Support Assessment Protocols, subchapter 15. The Use Support Assessment Protocols can be used to identify streams threatened by excessive amounts of nutrients, dependant upon a beneficial use designation for each stream. The Use Support Assessment Protocols, subchapter 15 uses nutrient and environmental characteristic thresholds developed from a study conducted in the Netherlands, but the Oklahoma Water Resources Board wants to modify the thresholds to reflect hydrologic and ecological conditions relevant to Oklahoma streams and rivers.

Environmental characteristics thought to affect impairment from nutrient concentrations in Oklahoma streams and rivers were determined for 798 water-quality sites in Oklahoma. Nutrient, chlorophyll, water-properties, and location data were retrieved from the U.S. Environmental Protection Agency STORET database including data from the U.S. Geological Survey, Oklahoma Conservation Commission, and Oklahoma Water Resources Board. Drainage-basin area, stream order, stream slope, and land-use proportions were determined for each site using a Geographic Information System. The methods, procedures, and data sets used to determine the environmental characteristics are described.

Introduction

The U.S. Environmental Protection Agency has developed nutrient criteria using ecoregions to manage and protect rivers and streams in the United States from impairment (Robertson, Saad, and Wieben, 2001). Individual states and tribes are encouraged by the U.S. Environmental Protection Agency to modify or improve upon the ecoregion approach. (Robertson, Saad, and Wieben, 2001). The Oklahoma Water Resources Board (OWRB) developed a dichotomous process that stratifies or groups streams using environmental characteristics such as

stream order and stream slope to identify streams that need further study to determine if they are impaired (OWRB, 2001). This process is called the Use Support Assessment Protocols, subchapter 15 (USAP). The OWRB is using nutrient and environmental characteristic thresholds developed in the Netherlands (Peters and Gardeniers, 1998; OWRB, 2001). The USAP can be used to identify streams threatened by excessive amounts of nutrients, dependant upon a beneficial use designation for each stream. Nutrient criteria are not synonymous with water-quality standards. The purpose of the USAP is to identify streams, based on nutrient and environmental characteristic thresholds for each stream, that may be threatened by excessive amounts of nutrients and impairment of their beneficial use. Further studies would be required to determine if water-quality standards are exceeded.

The U.S. Geological Survey, in cooperation with the Oklahoma Water Resources Board, is providing descriptive statistics of water-quality sampling sites that can be used to modify the USAP to reflect hydrological and ecological conditions relevant to Oklahoma streams and rivers. Four environmental characteristics -- drainage-basin area, stream order, stream slope, and land-use proportions -- that affect nutrient concentrations in Oklahoma streams were compiled using a Geographic Information System (GIS) and are provided in appendix 1 (back of report). These characteristics, when used in conjunction with water-quality data collected from Federal, State, tribal, and local programs, will help evaluate streams in Oklahoma and through statistical models, help determine which streams are nutrient threatened.

Purpose and Scope

This report describes the methods, procedures, and data sets used to determine environmental characteristics and provides a list of the environmental characteristics (appendix 1, back of report) that can be used to help modify the USAP thresholds to represent hydrological and ecological conditions relevant to streams in Oklahoma. Nutrient, chlorophyll, water-properties, and location data were retrieved for 798 water-quality sites from the U. S. Environmental Protection Agency STORET database (U.S. Environmental Protection Agency, 2001), the Oklahoma Conservation Commission, and the Oklahoma Water Resources Board. STORET included data collected by the U.S. Geological Survey.

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The 798 water-quality sites are located in Oklahoma, but the geographic scope of the data sets used to derive environmental characteristics included the Arkansas-Red River drainage basins, an area of about 202,000 square miles (fig. 1). There are many sampling sites listed in appendix 1 that are reported as having different site identification numbers but have identical latitude and longitude coordinates. This is because there are multiple federal and state agencies collecting and maintaining independent water-quality databases that use different procedures for designating site identification numbers. This report provides environmental characteristics for each water-quality site so that the agencies responsible for maintaining a particular site would have access to environmental characteristics through the site identification number. The water-quality sites are not labeled on figure 1, as many of the sites are extremely close together and the purpose of this report is to provide the environmental characteristics and to describe the methods, procedures, and data sets used to determine the environmental characteristics.

Acknowledgments

The authors thank Robert Tortorelli, Evan Hornig, and Lyn Osburn of the U.S. Geological Survey for their contributions to this report.

Environmental Characteristics and GIS Applications

Drainage-basin areas

Drainage-basin areas for 798 water-quality sites in Oklahoma were determined from several data sources using ARC/INFO (ESRI, 2001a) and ARC/VIEW (ESRI, 2001b) GIS applications. Topographic data sets of flow direction and flow accumulation were used to delineate drainage basins. Flow-direction and flow-accumulation data sets were created from a hydrologically conditioned Digital Elevation Model (DEM) with a 60-meter cell size. The DEM was created from elevation data (hypso-graphy) and stream data (hydrography) from digital versions of the U.S. Geological Survey 1:100,000-scale topographic maps (Cederstrand and Rea, 1995).

Development of flow-direction and flow-accumulation data sets is an important step in delineating drainage basins using DEMs. A flow-direction data set (fig. 2) contains cell values that indicate the direction water will flow out of each cell based on elevation (Jenson and Domingue, 1988). A coding structure developed by Jenson and Domingue, (1988) codes cells based on the orientation with respect to one of the eight neighboring cells. The coding structure uses slope calculations between neighboring cells to code individual cells. Slope is calculated from the change in elevation between cells divided by the distance between cell centers. The distance between cell

centers for diagonal cells is measured by multiplying the cell size by the square root of two.

The flow accumulation grid (fig. 3) contains cell values computed from the flow direction grid that equal the number of cells that flow into it. Cells having a flow accumulation value of zero (to which no other cells flow) generally correspond to the pattern of ridges (Jenson and Domingue, 1988). Cells that have many other cells flowing into it usually are representative of streams or rivers.

The ARC/INFO GRID module was used to delineate drainage basins and compute corresponding basin areas (ESRI, 2001a). Individual water-quality sites were used to define a pour point (an outlet for a drainage area) from which a complete or partial drainage basin was created. An automated process was developed that iteratively selected a water-quality site, converted it into a pour point, snapped the pour point to cells of high flow-accumulation, and delineated a drainage basin for that site. The RESELECT command selected a single water-quality site and the POINTGRID command converted the point into a grid point. The SNAPPOUR command adjusted the points to cells of high flow accumulation and the WATERSHED function delineated the drainage area using the flow-accumulation and flow-direction data sets.

A partial drainage basin was created when the drainage basin for a water-quality site extended beyond the coverage of the flow-direction and flow-accumulation data sets of Cederstrand and Rea (1995), which were limited to a small margin around Oklahoma. Additional techniques using the ARC/VIEW GEOPROCESSING (ESRI, 2001b) extension were used to complete drainage basins. Partial drainage basins were completed by appending the most detailed digital hydrologic unit maps available for that area. Two hydrologic unit data sets, Seaber and others (1984) and Kansas Data Access and Support Center (2000), were used to complete partially defined drainage basins. The UNION operation appended the partially defined drainage basin and the hydrologic unit maps. The DISSOLVE operation eliminated small sliver polygons created from the UNION operation. This method resulted in one polygon unit that represented the drainage-basin area. Drainage-basin areas for each water-quality site are listed in appendix 1 (back of report).

Stream Order

Stream order was calculated using methods developed by Strahler (1952) and a stream data set created from a hydrologic derivative (flow accumulation) of the U.S. Geological Survey National Elevation Dataset (NED). NED is spatially referenced in a geographic coordinate system using degrees, minutes, and

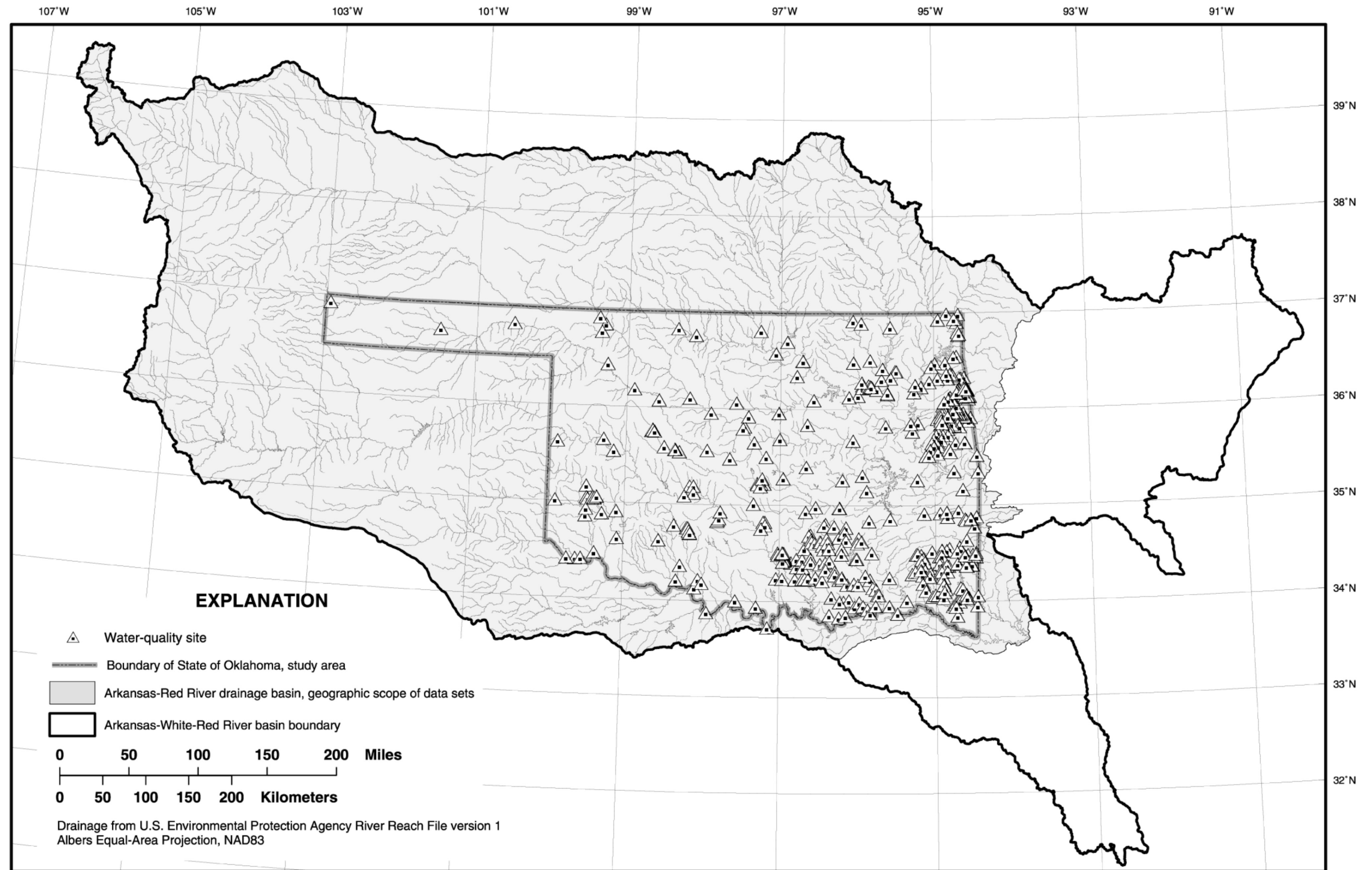


Figure 1. Locations of water-quality sites, study area, and geographic scope of data sets used to determine environmental characteristics.

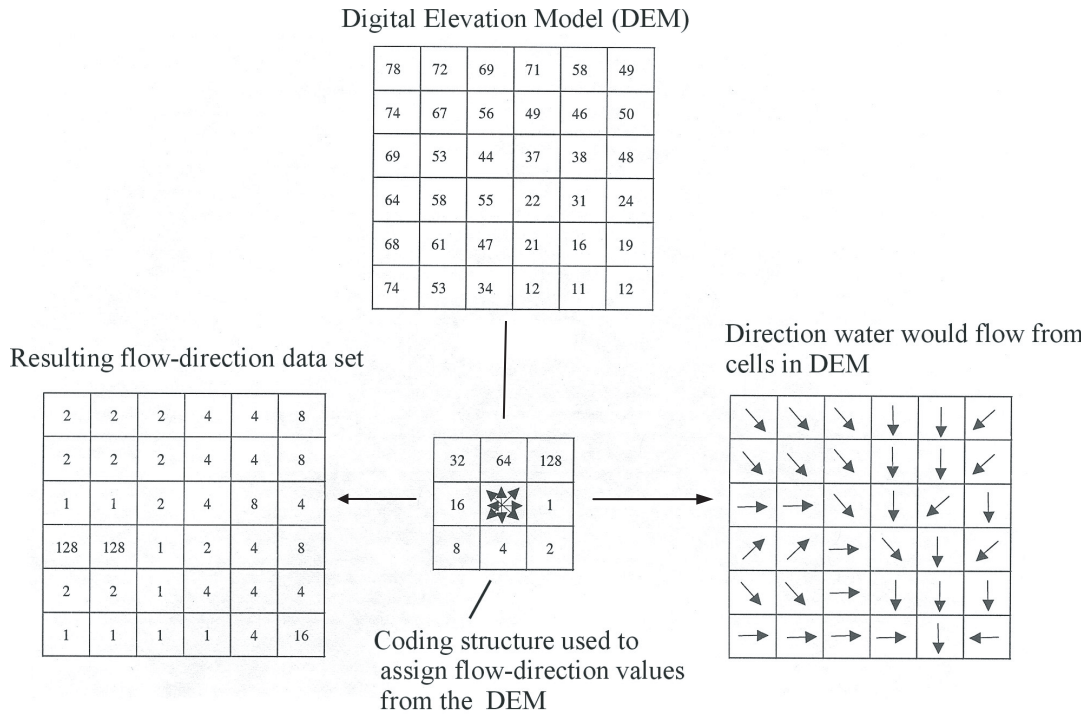


Figure 2. Flow-direction grid using a coding structure developed by Jenson and Domingue (1988), modified from Environmental Systems Research Institute (2001a).

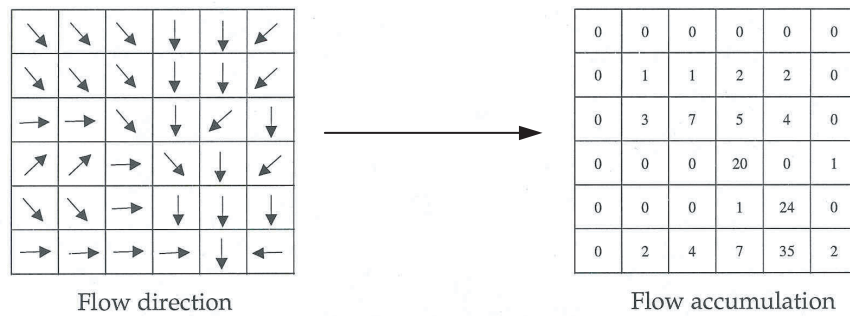


Figure 3. Flow-accumulation grid (modified from Environmental Systems Research Institute, (2001a).

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seconds as units of measurement. NED is based on 1:24,000-scale topographic maps and has a resolution of one arc-second (equivalent to 30 meters). The NED data were projected to an Albers Equal Area projection and resampled to a 30-meter pixel resolution. Flow-direction and flow-accumulation data sets were created for the Arkansas-White-Red River basin (fig. 1) using the FILL, FLOWDIRECTION, and FLOWACCUMULATION functions (Elevation Derivatives for National Applications, 2001). These data sets (hydrologic derivatives of the NED) are similar to derivatives of the 60-meter DEM developed by Cederstrand and Rea (1995) used to delineate drainage basins.

The stream network needs to have a constant stream density and include all upstream headwaters to calculate stream order. Stream density can be expressed as a measure of closeness between stream channels. A stream network that varies in stream density will produce higher stream order values in more dense areas and lower stream order values in less dense areas. Figure 4 shows U.S. Geological Survey 1:100,000-scale topographic quadrangle boundaries and the National Hydrography Dataset (NHD) (2001). The varying stream density is shown in the upper Bristow quadrangle in relation to stream density in the lower Shawnee quadrangle. This variation in stream density is due to varying detail during the digitizing process.

A detailed and consistent stream network was created using the ARC/INFO GRID function STREAMLINE to convert the raster linear network (flow accumulation) to a vector linear network (synthetic hydrography) that represented

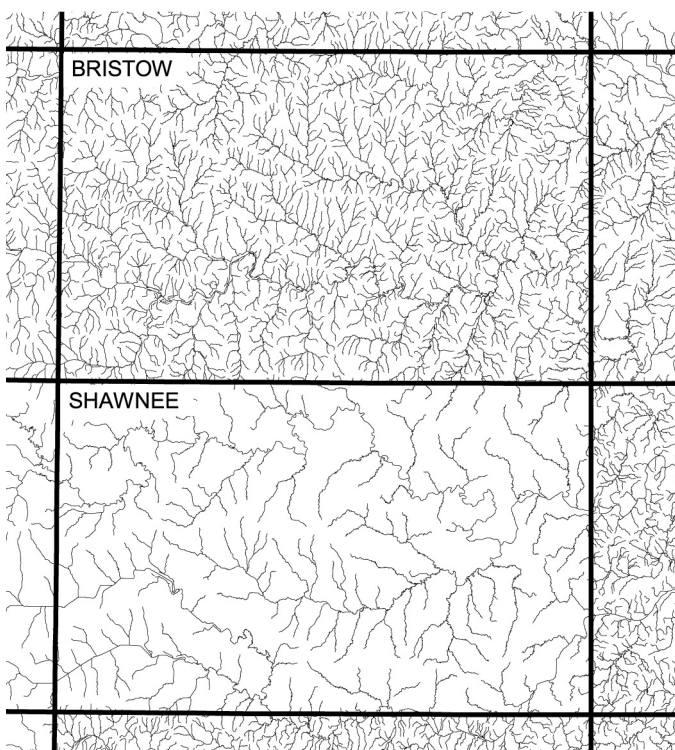


Figure 4. Portion of the National Hydrography Dataset (2001) in Oklahoma emphasizing the varying stream density.

streams at a consistent density (fig. 5). The synthetic hydrography data set was created using a threshold of 5,000 30-meter cells from the flow accumulation grid. Cell threshold has a direct affect on the length of headwater streams and minimum size of drainage-basin areas that can be delineated. The minimum size drainage basin that could be delineated based on a threshold of 5,000 30-meter cells is 1.7 square miles. Increasing or decreasing the cell threshold directly affects the length of the synthetic hydrography. Although the derived synthetic hydrography is based on 1:24,000-scale topographic maps, derived 1st order streams, in areas of low topographic relief, may actually be a 2nd order stream when manually determined using 1:24,000-scale topographic map. In areas of high topographic relief, stream order values derived using the synthetic hydrography were consistent with stream order values determined manually using 1:24,000-scale topographic maps.

A program was used to assign stream order values for streams in the synthetic hydrography data set using methods developed by Strahler (1957; fig. 6).

The beginning or headwater streams are designated as first-order streams. A second-order stream is formed when two first-order streams intersect; when two second-order streams intersect, a third-order stream is formed; and so forth. The ARC/INFO NEAR command was used to locate the stream nearest to a water-quality site and transfer the stream order value to the water-quality site. The derived stream order values were transferred to the environmental characteristic data set (appendix 1, back of report).

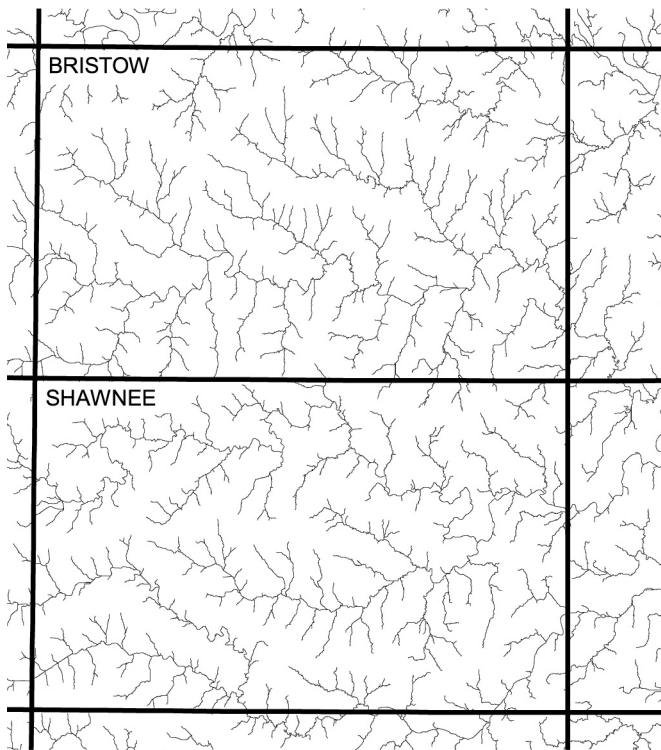


Figure 5. Synthetic hydrography created from the National Elevation Dataset (2001) showing the consistent stream density used to calculate stream order.

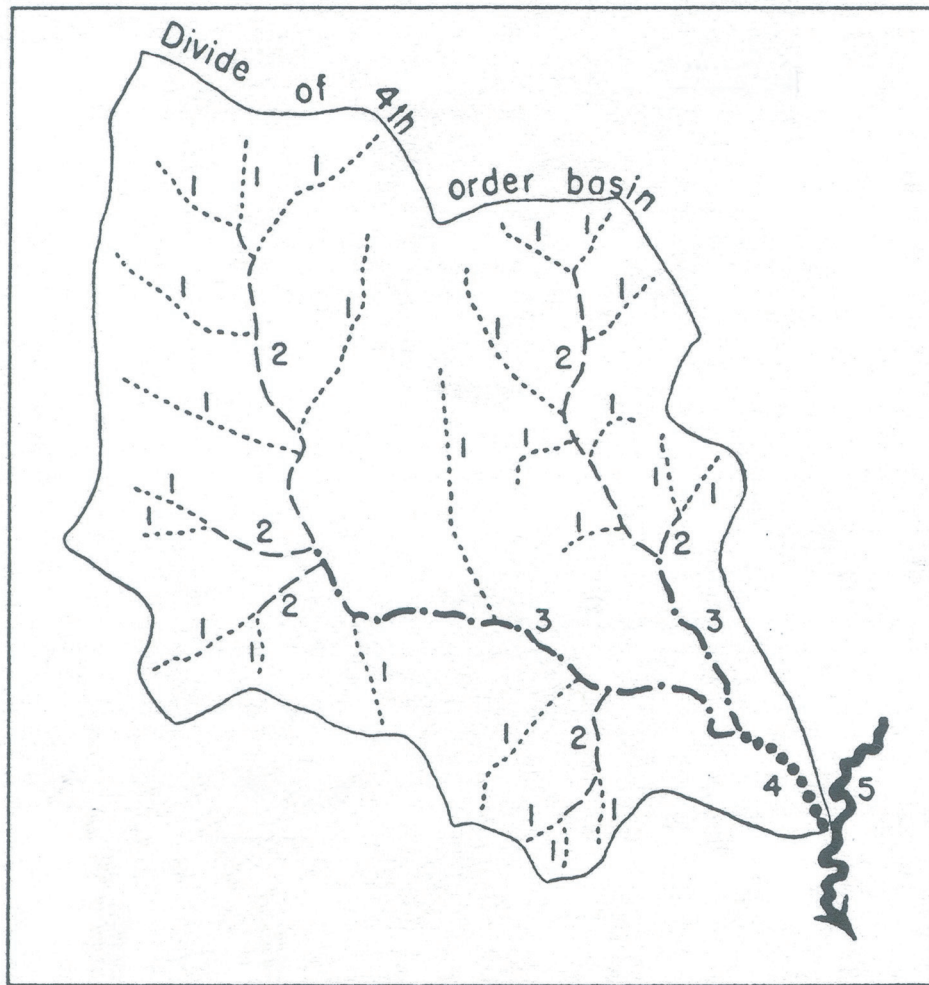


Figure 6. Method of designing stream order (modified from Strahler, 1957, p. 344).

Immediate Stream-Channel Slope

The immediate stream-channel slope is defined in this report as the change in elevation between beginning and ending points of a stream segment divided by the length of the stream segment. The average length of a stream segment used to compute the immediate stream-channel slope was 1.75 miles. The minimum and maximum lengths used were .31 mile and 3.1 miles, respectively. Stream slope varied slightly when checked against slope values determined manually from 1:24,000-scale topographic maps.

Basin characteristics such as stream slope can be problematic because the length measured is highly dependent on scale or in this case, dependent on the cell threshold used to create synthetic hydrography. Flow-accumulation data sets, and the DEM created by Cederstrand and Rea (1995) were used to calculate the immediate stream-channel slope for each of the 798 water-quality sites. The "Drainage-basin areas" section of this

report provides specific information about topographic data sets created by Cederstrand and Rea.

A vector linear network that represented Oklahoma streams was created from the flow-accumulation data set using the ARC/INFO GRID function STREAMLINE. The flow-accumulation and flow-direction data sets created by Cederstrand and Rea (1995) were designed specifically for defining watersheds; therefore, the corresponding stream network is very dense and file size is very large. To decrease file size and reduce processing times, the ARC/INFO BUFFER command was used to select only the streams within a 5,000-meter distance from the water-quality sites (fig. 7). This method decreased the number of arcs from 567,727 to 58,794 arcs.

The NODEPOINT command was used to create points for each node in the stream data set. A node is defined as the beginning or ending point of a line; therefore, any confluence of streams would be represented as a node. A unique identification code for each point was used that linked the points back to

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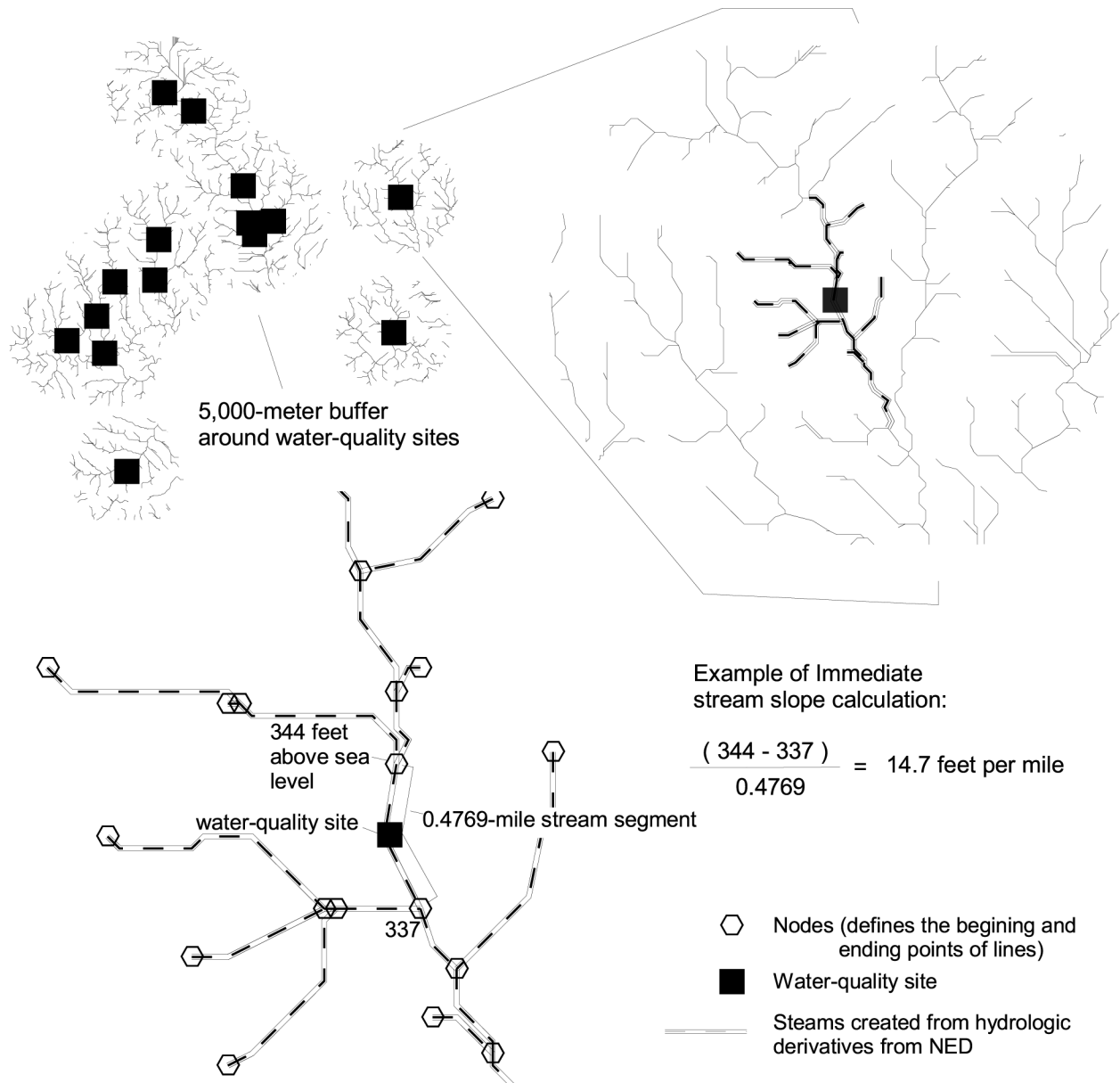


Figure 7. Method of designating immediate stream-channel slope.

the nodes in the stream data set. The LATTICESPOT command was used to overlay the point data onto the DEM and interpolate an elevation value from the underlying neighboring cells. The elevation values were transferred from the point data set to nodes in the stream data set using the RELATE and MOVE commands.

The CALCULATE command was used to compute the change in elevation between nodes, divided by the distance between nodes. This calculation resulted in the immediate stream-channel slope for stream segments near water-quality sites (fig. 7). The NEAR command was used to locate the nearest stream segment for each water-quality site and transfer the slope value to the water-quality data set. The stream slope values were transferred to the environmental characteristic data set (appendix 1, back of report).

Land Use

Land-use proportions were computed for each of the 798 drainage-basin areas using the ARC/INFO GRID module and land-use information from the National Land Cover Dataset (NLCD) (2000). The NLCD is based on 30-meter Landsat Thematic Mapper (TM) data acquired by the Multi-Resolution Land Characterization (MRLC) Consortium. The base data set for the NLCD project was compiled using leaves-off Landsat TM data, nominal-1992 acquisitions and other ancillary leaves-on Landsat TM data. The NLCD data set consists of 21 land-use categories (table 1). These land-use categories were aggregated to produce a land-use data set that consisted of 11 land-use categories (table 2).

Table 1. Original National Land Cover Dataset (NLCD) land-use category system key and reclassified land-use category system key used in report to compute land-use proportions

[n/a, not applicable]

NLCD key	Land-use category descriptions	Key used in report
11	Open water	1
12	Perennial ice/Snow	1
21	Low-intensity residential	2
22	High-intensity residential	2
23	Commercial/Industrial/Transportation	2
31	Bare rock/Sand/Clay	3
32	Quarries/Strip mines/Gravel pits	3
33	Transitional	3
41	Deciduous forest	4
42	Evergreen forest	4
43	Mixed forest	4
51	Shrubland	5
61	Orchards/Vineyards/Other	n/a
71	Grasslands/Herbaceous	6
81	Pasture/Hay	7
82	Row crops	7
83	Small grains	8
84	Fallow	9
85	Urban/Recreational grasses	10
91	Woody wetlands	11
92	Emergent herbaceous wetlands	11

Table 2. Summary table of the reclassified land-use category system key

Resampled key used in report	Land-use category description
1	Water
2	Developed lands
3	Barren
4	Forest upland
5	Shrubland
6	Grasslands/Herbaceous
7	Pasture/Hay
8	Row crops/Small grains
9	Fallow
10	Urban/Recreational grasses
11	Wetlands

A land-use data set was compiled for the Arkansas-White-Red River basin (fig.1). The ARC/INFO MASK command was used to clip out land-use information for each drainage basin. This method produced a land-use data set for each drainage area. Land-use proportions within each drainage basin were calculated by dividing the number of cells of a given category by the total number of cells in a drainage basin multiplied by 100 to yield the percent land-use. The land-use proportions were appended to the environmental characteristic data set (appendix 1, back of report).

Summary

The U.S. Environmental Protection Agency (USEPA) has developed nutrient criteria using ecoregions to manage and protect rivers and streams in the United States. Individual states and tribes are encouraged by the U.S. Environmental Protection Agency to modify or improve upon the ecoregion approach. The Oklahoma Water Resources Board (OWRB) has developed a dichotomous process that stratifies or groups streams based on environmental characteristics such as stream order and stream slope; this process is commonly known as the Use Support Assessment Protocols, subchapter 15 (USAP). The OWRB is using nutrient and environmental characteristic thresholds developed from a study conducted in the Netherlands. The U.S. Geological Survey, in cooperation with the OWRB, is providing descriptive statistics of water-quality sampling sites that can be used to modify the USAP to reflect hydrological and ecological conditions relevant to Oklahoma streams and rivers. Four environmental characteristics -- drainage-basin area, stream

slope, stream order, and land-use proportions -- that affect nutrient concentrations in Oklahoma streams were compiled using a Geographic Information System and are provided in appendix 1 (back of report).

Data sets of flow-direction and flow-accumulation (also referred to as hydrologic derivatives) were used to define drainage basins for 798 water-quality sites in Oklahoma. The ARC/INFO GRID module was used to create drainage basins and compute corresponding areas. Individual water-quality sites were used to define a pour point (an outlet for a drainage area) from which a complete or partial drainage basin was created. An automated process was developed that iteratively selected a water-quality site, converted it into a pour point, snapped the pour point to cells of high flow-accumulation, and delineated a drainage basin for that site. Over 400 drainage basins extended beyond the coverage of the flow-accumulation and flow-direction data sets developed by Cederstrand and Rea (1995). The ARC/VIEW GEOPROCESSING extension was used to append drainage partially defined drainage areas to the most detailed digital hydrologic unit maps available for those areas.

Stream order was calculated using methods developed by Strahler (1952) and a stream data set created from a hydrologic derivative (flow accumulation) of the U.S. Geological Survey National Elevation Dataset (NED). The stream data set derived from the flow accumulation dataset modeled streams in Oklahoma at a consistent stream density. A program was used to assign stream order values for streams in the synthetic hydrography data. The beginning or headwater streams are designated as a first-order stream. A second-order stream is formed when two first-order streams intersect; when two second-order streams intersect, a third-order stream is formed; and so forth.

The immediate stream-channel slope for each of the 798 water-quality sites was calculated using flow-accumulation and Digital Elevation Model data sets. A vector linear network that represented streams in Oklahoma at a consistent density was created from the flow-accumulation data set. A point data set was made from each beginning and ending node in the stream data set. A unique identification code was used that linked the point data set to the stream data set. The point data set was used to overlay the DEM and extract elevation information for each point. Elevations for each point were transferred to the nodes in the stream data set using unique identification codes. A simple calculation using the change in elevation between nodes, divided by the distance between nodes, was performed to calculate the immediate stream-channel slope for stream segments near water-quality sites.

Land-use proportions were computed for each of the 798 drainage-basin areas using the ARC/INFO GRID module and land-use information from the National Land Cover Dataset (NLCD). The NLCD is based on 30-meter Landsat Thematic Mapper (TM) data acquired by the Multi-Resolution Land Characterization (MRLC) Consortium. The base data set for the NLCD project was compiled using leaves-off Landsat TM data, nominal-1992 acquisitions and other ancillary leaves-on Landsat TM data. The NLCD data set consists of twenty-one land-use categories. These land-use categories were aggregated to produce a land-use data set that consisted of 11 land-use categories. A land-use data set was compiled for the Arkansas-White-Red River basin. Drainage-basin boundaries were used to select only the land-use information inside the drainage basins. Land-use proportions within each drainage basin were calculated by dividing the number of cells of given category by the total number of cells in a drainage basin multiplied by 100.

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Appendix

14 Environmental Characteristics and Geographic Information System Applications for the Development of Nutrient Thresholds in Oklahoma Streams

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma

[dms., degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics				Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)									
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands
Illinois R abv Osage	361031	0942329	264.0	4	7	1.1	6.7	0.2	32	0.3	0	52.3	5.8	0	0.9	0.6
Upper Mountain Fork R AR	343141	0942400	145.0	4	7	0.3	0.2	0.7	83.4	0	0	15	0	0	0	0.1
AT249453	352332	0942557	149,403.0	8	<1	1	1	0	11	6	48	10	21	0	0	1
Upper Buffalo Ck AR	342515	0942706	14.0	2	20	0.1	0.8	0	71.2	0	0	27.7	0.2	0	0	0
050014	352043	0942709	1,887.0	5	<1	0.9	0.8	0.8	67.6	0	0	28.2	0.6	0	0	1.1
07249440	352043	0942709	1,887.0	5	<1	0.9	0.8	0.8	67.6	0	0	28.2	0.6	0	0	1.1
07249985	353109	0942758	433.9	4	14	0.5	0.1	0.2	83.5	0.7	0	14.2	0.6	0	0	0.3
James Fork of Poteau R	350959	0942832	178.0	4	3	0.7	0.6	0.8	48.8	0	0	48.5	0.2	0	0	0.4
07339630	340334	0942835	49.8	2	15	0.2	0	6.5	89.9	0	0	3.3	0	0	0	0
07247015	345247	0942902	282.1	4	1	0.9	0.5	1.7	72.1	0	0	24.5	0.3	0	0	0
Poteau R, Loving	345247	0942902	282.1	4	1	0.9	0.5	1.7	72.1	0	0	24.5	0.3	0	0	0
07339150	335716	0942905	13.7	1	17	0	0.2	1.9	82.9	0	0	7.1	0	0	0	7.8
Cow Ck	340452	0942937	46.0	2	26	0.2	0	7	89.6	0	0	3.2	0	0	0	0
07338730	343024	0942938	11.3	2	95	0	0	4.2	93.5	0	0	2.2	0	0	0	0
Illinois R at Hwy 16	360840	0942939	505.0	5	3	0.9	7.1	0.1	25.8	0.2	0	58.6	5.8	0	1	0.5
07338735	342744	0942950	33.8	2	4	0.1	0.1	0.3	84	0	0	15.4	0.1	0	0	0
OKS0155	342901	0943005	192.4	4	7	0.3	0.3	1	83	0	0	15.1	0	0	0	0.1
07247250	344625	0943043	94.5	3	24	0	0.1	0.8	93.1	0	0	6.1	0	0	0	0
Blackfork Ck nr. Haw Ck, Page	344625	0943043	94.5	3	24	0	0.1	0.8	93.1	0	0	6.1	0	0	0	0
AT249435	351419	0943112	1,836.0	5	<1	1	1	1	69	0	0	28	0	0	0	1
Ballard Ck Upper	345948	0943136	1.0	1	52	0	1.7	0	5.7	0	0	92.4	0	0	0.3	0
10213Z26	342815	0943150	223.2	4	17	0.2	0.3	0.9	85	0	0	13.3	0	0	0	0.1
07338733	342914	0943222	23.1	2	54	0	0	0.1	98.7	0	0	1.1	0	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban/Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Basin characteristics			Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)												
	Latitude (dms)	Longitude (dms)	Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands
Beech Ck	342914	0943222	23.1	2	54	0	0	0.1	98.7	0	0	1.1	0	0	0	0
07196930	355454	0943230	64.7	3	11	0.6	0.7	0	48.5	0.2	0	47.3	2.3	0	0.1	0.3
07338855	342252	0943251	66.0	3	10	0.1	0.3	2.4	73.6	0	0	23.5	0.2	0	0	0
07338850	342241	0943255	9.2	2	71	0	0	7.1	92.7	0	0	0.2	0	0	0	0
Mine Ck	342241	0943255	9.2	2	71	0	0	7.1	92.7	0	0	0.2	0	0	0	0
217002X3Z282	360800	0943305	0.4	1	151	0	1.4	0	80.7	1.8	0	16	0	0	0	0.1
07338737	342638	0943314	9.5	1	20	0.1	0.6	2	72.2	0	0	25.1	0.1	0	0	0
Dry Ck	342638	0943314	9.5	1	20	0.1	0.6	2	72.2	0	0	25.1	0.1	0	0	0
OKS0162	345133	0943315	290.5	4	3	0.9	0.5	1.7	71.3	0	0	25.4	0.2	0	0	0
07195485	360623	0943353	45.9	2	33	0.5	1	0	27.5	0.2	0	66.4	4	0	0.1	0.2
Lower Ballard Ck	360623	0943353	45.9	2	33	0.5	1	0	27.5	0.2	0	66.4	4	0	0.1	0.2
07247025	345129	0943356	302.6	4	23	0.9	0.5	1.7	72.2	0	0	24.6	0.2	0	0	0
07195498	360804	0943406	6.7	1	39	0.4	11	0.3	51.9	0.9	0	31.6	2	0	0.9	0.9
East Beaver Ck	360804	0943406	6.7	1	39	0.4	11	0.3	51.9	0.9	0	31.6	2	0	0.9	0.9
07196955	355232	0943410	63.2	1	17	0.5	0.1	0	58.1	0.3	0	38.3	2.3	0	0.1	0.2
Evansville Ck, Lower	355232	0943410	63.2	1	17	0.5	0.1	0	58.1	0.3	0	38.3	2.3	0	0.1	0.2
21700C1X2Z2	360748	0943412	627.7	5	7	0.9	6	0.1	26.5	0.2	0	59.5	5.5	0	0.9	0.5
07195500	360748	0943419	627.7	5	7	0.9	6	0.1	26.5	0.2	0	59.5	5.5	0	0.9	0.5
AT195500	360748	0943419	627.7	5	7	0.9	6	0.1	26.5	0.2	0	59.5	5.5	0	0.9	0.5
050345	361154	0943437	13.6	2	35	0.4	18.6	0.2	5.3	0.1	0	65.9	5.9	0	2.9	0.8
050005	361150	0943500	13.9	2	34	0.4	18.2	0.2	6.2	0.1	0	65.5	5.8	0	2.9	0.8
07195860	361150	0943500	13.9	2	34	0.4	18.2	0.2	6.2	0.1	0	65.5	5.8	0	2.9	0.8
AT189000	363753	0943512	850.0	5	6	0	1	0	51	1	1	39	5	0	0	0
050346	361207	0943521	14.5	2	33	0.4	17.4	0.1	7.6	0.1	0	65.3	5.6	0	2.7	0.7
07339005	340233	0943548	17.8	2	12	0.2	0	2.2	89.6	0	0.3	7.6	0	0	0	0.1
07338743	342915	0943601	9.9	2	26	0	0	16.1	78.3	0	0	5.6	0	0	0	0
SR9.1	361201	0943602	14.9	2	17	0.4	16.9	0.1	8.8	0.2	0	64.8	5.5	0	2.7	0.7

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics							Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)						
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands
07195853	361308	0943607	5.3	1	54	0.1	0	0	28.2	0.9	0	62.2	8.5	0	0	0.1
Fagan Ck	361308	0943607	5.3	1	54	0.1	0	0	28.2	0.9	0	62.2	8.5	0	0	0.1
SR1	360744	0943609	630.6	5	7	0.9	5.9	0.1	26.6	0.2	0	59.4	5.5	0	0.8	0.5
Illinois R at Paddle Trails	360744	0943609	630.6	5	7	0.9	5.9	0.1	26.6	0.2	0	59.4	5.5	0	0.8	0.5
050011	361258	0943615	57.8	3	26	1.6	2.5	0.2	20.6	0.4	0	65.7	8.2	0	0.5	0.3
07195855	361258	0943615	57.8	3	26	1.6	2.5	0.2	20.6	0.4	0	65.7	8.2	0	0.5	0.3
Flint Ck by Fagan Ck	361258	0943615	57.8	3	26	1.6	2.5	0.2	20.6	0.4	0	65.7	8.2	0	0.5	0.3
SR8	361259	0943615	57.8	3	26	1.6	2.5	0.2	20.6	0.4	0	65.7	8.2	0	0.5	0.3
07195865	361206	0943618	15.9	2	10	0.4	16	0.1	10	0.2	0	64.9	5.3	0	2.5	0.7
Sager Ck, Section 23	361206	0943618	15.9	2	10	0.4	16	0.1	10	0.2	0	64.9	5.3	0	2.5	0.7
AT195865	361206	0943618	15.9	2	10	0.4	16	0.1	10	0.2	0	64.9	5.3	0	2.5	0.7
07338860	342201	0943636	11.0	1	29	0	0	2.7	97.3	0	0	0	0	0	0	0
Big Hudson Ck	342201	0943636	11.0	1	29	0	0	2.7	97.3	0	0	0	0	0	0	0
07335700	343818	0943645	40.1	2	17	0	0	0.7	97.9	0	0	1.4	0	0	0	0
10300H1X2Z15	343818	0943645	40.1	2	17	0	0	0.7	97.9	0	0	1.4	0	0	0	0
AT335700	343818	0943645	40.1	2	17	0	0	0.7	97.9	0	0	1.4	0	0	0	0
07196961	355524	0943655	15.4	2	23	0.2	3.1	0	30.3	0.2	0	62	3.9	0	0.3	0.1
Shell Ck	355524	0943655	15.4	2	23	0.2	3.1	0	30.3	0.2	0	62	3.9	0	0.3	0.1
OKS0159	340203	0943702	805.9	5	15	2.9	0.2	3	84.8	0	0	8.7	0.1	0	0	0.1
07196958	355502	0943707	13.8	2	36	0.2	0.3	0	42.7	0.4	0	55	1.3	0	0.1	0.2
Peavine Ck, East	355502	0943707	13.8	2	36	0.2	0.3	0	42.7	0.4	0	55	1.3	0	0.1	0.2
050347	361226	0943713	19.1	2	28	0.3	13.7	0.1	14.1	0.2	0	64.1	4.8	0	2.1	0.6
07249850	353911	0943718	36.4	3	16	0.1	0.2	0.5	78.1	1	0	19.2	0.8	0	0	0.1
Jenkins Ck	353906	0943719	52.0	3	30	0.1	0.2	0.4	80.5	1	0	17.1	0.6	0	0	0.1
07249865	353910	0943721	15.3	2	34	0.1	0.1	0	86.3	1	0	12.2	0.3	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
SR9	361239	0943721	78.0	2	28	1.3	5.2	0.2	19.2	0.4	0	65.3	7.3	0	0.9	0.4	
07338865	342209	0943722	109.7	3	13	0.1	0.2	5.3	78.3	0	0	16.1	0.1	0	0	0	
Buffalo Ck, Lower	342209	0943722	109.7	3	13	0.1	0.2	5.3	78.3	0	0	16.1	0.1	0	0	0	
07191200	361950	0943727	126.8	3	11	0.2	0.8	0.1	37.8	0.6	0	51.3	9.1	0	0.1	0.1	
07247345	345035	0943728	197.6	3	24	0.2	0.1	1.6	92.5	0	0	5.6	0	0	0	0	
OKS0161	345035	0943731	197.6	3	24	0.2	0.1	1.6	92.5	0	0	5.6	0	0	0	0	
20100FIX1Z22	345129	0943742	522.9	4	<1	0.6	0.4	1.6	79.8	0	0	17.4	0.2	0	0	0	
AT247350	345129	0943742	522.9	4	<1	0.6	0.4	1.6	79.8	0	0	17.4	0.2	0	0	0	
07195885	361309	0943746	9.1	1	47	0.1	0	0.3	29.4	1.1	0	62.1	6.9	0	0.1	0.1	
Crazy Ck	361309	0943746	9.1	1	47	0.1	0	0.3	29.4	1.1	0	62.1	6.9	0	0.1	0.1	
10213Z5	340230	0943750	802.5	5	15	2.9	0.2	3.1	84.9	0	0	8.6	0.1	0	0	0.1	
AT339000	340230	0943750	802.5	5	15	2.9	0.2	3.1	84.9	0	0	8.6	0.1	0	0	0.1	
AT338750	342741	0943756	323.0	4	18	0	0	2	84	0	0	13	0	0	0	0	
OKS0158	340401	0943800	782.7	5	9	3	0.2	3.1	84.9	0	0	8.7	0.1	0	0	0	
OKS0078	342830	0943810	20.9	3	31	0	0.1	8.2	87.6	0	0	4.1	0	0	0	0	
07338740	342821	0943811	20.9	3	31	0	0.1	8.2	87.6	0	0	4.1	0	0	0	0	
Rock Ck, Section 13	342821	0943811	20.9	3	31	0	0.1	8.2	87.6	0	0	4.1	0	0	0	0	
07196964	355731	0943816	12.0	2	52	0.2	3.1	0	33.1	0.5	0	60.6	2.2	0	0.1	0.1	
Green Ck	355731	0943816	12.0	2	52	0.2	3.1	0	33.1	0.5	0	60.6	2.2	0	0.1	0.1	
07195550	360721	0943841	5.9	1	43	0.1	0	0	46.4	0.5	0	51.6	1.3	0	0	0	
Tate Parris Ck	360721	0943841	5.9	1	43	0.1	0	0	46.4	0.5	0	51.6	1.3	0	0	0	
07338815	342446	0943843	5.8	1	30	0	0	6.1	80.4	0	0	13.5	0	0	0	0	
07249413	350956	0943910	1,781.9	5	3	0.8	0.6	0.8	69.8	0	0	26.8	0.2	0	0	0.9	
07196967	355639	0943945	7.4	2	25	0	0	0	58.1	0.6	0	39.3	1.8	0	0	0	
England Ck	355639	0943945	7.4	2	25	0	0	0	58.1	0.6	0	39.3	1.8	0	0	0	
07338810	342703	0943948	93.4	4	7	0	0.2	2.4	94.1	0	0	3.3	0	0	0	0	
Big Eagle Ck, Lower	342703	0943948	93.4	4	7	0	0.2	2.4	94.1	0	0	3.3	0	0	0	0	

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
07191221	361920	0943951	16.9	2	30	0.1	0.3	0	30	0.5	0	62.2	6.8	0	0.1	0	
OKS0157	340802	0944001	768.2	5	4	3	0.2	3	84.8	0	0	8.8	0.1	0	0	0	
07195570	360838	0944030	2.4	1	63	0	0	0.1	70.1	0.2	0	29.3	0.3	0	0	0	
Rock Ck, Section 7	360838	0944030	2.4	1	63	0	0	0.1	70.1	0.2	0	29.3	0.3	0	0	0	
07188570	364636	0944045	20.5	2	22	0.1	0.2	0	17.6	0.6	8.6	63.9	9	0	0.1	0.1	
Peachtree Ck PB2 & PE2	355803	0944102	22.0	2	23	0.1	0.1	0	35.5	0.9	0	59.8	3.5	0	0	0.1	
07195930	361236	0944104	7.9	1	70	0.1	0	0	30.6	0.5	0	63.2	5.3	0	0	0.1	
Battle Ck	361236	0944104	7.9	1	70	0.1	0	0	30.6	0.5	0	63.2	5.3	0	0	0.1	
071912213	361923	0944106	163.0	3	6	0.2	0.6	0.1	37.2	0.5	0	52.3	8.8	0	0.1	0.1	
07197250	354908	0944109	1.5	1	40	0	0.2	0	47.2	0.2	0	49.4	3	0	0	0	
07338820	342348	0944113	444.9	5	11	0.2	0.2	2.2	86.2	0	0	11.1	0	0	0	0.1	
Mountain Fork R at The Narrows	342348	0944113	444.9	5	11	0.2	0.2	2.2	86.2	0	0	11.1	0	0	0	0.1	
07196970	355646	0944113	8.4	2	42	0.1	0	0	59.5	0.6	0	38.8	0.8	0	0	0	
Scrapper Ck	355646	0944113	8.4	2	42	0.1	0	0	59.5	0.6	0	38.8	0.8	0	0	0	
07338795	343223	0944114	3.5	1	90	0	0	0	99.6	0	0	0.4	0	0	0	0	
07188550	364605	0944130	45.0	3	19	0.1	0.1	0	28.8	0.8	5.2	58.4	6.6	0	0	0.1	
07187980	365901	0944130	32.6	2	23	0.3	1.4	0.8	48.4	1.6	1.2	38.6	5.7	0	1.6	0.5	
Fivemile Ck	365901	0944130	32.6	2	23	0.3	1.4	0.8	48.4	1.6	1.2	38.6	5.7	0	1.6	0.5	
07195950	361226	0944136	3.5	1	80	0.1	0.2	0	37.1	0.6	0	58.3	3.8	0	0	0	
Calunchety Ck	361226	0944136	3.5	1	80	0.1	0.2	0	37.1	0.6	0	58.3	3.8	0	0	0	
07195580	360912	0944137	5.3	1	93	0.2	0.9	0.3	48.3	0.5	0	44.4	5.1	0	0.3	0	
AT336820	334112	0944139	47,218.0	7	1	2	1	1	11	10	33	12	30	0	0	1	
07195600	360835	0944141	3.5	1	62	0	0	1.4	52	1.6	0	42.6	2.4	0	0	0.1	
Kill Ck	360835	0944141	3.5	1	62	0	0	1.4	52	1.6	0	42.6	2.4	0	0	0.1	
07196973	355717	0944146	23.9	2	53	0.1	0.1	0	39	1	0	56.5	3.2	0	0	0.1	

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
Peacheater Ck, PB1 & PE1, Sigma	355717	0944146	23.9	2	53	0.1	0.1	0	39	1	0	56.5	3.2	0	0	0	0.1
OKS0156	340903	0944201	760.4	5	26	3	0.2	3	84.7	0	0	8.9	0.1	0	0	0	0
07188520	364807	0944202	90.0	3	15	0.2	1.4	0.2	34.1	0.7	3.9	53.7	5.5	0	0.3	0.2	0.2
Lost Ck	364807	0944202	90.0	3	15	0.2	1.4	0.2	34.1	0.7	3.9	53.7	5.5	0	0.3	0.2	0.2
07338525	340146	0944222	6.8	2	14	0	0.3	4.1	83.2	0	0.7	9.1	0	0	0	0	2.5
07196000	361111	0944224	113.4	3	8	0.9	3.6	0.2	25.5	0.5	0	62	6.5	0	0.6	0.3	0.3
AT196000	361111	0944224	113.4	3	8	0.9	3.6	0.2	25.5	0.5	0	62	6.5	0	0.6	0.3	0.3
07188050	365407	0944225	24.2	2	46	0.1	0.5	0.1	47.1	1.1	2.9	41	7	0	0.1	0.2	0.2
Warren Branch Ck	365407	0944225	24.2	2	46	0.1	0.5	0.1	47.1	1.1	2.9	41	7	0	0.1	0.2	0.2
07197220	355037	0944226	4.2	1	41	0.2	0.7	0.7	72.3	1	0	24	1.1	0	0	0	0.1
Mulberry Ck	355037	0944226	4.2	1	41	0.2	0.7	0.7	72.3	1	0	24	1.1	0	0	0	0.1
07338792	343357	0944228	25.0	2	34	0	0.1	0.1	99.8	0	0	0	0	0	0	0	0
07338790	343357	0944229	15.6	2	70	0	0.4	0.1	99.1	0	0	0.4	0	0	0	0	0
Cucumber Ck	343357	0944229	15.6	2	70	0	0.4	0.1	99.1	0	0	0.4	0	0	0	0	0
07196030	361112	0944229	8.7	2	48	0.1	1.5	0.8	60.5	1.2	0	29.1	6.6	0	0.2	0.1	0.1
21703Z200	361154	0944230	109.7	3	5	1	3.8	0.2	24.3	0.5	0	62.8	6.6	0	0.7	0.3	0.3
07338530	335952	0944241	1.0	3	16	0.2	0.4	0.2	49.3	0	0.8	49.2	0	0	0	0	0
Yanubbee Ck	335952	0944241	1.0	3	16	0.2	0.4	0.2	49.3	0	0.8	49.2	0	0	0	0	0
20100B3X9Z201	345615	0944254	990.5	5	60	1.2	0.4	1.1	79.7	0	0	16.3	0.2	0	0	1.1	1.1
Beaty Ck at Betty M.	362215	0944300	45.0	3	13	0.1	0.2	0.1	20.1	0.5	0	66.2	12.8	0	0.1	0.1	0.1
SR8.5	361000	0944308	676.1	5	2	0.9	5.6	0.1	28.2	0.3	0	58.4	5.3	0	0.8	0.5	0.5
Illinois R, abv Flint Ck	361000	0944308	676.1	5	2	0.9	5.6	0.1	28.2	0.3	0	58.4	5.3	0	0.8	0.5	0.5
SR2	361025	0944313	124.5	3	9	0.9	3.4	0.3	28.7	0.5	0	58.9	6.5	0	0.6	0.3	0.3
Flint Ck at Illinois R	361025	0944313	124.5	3	9	0.9	3.4	0.3	28.7	0.5	0	58.9	6.5	0	0.6	0.3	0.3
07189545	363252	0944315	62.9	3	15	0.1	0.5	0	26.6	0.5	0.9	63.3	7.8	0	0.1	0.1	0.1

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)					
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands		
07196976	355710	0944325	5.1	1	53	0.5	0	0	0	74	1.3	0	23.2	1.1	0	0	0	0
SR2.5	361016	0944329	801.7	5	24	0.9	5.3	0.2	0	28.4	0.3	0	58.4	5.5	0	0	0.8	0.4
Illinois R, blw Flint Ck	361016	0944329	801.7	5	24	0.9	5.3	0.2	0	28.4	0.3	0	58.4	5.5	0	0	0.8	0.4
07196985	360141	0944330	25.6	2	38	0	0	0.2	0	34.8	2.1	0	59.2	3.5	0	0	0	0
Tyner Ck, Sigma, 01	360141	0944330	25.6	2	38	0	0	0.2	0	34.8	2.1	0	59.2	3.5	0	0	0	0
07196979	355747	0944341	4.4	1	36	0	0	0.9	0	86.8	2.8	0	9	0.6	0	0	0.1	0
07338830	342345	0944357	14.3	1	60	0	0	8.1	0	91.9	0	0	0	0	0	0	0	0
East Boktuklo Ck	342345	0944357	14.3	1	60	0	0	8.1	0	91.9	0	0	0	0	0	0	0	0
07338800	343102	0944409	25.0	3	23	0	0	6.8	0	89.8	0	0	3.5	0	0	0	0	0
Little Eagle Ck	343102	0944409	25.0	3	23	0	0	6.8	0	89.8	0	0	3.5	0	0	0	0	0
07338825	342322	0944412	13.0	1	58	0.1	0	8.6	0	91.3	0	0	0	0	0	0	0	0
07245430	353842	0944421	23.0	2	47	0.3	0.1	0.3	0.1	80.5	0.8	0	17.4	0.5	0	0	0	0.1
07338510	335058	0944422	11.5	1	13	0.1	11	0.1	0.1	24.1	0	5.7	50.3	7.3	0	0	0.4	1
Mud Ck, Section 24	335058	0944422	11.5	1	13	0.1	11	0.1	0.1	24.1	0	5.7	50.3	7.3	0	0	0.4	1
21611Z211	365604	0944445	2,503.5	5	1	0.9	3.1	0.5	0.5	16.2	0.3	2.9	58.9	14.5	0	0	0.5	2.4
AT188000	365604	0944445	2,503.5	5	1	0.9	3.1	0.5	0.5	16.2	0.3	2.9	58.9	14.5	0	0	0.5	2.4
Yashau Ck	340415	0944453	0.0	1	79	0	0	47.9	0	51.3	0	0	0.8	0	0	0	0	0
07338505	335949	0944454	24.6	2	17	0.3	2.5	3.2	0.8	72.6	0	0.8	18.9	0	0	0	0.1	1.5
07196982	355718	0944509	3.3	1	121	0	0	0	0	89.6	0.1	0	9.7	0.5	0	0	0	0
Proctor W Ck, South	355718	0944509	3.3	1	121	0	0	0	0	89.6	0.1	0	9.7	0.5	0	0	0	0
07197280	354939	0944518	6.7	1	33	0	0	0	0	63	0.2	0	36.1	0.7	0	0	0	0
Smith Ck	354939	0944518	6.7	1	33	0	0	0	0	63	0.2	0	36.1	0.7	0	0	0	0
10200110X11Z17	335628	0944530	1,229.8	5	<1	0.7	0.2	5	0.2	82.3	0	0.7	10.1	0.1	0	0	0	0.9
AT338500	335628	0944530	1,229.8	5	<1	0.7	0.2	5	0.2	82.3	0	0.7	10.1	0.1	0	0	0	0.9
07189550	363221	0944533	31.2	2	14	0.1	0.1	0.1	0.1	46.2	1.1	0	45.6	6.8	0	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)					
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands		
Whitewater Ck	363221	0944533	31.2	2	14	0.1	0.1	0.1	0.1	0.1	46.2	1.1	0	45.6	6.8	0	0	0
071912217	362040	0944542	200.4	3	7	0.2	0.6	0.4	0.4	40	0.7	0	49.9	8	0	0	0.1	0.1
07196080	360621	0944555	4.9	1	54	0	0	9.7	9.7	19.4	31.9	0	35.7	3.3	0	0	0	0
Luna Ck	360621	0944555	4.9	1	54	0	0	9.7	9.7	19.4	31.9	0	35.7	3.3	0	0	0	0
07338400	335805	0944557	45.5	2	9	0.1	0.3	4.4	4.4	72	0	0.6	22.5	0	0	0	0	0.1
Lukfata Ck	335805	0944557	45.5	2	9	0.1	0.3	4.4	4.4	72	0	0.6	22.5	0	0	0	0	0.1
07196988	355758	0944610	41.8	3	32	0	0	0.4	0.4	51.5	2.6	0	42.8	2.5	0	0	0	0.1
Tyner Ck, TB1 at HWY 62	355758	0944610	41.8	3	32	0	0	0.4	0.4	51.5	2.6	0	42.8	2.5	0	0	0	0.1
07196100	360547	0944624	7.8	2	78	0	0	3.7	3.7	53.4	23.6	0	17.4	1.9	0	0	0	0
Fall Ck, East	360547	0944624	7.8	2	78	0	0	3.7	3.7	53.4	23.6	0	17.4	1.9	0	0	0	0
07191222	362119	0944634	58.4	3	21	0.1	0.2	0.4	0.4	31.6	0.9	0	55.9	10.9	0	0	0.1	0.1
Beaty Ck at 1st Bridge	362119	0944634	58.4	3	21	0.1	0.2	0.4	0.4	31.6	0.9	0	55.9	10.9	0	0	0.1	0.1
Little Sallisaw Ck	352541	0944636	67.0	3	7	1.2	4.6	0.7	0.7	38.4	2.1	0	48.5	2.9	0	0	0.9	0.7
200DC2W6X2W7Z	352157	0944643	147,220.2	8	<1	1.1	1.1	0.4	0.4	10.7	5.9	48.7	10.1	21.3	0.3	0.1	0.1	0.5
SR3	360615	0944658	820.1	5	4	0.9	5.1	0.3	0.3	28.8	0.6	0	57.8	5.4	0	0	0.7	0.4
07197300	355042	0944728	14.8	3	47	0.2	0.2	0	0	30.5	0.4	0	66.8	1.9	0	0	0.1	0.1
Bidding Ck	355042	0944728	14.8	3	47	0.2	0.2	0	0	30.5	0.4	0	66.8	1.9	0	0	0.1	0.1
07338150	335724	0944730	5.9	1	11	0.6	0.2	0	0	42.2	0	3.9	49.2	0.1	0	0	0	3.9
07196130	360719	0944816	7.7	1	48	0.2	0.1	0.1	0.1	79.1	1.9	0	16.7	1.5	0	0	0.1	0.1
Black Fox Ck	360719	0944816	7.7	1	48	0.2	0.1	0.1	0.1	79.1	1.9	0	16.7	1.5	0	0	0.1	0.1
07196160	360720	0944822	8.7	1	64	0	0	0	0	64.9	3	0	27.5	4.5	0	0	0	0
07191270	362157	0944825	32.6	2	30	0	0.7	0	0	49.6	1.2	0	40.7	7.7	0	0	0.1	0
07245485	353313	0944830	17.1	2	19	0.6	0.3	0	0	62.9	1.8	0	31.7	2.2	0	0	0	0.3
AT185010	364755	0944909	6,120.0	5	2	2	1	0	0	4	2	34	28	27	0	0	0	2
07196180	360629	0944932	7.5	2	64	0.1	0.1	0	0	65.9	3.1	0	26.1	4.7	0	0	0	0.1

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)						
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands			
07245470	353449	0944935	123.6	3	10	0.8	0.3	0.6	71.4	1.3	0	24.2	1	0	0.1	0.3			
Sallisaw Ck	353449	0944935	123.6	3	10	0.8	0.3	0.6	71.4	1.3	0	24.2	1	0	0.1	0.3			
SR4	360545	0944941	858.8	5	3	0.8	4.9	0.3	30.4	0.9	0	56.3	5.3	0	0.7	0.4			
Illinois R at Round Hollow	360545	0944941	858.8	5	3	0.8	4.9	0.3	30.4	0.9	0	56.3	5.3	0	0.7	0.4			
07196200	360457	0944943	5.5	2	71	0.1	0	0	82	2.8	0	12.5	2.4	0	0	0.2			
07197330	354907	0944955	71.6	4	28	0.1	2.3	0.1	46.2	0.5	0	48.6	2	0	0.2	0.1			
Tailholt Ck	354907	0944955	71.6	4	28	0.1	2.3	0.1	46.2	0.5	0	48.6	2	0	0.2	0.1			
07337040	343301	0945003	12.8	2	45	0	0	0.1	99.9	0	0	0	0	0	0	0			
07191275	361902	0945008	20.3	2	21	0.1	0.3	0.1	71.6	0.9	0	24.5	2.6	0	0	0			
07197380	354341	0945014	7.8	1	84	0	0	0	95.6	1.4	0	2.9	0.1	0	0	0			
07197000	355516	0945018	312.3	4	10	0.4	0.5	0.1	51.3	0.7	0	44.4	2.4	0	0.1	0.2			
21707Z302	355516	0945018	312.3	4	10	0.4	0.5	0.1	51.3	0.7	0	44.4	2.4	0	0.1	0.2			
SR7	355516	0945018	312.3	4	10	0.4	0.5	0.1	51.3	0.7	0	44.4	2.4	0	0.1	0.2			
AT197000	355516	0945018	312.3	4	10	0.4	0.5	0.1	51.3	0.7	0	44.4	2.4	0	0.1	0.2			
07197020	355449	0945021	8.6	2	53	0	0.1	0	48.9	0.9	0	47.5	2.5	0	0.1	0			
Walltrip Ck	355449	0945021	8.6	2	53	0	0.1	0	48.9	0.9	0	47.5	2.5	0	0.1	0			
07197350	354734	0945032	6.7	1	46	0	0.1	0	61.7	0.3	0	37	0.9	0	0	0			
Negro Jake Ck	354734	0945032	6.7	1	46	0	0.1	0	61.7	0.3	0	37	0.9	0	0	0			
000110	365913	0945046	14.3	2	9	2	1	7.3	7.6	0	3.7	53	20.5	0	0.1	4.7			
07337785	342208	0945053	30.3	3	23	0	0.5	12.9	83.9	0	0	2.7	0	0	0	0			
East Fork of Glover R	342208	0945053	30.3	3	23	0	0.5	12.9	83.9	0	0	2.7	0	0	0	0			
07191280	362149	0945110	7.8	2	14	0	0	0	76.2	0.9	0	20.1	2.8	0	0	0			
07247800	345246	0945111	69.7	3	10	0	0.1	2.4	94.1	0	0	3.4	0	0	0	0			
07196230	360403	0945115	4.6	1	57	0	0	0	88.3	0.1	0	10.3	1.3	0	0	0			
07337810	341843	0945141	14.4	2	40	0	0.3	8.4	84.5	0	0	6.8	0	0	0	0			
OKS0163	345545	0945155	308.1	4	20	0.4	0.5	0.2	78.9	0	0	17.5	0.1	0	0	2.4			

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

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Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
07189800	362829	0945201	25.7	2	13	0	3.2	0.2	49.3	1.6	0	37.1	8.2	0	0.3	0.1	
Drowning Ck	362829	0945201	25.7	2	13	0	3.2	0.2	49.3	1.6	0	37.1	8.2	0	0.3	0.1	
07196470	355756	0945203	15.7	5	49	0.2	0	0	82.6	2	0	14.1	1	0	0.1	0.1	
07197070	355248	0945212	2.0	1	74	0	0	0	80.3	0.8	0	18.7	0.2	0	0	0.1	
Mining Camp Ck, North	355248	0945212	2.0	1	74	0	0	0	80.3	0.8	0	18.7	0.2	0	0	0.1	
07337045	343155	0945215	7.7	1	76	0	0	6.3	92.9	0	0	0.8	0	0	0	0	
Rock Ck	343155	0945215	7.7	1	76	0	0	6.3	92.9	0	0	0.8	0	0	0	0	
07337787	342228	0945221	21.3	2	22	0	0	12.3	83.5	0	0	4.1	0	0	0	0	
07196440	355909	0945237	3.7	1	112	0.1	0	0	91.4	0.1	0	7.6	0.7	0	0.1	0	
07196260	360405	0945256	5.3	1	134	0.5	0	0	59.1	0.9	0	34.9	4.6	0	0	0.1	
07337890	340743	0945305	7.6	2	25	0	0	10	86.6	0	0	3.4	0	0	0	0	
07196410	355954	0945351	2.8	1	51	0	0	0	99.4	0	0	0.5	0	0	0	0	
Cedar Hollow Ck	355954	0945351	2.8	1	51	0	0	0	99.4	0	0	0.5	0	0	0	0	
07197100	354843	0945356	2.4	1	81	0	0.1	0	77.4	1.8	0	19.1	1.3	0	0.4	0	
07196300	360217	0945356	2.2	1	113	0	0	0	98.6	0.1	0	1	0.4	0	0	0	
Telemay Hollow	360217	0945356	2.2	1	113	0	0	0	98.6	0.1	0	1	0.4	0	0	0	
10209Z12	340551	0945407	322.3	4	3	0.2	0.1	8.6	86.4	0	0	4.7	0	0	0	0	
AT337900	340551	0945407	322.3	4	3	0.2	0.1	8.6	86.4	0	0	4.7	0	0	0	0	
07197400	354345	0945414	14.2	2	31	0.1	0	0	80.3	0.7	0	18.3	0.6	0	0	0	
07337860	341034	0945431	20.9	2	33	0	0.2	0.5	99.2	0	0	0.1	0	0	0	0	
Cedar Ck	341034	0945431	20.9	2	33	0	0.2	0.5	99.2	0	0	0.1	0	0	0	0	
SR4.8	355757	0945435	906.5	5	1	0.8	4.7	0.3	32.4	0.9	0	54.7	5.1	0	0.7	0.4	
Illinois R at No Head Hollow	355757	0945435	906.5	5	1	0.8	4.7	0.3	32.4	0.9	0	54.7	5.1	0	0.7	0.4	
07337830	341450	0945438	29.4	2	27	0	0.2	10.7	87.6	0	0	1.5	0	0	0	0	
SR5	355634	0945442	1.3	5	104	0.3	0.1	0	94.4	0.1	0	4.8	0.3	0	0	0	
Illinois R at Echota	355634	0945442	1.3	5	104	0.3	0.1	0	94.4	0.1	0	4.8	0.3	0	0	0	

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)									
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands						
SR7.5	355102	0945444	346.5	4	6	0.4	0.5	0.1	51.4	0.8	0	44.3	2.3	0	0.1	0.2						
Baron Fork at Illinois R	355102	0945444	346.5	4	6	0.4	0.5	0.1	51.4	0.8	0	44.3	2.3	0	0.1	0.2						
07337870	341008	0945446	295.0	4	5	0.1	0.1	9	86.3	0	0	4.5	0	0	0	0						
Glover R, Lower	341008	0945446	295.0	4	5	0.1	0.1	9	86.3	0	0	4.5	0	0	0	0						
07337940	340201	0945449	11.6	1	5	0	0.4	2.7	63.1	0	1.8	32	0	0	0	0						
SR6.4	355105	0945452	975.2	5	3	0.9	4.8	0.3	34.3	0.9	0	52.9	4.9	0	0.7	0.5						
Illinois R at Baron Fork	355105	0945452	975.2	5	3	0.9	4.8	0.3	34.3	0.9	0	52.9	4.9	0	0.7	0.5						
21700DA6X7Z301	355517	0945515	949.2	5	7	0.9	4.5	0.3	34.3	0.9	0	53.1	4.9	0	0.7	0.4						
07196500	355522	0945524	949.2	5	7	0.9	4.5	0.3	34.3	0.9	0	53.1	4.9	0	0.7	0.4						
AT196500	355522	0945524	949.2	5	7	0.9	4.5	0.3	34.3	0.9	0	53.1	4.9	0	0.7	0.4						
07196380	355837	0945524	4.1	1	80	0.2	0	0	62.1	1.3	0	34.2	2.1	0	0	0.1						
Steely Hollow	355837	0945524	4.1	1	80	0.2	0	0	62.1	1.3	0	34.2	2.1	0	0	0.1						
07197150	355006	0945527	4.5	1	48	0.4	1.4	0	52.3	0.6	0	44.6	0.6	0	0.1	0.1						
SR6	355255	0945533	0.3	1	171	0	1.4	0	59.9	1.2	0	36.7	0.5	0	0	0.2						
07197440	354036	0945536	8.1	1	46	0.1	0	0	84.2	0.5	0	14.4	0.9	0	0	0						
07337050	343140	0945541	6.2	1	89	0	0	0	99.9	0	0	0.1	0	0	0	0						
SR5.5	355454	0945547	950.6	5	7	0.9	4.5	0.3	34.3	0.9	0	53.1	4.9	0	0.7	0.4						
Illinois R at Tahl-equah	355454	0945547	950.6	5	7	0.9	4.5	0.3	34.3	0.9	0	53.1	4.9	0	0.7	0.4						
07197130	355040	0945554	14.6	2	8	0.6	5.2	0.4	18.4	0.2	0	69.2	4.7	0	0.4	0.8						
Park Hill Ck	355040	0945554	14.6	2	8	0.6	5.2	0.4	18.4	0.2	0	69.2	4.7	0	0.4	0.8						
07337055	343210	0945555	43.0	2	30	0	0	0.1	99.8	0	0	0.1	0	0	0	0						
Honobia Ck	343210	0945555	43.0	2	30	0	0	0.1	99.8	0	0	0.1	0	0	0	0						
07337705	342827	0945603	11.0	2	52	0	0	12.4	87.5	0	0	0.1	0	0	0	0						
East Ck	342827	0945603	11.0	2	52	0	0	12.4	87.5	0	0	0.1	0	0	0	0						
07337800	341831	0945609	180.1	4	15	0	0.1	10.2	83.4	0	0	6.2	0	0	0	0						

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)					
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands		
07337740	342338	0945630	45.1	3	19	0	0	0	9.6	86.6	0	0	3.8	0	0	0	0	0
West Fork of Glover R, Section 7	342338	0945630	45.1	3	19	0	0	0	9.6	86.6	0	0	3.8	0	0	0	0	0
07337780	341933	0945640	7.3	1	81	0	0	0	3.9	96.1	0	0	0	0	0	0	0	0
07247650	345511	0945643	265.9	4	12	0.4	0.6	0.2	0.2	79.2	0	0	17.9	0.2	0	0	0	1.5
21600H3X4Z10	365543	0945726	5,927.1	5	5	1.9	0.8	0.1	0.1	4	2.3	35.2	26.7	26.8	0	0.2	2.1	2.1
AT185000	365543	0945726	5,927.1	5	5	1.9	0.8	0.1	0.1	4	2.3	35.2	26.7	26.8	0	0.2	2.1	2.1
07337760	342312	0945734	37.2	3	15	0	0	0	9.5	76.4	0	0	14.1	0	0	0	0	0
Silver Ck	342312	0945734	37.2	3	15	0	0	0	9.5	76.4	0	0	14.1	0	0	0	0	0
07197450	353815	0945738	3.2	1	80	0.4	0.1	0	0	95.7	1.3	0	2.3	0.2	0	0	0	0
07337700	342811	0945743	10.4	2	65	0	0	0	0	100	0	0	0	0	0	0	0	0
Upper West Fork Glover R, Section 14	342811	0945743	10.4	2	65	0	0	0	0	100	0	0	0	0	0	0	0	0
07197455	353658	0945747	1.3	1	98	3.4	2.7	0	0	79.4	1.2	0	11	1.9	0	0	0	0.5
Cato Ck	353658	0945747	1.3	1	98	3.4	2.7	0	0	79.4	1.2	0	11	1.9	0	0	0	0.5
07191320	361854	0945755	45.9	2	20	0.1	0.3	1	0	59.5	2.9	0	31.5	4.8	0	0	0	0
07197420	354534	0945759	4.3	2	16	0.3	0.1	0	0	57.9	0.7	0	39.4	1.5	0	0	0	0.2
07196504	355351	0945813	6.0	1	22	0.2	42.7	0	0	21.5	0.4	0	25.4	3.5	0	4.1	2.2	2.2
Tahlequah Ck, Town Branch	355351	0945813	6.0	1	22	0.2	42.7	0	0	21.5	0.4	0	25.4	3.5	0	4.1	2.2	2.2
07245090	353214	0945815	20.2	2	24	0.3	0.1	0	0	84.1	0.9	0	13.6	1	0	0	0	0.1
Lower Vian Ck, Section 3	353214	0945815	20.2	2	24	0.3	0.1	0	0	84.1	0.9	0	13.6	1	0	0	0	0.1
07196508	355348	0945827	7.5	1	57	0.5	13.4	0	0	19	0.3	0	61.3	2.8	0	2.2	0.4	0.4
Ross Branch Tahlequah Ck	355348	0945827	7.5	1	57	0.5	13.4	0	0	19	0.3	0	61.3	2.8	0	2.2	0.4	0.4
07337630	340346	0945917	12.7	1	14	0	0.2	9.5	0	80.5	0	0.5	9.3	0	0	0	0	0
Horsehead Ck	340346	0945917	12.7	1	14	0	0.2	9.5	0	80.5	0	0.5	9.3	0	0	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
07197430	354328	0945930	3.4	1	50	0.2	0	0.4	63.8	2.2	0	32.9	0.6	0	0	0.1	
Sisemore Ck	354328	0945930	3.4	1	50	0.2	0	0.4	63.8	2.2	0	32.9	0.6	0	0	0.1	
07190025	362830	0950013	23.4	2	19	0	0.1	50	1.7	0	44.4	3.6	0	0	0	0	
07197490	353637	0950103	2.5	1	73	0.4	0	55.5	0.3	0	42.1	0.9	0	0	0.2	0.2	
07337540	340411	0950109	39.9	2	15	0	0.3	7	86	0	6.3	0	0	0	0	0.2	
Cypress Ck	340411	0950109	39.9	2	15	0	0.3	7	86	0	6.3	0	0	0	0	0.2	
07197465	354113	0950111	2.2	1	21	0.3	0	70.9	1.9	0	26.7	0.2	0	0	0	0.1	
07337165	341627	0950115	15.3	2	16	0	0	13.5	86	0	0.5	0	0	0	0	0	
Red Oak Ck Down-stream	345624	0950132	17.0	2	16	0	1.8	0	66.8	0	31.2	0.2	0	0	0	0	
Red Oak Ck Upstream	345622	0950158	14.0	2	16	0	2.3	0	63.8	0	33.6	0.2	0	0	0	0	
Bache & Denman #2 AMD Midway	345600	0950203	2.0	1	23	0	0	0	84.1	0	15.8	0	0	0	0	0	
Bache & Denman #2 Seep	345559	0950204	2.0	1	23	0	0	0	84	0	15.9	0	0	0	0	0	
Bache & Denman #2 AMD at Oak Ridge	345603	0950204	2.0	1	23	0	0	0	84.1	0	15.8	0	0	0	0	0	
Oak Ridge Ck 500' abv Seep	345601	0950208	2.0	1	23	0	0	0	84.1	0	15.9	0	0	0	0	0	
07337167	341736	0950234	5.5	1	63	0	0	7.4	92.6	0	0	0	0	0	0	0	
Oak Ridge Ck Upstream	345554	0950244	2.0	1	23	0	0	0	86.3	0	13.7	0	0	0	0	0	
21600D16X18Z214	362615	0950244	10,375.6	6	2	2	1.6	0.3	13.3	1.5	21	38	20.2	0	0.3	1.9	
07197475	353847	0950249	2.2	1	58	0	0	0	98.7	1	0	0.2	0.1	0	0	0	
07337510	340304	0950307	10.7	2	11	0.1	0.6	0	57.5	0	4.7	37	0.1	0	0	0	
White Oak Ck	340304	0950307	10.7	2	11	0.1	0.6	0	57.5	0	4.7	37	0.1	0	0	0	
AT190500	362637	0950319	10,371.0	6	1	2	2	0	13	2	21	38	20	0	0	2	

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

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Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)						
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07337060	343106	0950328	16.8	2	25	0	0	0.1	99.9	0	0	0	0	0	0	0	0	0	0
07198000	353423	0950407	1,614.0	5	5	1.9	3.3	0.2	42.4	0.8	0	46.8	3.7	0	0.4	0	0	0.4	0.4
Little Saline Ck nr. Low Water Crossing	361646	0950414	23.0	2	30	0	0.3	0.5	44.3	6.4	0	42.4	6	0	0	0	0	0	0
07191335	361645	0950437	24.3	2	39	0	0.3	0.5	45	6.2	0	42.2	5.8	0	0	0	0	0	0
07337170	341743	0950445	16.5	2	89	0	0	6.2	93.7	0	0	0.1	0	0	0	0	0	0	0
07337175	341524	0950522	49.4	3	29	0	0	7.1	92.2	0	0	0.7	0	0	0	0	0	0	0
Terrapin Ck, Section 34	341524	0950522	49.4	3	29	0	0	7.1	92.2	0	0	0.7	0	0	0	0	0	0	0
21700A6X10Z204	353100	0950528	1,641.3	5	8	1.9	3.2	0.2	42.8	0.8	0	46.5	3.7	0	0.4	0	0	0.4	0.4
Saline Ck	361654	0950533	106.0	3	13	0	0.3	0.8	57.7	3.7	0	33	4.4	0	0	0	0	0	0
20427Z5	353056	0950726	96,804.2	7	1	1	1.2	0.4	9.2	4.1	47.5	11.7	23.8	0.3	0.2	0.7	0	0.7	0.7
Mountain Fork of San Bois Ck	350433	0950819	43.0	3	30	0	0	0.6	98.8	0	0	0.5	0	0	0	0	0	0	0
07337290	340646	0950821	13.5	2	32	0.3	0	0.7	84.5	0	1.7	10.9	0	0	0	0	0	2	2
AT191050	362711	0950842	514.0	4	3	1	1	0	9	0	12	60	15	0	0	0	0	1	1
07337110	341940	0950851	18.4	2	70	0	0	19	80.5	0	0	0.5	0	0	0	0	0	0	0
Holly Ck	341940	0950851	18.4	2	70	0	0	19	80.5	0	0	0.5	0	0	0	0	0	0	0
07337080	342441	0950857	12.6	2	28	0	0	4.5	95.4	0	0	0.1	0	0	0	0	0	0	0
Pickens Ck	342441	0950857	12.6	2	28	0	0	4.5	95.4	0	0	0.1	0	0	0	0	0	0	0
AT191000	363406	0950906	461.0	4	4	1	1	0	7	0	14	60	16	0	0	0	0	1	1
Bull Ck	363643	0950916	15.0	2	7	1.3	10.5	0	2.1	0.1	0	58.3	25.1	0	1.5	1	1	1	1
07247500	345445	0950920	120.3	3	3	0.6	1	0.4	77.4	0	0	19.7	0.2	0	0	0	0	0.6	0.6
Fourche Maline Ck at Red Oak, Center-point	345445	0950920	120.3	3	3	0.6	1	0.4	77.4	0	0	19.7	0.2	0	0	0	0	0.6	0.6
AT247550	345445	0950920	120.3	3	3	0.6	1	0.4	77.4	0	0	19.7	0.2	0	0	0	0	0.6	0.6
07337075	342709	0951003	21.5	2	15	0	0	0.8	97.8	0	0	1.4	0	0	0	0	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics							Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)							
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
Watson Ck	342709	0951003	21.5	2	15	0	0	0.8	97.8	0	0	1.4	0	0	0	0	0
07337180	341109	0951034	17.3	2	20	0.1	0.4	1.2	72	0	4.3	22	0	0	0	0	0
07337130	341615	0951051	14.7	2	56	0	0	7.2	83.9	0	0.5	8.4	0	0	0	0	0
Caney Ck, Section 26	341615	0951051	14.7	2	56	0	0	7.2	83.9	0	0.5	8.4	0	0	0	0	0
21600E22X23Z215	361345	0951059	11,574.5	6	3	2.1	1.5	0.3	14.9	1.5	19.4	39.2	19.3	0	0.3	1.7	1.7
07337085	342245	0951120	8.4	2	13	0	0	9.9	90.1	0	0	0.1	0	0	0	0	0
AT191558	360751	0951124	162.0	4	16	0	1	0	54	2	0	37	5	0	0	0	0
07337077	342608	0951133	16.0	3	21	0	0	1.8	93.7	0	0.2	4.3	0	0	0	0	0
07337065	342856	0951152	5.1	1	66	0	0	0	96.5	0	0	3.5	0	0	0	0	0
10200B4X5Z2	341932	0951158	384.8	4	8	0.2	0.1	3.1	93.5	0	0	3.1	0	0	0	0	0
AT337100	341932	0951158	384.8	4	8	0.2	0.1	3.1	93.5	0	0	3.1	0	0	0	0	0
07193500	355110	0951344	4,211.9	6	16	3.4	1.4	0.4	34.2	1	3.1	46.9	8.9	0	0.2	0.6	0.6
07245000	351550	0951421	24,414.2	7	1	1.6	1.5	0.2	14.1	3.9	42.7	7.8	27.7	0.3	0	0.3	0.3
AT245000	351550	0951421	24,414.2	7	1	1.6	1.5	0.2	14.1	3.9	42.7	7.8	27.7	0.3	0	0.3	0.3
07337073	342924	0951428	7.1	1	56	0	0	0	100	0	0	0	0	0	0	0	0
OKN0009	361500	0951500	263.7	3	8	0.9	2.3	0.3	17.2	0.6	11.6	60.5	5.9	0	0.1	0.6	0.6
21624Z40	361455	0951530	263.7	3	8	0.9	2.3	0.3	17.2	0.6	11.6	60.5	5.9	0	0.1	0.6	0.6
AT191560	361455	0951530	263.7	3	8	0.9	2.3	0.3	17.2	0.6	11.6	60.5	5.9	0	0.1	0.6	0.6
07337070	342925	0951540	44.3	3	24	0	0	3	96.7	0	0	0.3	0	0	0	0	0
07337095	341843	0951623	48.2	3	13	0	0	6.2	92.5	0	0.1	1.2	0	0	0	0	0
21600G22X23Z217	361051	0951625	11,884.4	6	4	2	1.5	0.3	15	1.5	19.1	39.7	18.9	0	0.3	1.7	1.7
AT191530	361051	0951625	11,884.4	6	4	2	1.5	0.3	15	1.5	19.1	39.7	18.9	0	0.3	1.7	1.7
AT335780	343644	0951638	405.0	4	12	0	0	0	86	0	0	12	0	0	0	1	1
RS336710	335809	0951641	1,756.0	5	12	3	1	1	73	0	4	18	0	0	0	1	1
200C4W21X4W22 Z6	354610	0951755	96,421.5	7	3	1	1.2	0.4	9.1	4.1	47.7	11.6	23.9	0.3	0.1	0.7	0.7
AT194500	354610	0951755	96,421.5	7	3	1	1.2	0.4	9.1	4.1	47.7	11.6	23.9	0.3	0.1	0.7	0.7

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics							Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)						
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands
21532Z43	355045	0951910	2.4	1	59	1.5	5.4	0	20	0.1	0	66.9	4.5	0	0.9	0.7
07337090	341650	0951923	22.7	2	12	0	0	4.1	95.5	0	0	0.4	0	0	0	0
RS335790	343617	0952004	273.0	4	<1	8	0	1	77	0	2	11	0	0	0	0
10300K12X13Z18	340030	0952300	1,702.9	5	<1	2.7	0.6	0.7	74.1	0.1	4.2	16.6	0.2	0	0	0.9
Beaver Ck	345429	0952613	15.0	2	10	0.1	0.1	0	77.8	0	0	21.7	0.1	0	0	0.2
Lightning Ck	363906	0952803	36.0	3	7	1	0.3	0.4	6.7	0.2	31.7	44.8	0.3	0	0	14.4
RS336500	341200	0952910	1,418.0	5	4	2	0	1	79	0	3	14	0	0	0	0
AT178900	355719	0952941	8,106.0	6	1	2	2	0	15	3	42	26	7	0	0	2
AT178600	369.42	0952946	2.0	1	35	1	1	0	38	1	25	29	3	0	0	1
100AF4WBZ26	335232	0953008	44,282.7	7	1	1.7	0.8	0.5	7.9	11	35	10.8	31.8	0.2	0	0.3
AT335500	335232	0953008	44,282.7	7	1	1.7	0.8	0.5	7.9	11	35	10.8	31.8	0.2	0	0.3
07178483	362337	0953025	8.2	2	20	0.1	0.1	0	64.1	0.8	16.3	18.2	0.4	0	0	0.1
Little Dog Ck	362337	0953025	8.2	2	20	0.1	0.1	0	64.1	0.8	16.3	18.2	0.4	0	0	0.1
07178480	362339	0953125	19.2	2	7	0.7	2.2	0	41.1	0.9	17.4	37.4	0.1	0	0.1	0.3
Dog Ck nr. Sequoyah	362339	0953125	19.2	2	7	0.7	2.2	0	41.1	0.9	17.4	37.4	0.1	0	0.1	0.3
AT171100	364156	0953333	3,933.0	6	3	1	1	0	8	3	43	30	12	0	0	2
07178490	361917	0953443	58.7	3	14	2.6	1.7	0	42.9	0.9	17.1	34	0.2	0	0	0.5
21500A4X5Z207	365105	0953506	3,580.4	6	1	1.5	0.7	0.1	7.9	3.4	42.6	29.2	12.5	0	0.1	1.9
AT171000	365105	0953506	3,580.4	6	1	1.5	0.7	0.1	7.9	3.4	42.6	29.2	12.5	0	0.1	1.9
Brushy Ck	345035	0953509	19.0	2	10	0.6	1.5	0.1	55.9	0	13.4	28.1	0.3	0	0	0
AT231600	345215	0953516	313.0	4	1	1	2	0	39	0	27	30	1	0	0	0
206805Z30	345130	0953530	20.4	2	22	0.6	2	0.1	54.7	0	13.5	28.7	0.3	0	0	0
Pine Ck	342426	0953551	70.0	3	43	0	0	2.8	96.9	0	0	0.2	0	0	0	0
10300C8X9Z3	341455	0953618	1,128.5	5	2	2.1	0.3	0.8	80.8	0	2.4	13.1	0.2	0	0	0.3
AT336200	341455	0953618	1,128.5	5	2	2.1	0.3	0.8	80.8	0	2.4	13.1	0.2	0	0	0.3
07335360	335712	0953619	15.8	2	11	0.5	0.1	0	46.2	1.7	5	46.5	0.1	0	0	0
21524Z19	360955	0953700	7,827.6	6	2	2.3	1.9	0.3	14.8	2.9	43.5	25.6	7.1	0	0.1	1.5

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)						
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands			
07178620	360943	0953707	7,834.5	6	2	2.3	1.9	0.3	14.8	2.9	43.5	25.5	7.1	0	0.1	1.5			
200L4W14X4W16Z7	354923	0953839	75,251.0	7	3	0.6	1	0.4	7.1	4.7	53.4	5.1	26.7	0.4	0.1	0.4			
21500U16X17Z39	362517	0954101	4,268.0	6	<1	2.5	0.7	0.1	8.4	3	41.6	30.5	11	0	0.1	2			
21500H19X22Z22	361826	0954152	6,455.6	6	<1	2.3	0.9	0.2	11.5	3.3	43.9	27.6	8.5	0	0.1	1.8			
AT176000	361826	0954152	6,455.6	6	<1	2.3	0.9	0.2	11.5	3.3	43.9	27.6	8.5	0	0.1	1.8			
07335290	340410	0954421	9.8	2	13	0.3	0	0	41.2	0.9	2.5	55	0	0	0	0			
Sugar Ck nr. Soper	340410	0954421	9.8	2	13	0.3	0	0	41.2	0.9	2.5	55	0	0	0	0			
AT335300	340130	0954504	2,267.0	5	<1	2	1	0	42	1	21	31	1	0	0	2			
07335270	340411	0954530	11.6	2	20	1.3	0	0	40.1	1.5	1.7	54.6	0	0	0	0.8			
21300B16X17Z1	361214	0954541	1,135.2	4	2	2.7	6.6	0.9	30.1	0.7	47.5	10.8	0.6	0	0.1	0.1			
07334090	340739	0954624	6.6	1	21	0.7	0	0	52.7	1.1	0.3	44.9	0	0	0	0.3			
07335315	335713	0954655	42.8	3	7	0.8	0.7	0	26.1	0.8	5.6	60.3	1.1	0	0	4.5			
07334070	340838	0954900	18.6	2	7	0.5	0	0	69.2	1.2	0.8	27.7	0	0	0	0.5			
07178200	361323	0954909	1,123.5	4	<1	2.7	6.6	0.9	30	0.7	47.9	10.5	0.6	0	0.1	0.1			
AT178050	361323	0954909	1,123.5	4	<1	2.7	6.6	0.9	30	0.7	47.9	10.5	0.6	0	0.1	0.1			
07333785	343024	0954950	67.6	3	5	0.1	0.1	0	55.2	0	16	28.6	0.2	0	0	0			
McGee Ck	343024	0954950	67.6	3	5	0.1	0.1	0	55.2	0	16	28.6	0.2	0	0	0			
21300C14X15Z2	361351	0954955	1,121.8	4	<1	2.7	6.6	0.9	30	0.7	47.9	10.5	0.6	0	0.1	0.1			
07175500	363032	0955030	1,953.2	5	<1	1.7	1	0.4	17.6	4.5	50.3	19.1	4.1	0	0.1	1.4			
AT175500	363032	0955030	1,953.2	5	<1	1.7	1	0.4	17.6	4.5	50.3	19.1	4.1	0	0.1	1.4			
21400DA16X17Z30	363031	0955036	1,952.9	5	<1	1.7	1	0.4	17.6	4.5	50.3	19.1	4.1	0	0.1	1.4			
07178050	361421	0955052	1,101.2	4	<1	2.7	6.3	0.9	30.3	0.7	48.6	9.6	0.6	0	0.1	0.1			
07332640	335252	0955104	64.0	2	7	0.8	0.1	0	32.4	1	8	52.3	2	0	0	3.4			
07334040	341345	0955116	20.2	3	17	0.4	0.3	0	34	1.1	14.8	49.1	0.3	0	0	0			
07178040	361314	0955130	58.4	3	13	0.8	60.4	0.4	7.7	0.3	8.4	20.8	0.6	0	0.4	0.1			
07231979	345023	0955150	0.3	1	95	3.5	5.3	0	73.6	0.3	6.3	11.1	0	0	0	0			

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
07178000	361455	0955206	1,022.6	4	2	2.8	3.1	1	31.9	0.8	51.6	8.2	0.6	0	0	0.1	0.1
07332635	335457	0955308	55.7	2	58	0.9	0.1	0	32.4	1	8.6	52.5	1.9	0	0	0	2.6
Lower Whitegrass Ck, Section 25	335457	0955308	55.7	2	58	0.9	0.1	0	32.4	1	8.6	52.5	1.9	0	0	0	2.6
AT165520	355721	0955310	74,888.0	7	2	1	1	0	7	5	54	5	27	0	0	0	0
20678Z22	350900	0955350	27,882.8	7	8	0.6	0.5	0.4	11.1	15	61.4	2.4	8.6	0.1	0	0	0.1
AT231700	350846	0955401	27,874.0	7	7	1	0	0	11	15	61	2	9	0	0	0	0
10400H7X9Z19	341617	0955443	1,091.4	5	12	2.2	0.7	0.1	47.6	0.9	22.8	25.4	0.4	0	0	0	0
AT334000	341617	0955443	1,091.4	5	12	2.2	0.7	0.1	47.6	0.9	22.8	25.4	0.4	0	0	0	0
07332630	335713	0955633	30.0	2	12	1.1	0.2	0	33.8	1.1	10.3	50.5	1.4	0	0	0	1.6
07177600	361457	0955635	968.3	1	7	2.8	1.1	1	32.3	0.7	53.7	7.8	0.6	0	0	0	0.1
07177700	361332	0955640	23.0	3	4	0.5	45.3	0.1	25.8	0.7	12.1	14.3	0.5	0	0.8	0	0
205100Z45	351900	0955705	14,925.4	6	1	0.5	1.3	0.2	3.9	3.8	48.2	4.1	37.5	0.4	0	0	0.1
07177500	361642	0955714	911.1	4	<1	2.9	0.9	1.1	30.9	0.7	55.8	7.1	0.6	0	0	0	0.1
21300DB10X12Z30	361642	0955714	911.1	4	2	2.9	0.9	1.1	30.9	0.7	55.8	7.1	0.6	0	0	0	0.1
AT242200	351858	0955717	14,916.0	6	3	1	1	0	4	4	48	4	37	0	0	0	0
07332995	343735	0955736	20.4	2	11	1.8	0.5	0	39.6	0.3	33.9	23.4	0.6	0	0	0	0
21408Z301	365342	0955809	504.7	5	2	2.6	0.6	0.2	16.9	5.9	38.6	25.7	7.5	0	0.1	0.1	2.1
07332625	335932	0955925	14.2	2	15	0.6	0.1	0.1	33.3	1.5	8.6	54.6	1.3	0	0	0	0
Whitegrass Ck nr. Bennington, AR	335932	0955925	14.2	2	15	0.6	0.1	0.1	33.3	1.5	8.6	54.6	1.3	0	0	0	0
07332980	343931	0955949	54.4	3	8	0.5	1.2	0	50.8	0.5	25.3	21.5	0.2	0	0	0	0
North Boggy Ck, Section 12, HWY 131	343931	0955949	54.4	3	8	0.5	1.2	0	50.8	0.5	25.3	21.5	0.2	0	0	0	0
07335210	341034	0960020	21.8	2	15	0.7	0	0	34.1	1.6	11.9	51.6	0.1	0	0	0	0
07164500	360826	0960022	74,414.9	7	2	0.6	0.9	0.4	6.8	4.7	53.8	4.9	26.9	0.4	0.1	0.1	0.4
07332990	343628	0960101	80.2	3	2	0.4	1.8	0	46.2	0.5	28.9	21.8	0.4	0	0.1	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics					Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)									
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
07333520	342645	0960114	7.9	2	19	0	0	0	0	78.5	0	5.5	15.9	0.1	0	0	0
07333505	342651	0960157	34.8	3	6	0.1	0.4	0.1	55.9	0	23.9	19.2	0.4	0	0	0	0
Chickasaw Ck	342651	0960157	34.8	3	6	0.1	0.4	0.1	55.9	0	23.9	19.2	0.4	0	0	0	0
07332530	335648	0960257	24.9	2	11	0.6	1	0.1	30.3	1.1	8.1	57.1	1.8	0	0	0	0
07335150	341110	0960330	30.1	2	3	1	0.2	0	34.1	1.4	15.2	47.8	0.2	0	0	0	0.2
Caney Ck, Section 21	341110	0960330	30.1	2	3	1	0.2	0	34.1	1.4	15.2	47.8	0.2	0	0	0	0.2
21300A6X8Z202	362911	0960345	369.1	4	5	1.7	1.1	0.4	28.4	0.9	63.8	3.2	0.5	0	0	0	0.1
07243500	354026	0960406	2,006.6	5	9	1.6	2.8	0.4	34.5	0.4	41.9	13.1	5	0	0.1	0.2	0.2
AT243500	354026	0960406	2,006.6	5	9	1.6	2.8	0.4	34.5	0.4	41.9	13.1	5	0	0.1	0.2	0.2
20700C33X35Z48	354015	0960408	2,006.6	5	9	1.6	2.8	0.4	34.5	0.4	41.9	13.1	5	0	0.1	0.2	0.2
21400H5X7Z15	365506	0960415	722.3	4	13	1.4	0.1	0.3	10.9	6.2	61.6	13.9	3.7	0	0.1	1.8	1.8
Buck Ck	364439	0960440	35.0	2	7	0.7	0	2.4	41.3	2.7	41.7	9.5	0.5	0	0	1.1	1.1
07164400	360648	0960649	74,377.0	7	<1	0.6	0.9	0.4	6.7	4.7	53.9	4.9	26.9	0.4	0.1	0.4	0.4
AT164400	360648	0960649	74,377.0	7	<1	0.6	0.9	0.4	6.7	4.7	53.9	4.9	26.9	0.4	0.1	0.4	0.4
07332520	340049	0960722	24.1	2	3	0.8	0.6	0	26.4	0.8	8.9	58.7	3.8	0	0	0	0
200S4W2X4W3Z6	360722	0960723	74,355.9	7	<1	0.6	0.9	0.4	6.7	4.7	53.8	4.9	27	0.4	0.1	0.4	0.4
8																	
AT332950	342339	0960727	566.0	4	1	1	1	0	42	1	28	26	0	0	0	0	0
Greasy Ck Section 28	351324	0960825	26.0	2	10	0.7	0	0	84.1	0.3	11.3	2.4	1.3	0	0	0	0
07335080	341044	0960842	18.2	2	10	1.3	0.3	0	34.4	1.4	15.4	42.1	5.3	0	0	0	0
07332790	344618	0960937	37.0	3	6	1.5	0	0	55.2	1	21.9	20.1	0.2	0	0	0	0
Caney Boggy Ck, Upper	344618	0960937	37.0	3	6	1.5	0	0	55.2	1	21.9	20.1	0.2	0	0	0	0
07332830	343812	0960939	26.3	2	8	0.3	0	0	48.2	1.2	26.7	23.5	0.1	0	0	0	0
07332250	335125	0960953	133.1	3	8	1.4	0.8	0	23.9	1.6	17	49.2	6	0	0	0	0.1
Island Bayou	335125	0960953	133.1	3	8	1.4	0.8	0	23.9	1.6	17	49.2	6	0	0	0	0.1

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics					Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)									
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
07332810	344305	0961031	91.0	3	4	1.5	0.1	0	45.2	1	21.6	30.3	0.4	0	0	0	
Caney Boggy Ck, Lower	344305	0961031	91.0	3	4	1.5	0.1	0	45.2	1	21.6	30.3	0.4	0	0	0	
Clearview Ck Upstream	352420	0961110	0.0	1	69	0.3	0	0	49.7	0.1	48.3	1.6	0	0	0	0	
Alabama Ck (blw Clearview Ck)	352333	0961114	6.0	1	23	0.5	1.6	0	35.3	0.2	51.5	10.5	0.4	0	0	0	
Alabama Ck (abv Clearview Ck)	352332	0961118	6.0	1	23	0.5	1.6	0	35.3	0.2	51.5	10.5	0.4	0	0	0	
Clearview Ck Downstream	352401	0961125	1.0	1	66	0.2	0.3	0	35.5	0.1	60.8	3.1	0	0	0	0	
07332510	335951	0961126	34.7	3	34	0.7	1.2	0	26.8	0.7	16.8	52.2	1.7	0	0	0	
North Buck Ck	363448	0961217	1.0	1	33	0	0	0	22.2	0.3	77.5	0	0	0	0	0	
AT335000	341505	0961218	716.0	4	2	1	1	0	35	2	24	33	2	0	0	1	
07242000	351556	0961221	14,296.8	6	3	0.5	1.3	0.2	2.5	4	49	3.6	38.6	0.4	0	0.1	
AT242000	351556	0961221	14,296.8	6	3	0.5	1.3	0.2	2.5	4	49	3.6	38.6	0.4	0	0.1	
07334950	341352	0961226	14.8	2	12	1	1.1	0	34.4	0.8	14.1	47	1.6	0	0.1	0	
07332865	343253	0961251	34.4	2	10	2.8	1.7	0	43.3	1.9	31.1	18.8	0.3	0	0.1	0	
104110E10X11Z17	341500	0961300	652.3	4	2	1.3	0.9	0.1	34.1	2.5	25.5	32.5	1.7	0	0	1.5	
07332880	342934	0961308	16.1	2	8	1.6	1.2	0	21.6	2.3	37.8	35	0.4	0	0.1	0	
Nuyaka Ck	352449	0961317	0.0	1	59	0	0	0	9.4	0	69.9	20.6	0	0	0	0	
20600N76X7Z200	345832	0961424	27,613.8	7	15	0.5	0.5	0.4	10.6	15.1	61.8	2.3	8.7	0.1	0	0.1	
AT231500	345832	0961424	27,613.8	7	15	0.5	0.5	0.4	10.6	15.1	61.8	2.3	8.7	0.1	0	0.1	
10600F4X5Z29	335949	0961427	478.2	4	1	1	1.4	0	26	1.6	35.2	32.6	2.1	0	0	0	
AT332500	335949	0961427	478.2	4	1	1	1.4	0	26	1.6	35.2	32.6	2.1	0	0	0	
07231500	345840	0961436	2.1	1	28	0.7	0	0	74.6	0.8	16.2	4.3	3.4	0	0	0	
07334900	341346	0961448	44.6	3	5	1.6	0.7	0	45.5	2.3	13.6	33.7	2.8	0	0	0	
Caney Ck, Section	341346	0961448	44.6	3	5	1.6	0.7	0	45.5	2.3	13.6	33.7	2.8	0	0	0	

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics					Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)								
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands
07332750	344011	0961456	31.2	3	12	0.5	0.1	0	38.2	1.2	49.6	10.4	0	0	0	0
07332230	334959	0961504	87.5	3	5	1.3	1.1	0	23.7	1.6	19.9	47.7	4.7	0	0	0.1
07334600	341850	0961809	34.6	3	8	1	0	0	37.9	2.8	13.7	40.2	4.4	0	0	0
Sandy Ck, Section 12	341850	0961809	34.6	3	8	1	0	0	37.9	2.8	13.7	40.2	4.4	0	0	0
07334700	341634	0961810	24.5	2	8	1.1	0.4	0.9	33.2	2.3	11.9	46.5	3.7	0	0	0.1
Salt Ck, Section 24	341634	0961810	24.5	2	8	1.1	0.4	0.9	33.2	2.3	11.9	46.5	3.7	0	0	0.1
07332690	344652	0961846	14.4	2	10	1	1.3	0	50.9	1	27.1	18.5	0.2	0	0	0
07332680	344601	0961951	33.0	2	6	0.7	0	0	56.3	1.1	24.3	17.5	0.2	0	0	0
Big Sandy Ck, Hughes County	344601	0961951	33.0	2	6	0.7	0	0	56.3	1.1	24.3	17.5	0.2	0	0	0
07332475	340237	0962048	38.6	3	11	0.9	13.4	0	23.8	1.3	12.4	44.6	3.2	0	0.4	0
Mineral Bayou	340237	0962048	38.6	3	11	0.9	13.4	0	23.8	1.3	12.4	44.6	3.2	0	0.4	0
Flat Rock Ck	352145	0962057	22.0	2	10	1	3.7	0	17.9	0.5	42.5	32.6	1.5	0	0.1	0.1
Walnut Ck Section 22	353542	0962057	41.0	3	7	0.9	0	6.6	33	0.3	45	12.9	1.3	0	0	0
07334460	342500	0962220	102.2	3	5	0.9	0.9	0.1	36.2	3.6	23.3	33.1	1.9	0	0	0
07332210	335135	0962228	30.8	2	9	1.6	2.5	0	21	2.2	19.3	47.3	6	0	0.1	0
07334425	343257	0962235	92.6	3	12	1.2	0.5	0	33.9	2.2	39.9	22.2	0.1	0	0	0
07334415	343639	0962338	65.1	3	4	1.4	0.2	0	34.7	2	41.4	20.4	0.1	0	0	0
Leader Ck, Section 30	343639	0962338	65.1	3	4	1.4	0.2	0	34.7	2	41.4	20.4	0.1	0	0	0
07334410	343922	0962424	41.2	3	59	1.6	0.2	0	38.7	1.6	37.5	20.3	0.1	0	0	0
07334550	341945	0962510	12.0	2	31	1.3	0	0	33.3	2.4	17	39.1	7	0	0	0
Sandy Ck, Section 1, Wapanucka	341945	0962510	12.0	2	31	1.3	0	0	33.3	2.4	17	39.1	7	0	0	0
07332660	344825	0962522	48.3	3	12	1.3	2	0	46.9	1.4	28.9	18.6	0.9	0	0	0
Muddy Boggy Ck	344825	0962522	48.3	3	12	1.3	2	0	46.9	1.4	28.9	18.6	0.9	0	0	0
07334440	342425	0962528	48.2	2	5	1	0.3	0.1	40.9	3.9	29.8	22	2	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics					Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)								
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands
Catfish Ck Section 25/36	354941	0962551	28.0	2	7	1.1	0.3	0	53.3	0.5	29.5	14.6	0.6	0	0	0
07332665	344722	0962629	26.6	2	7	1	0	0	40.4	1.2	30.4	26	0.9	0	0	0
Sincere Ck	344722	0962629	26.6	2	7	1	0	0	40.4	1.2	30.4	26	0.9	0	0	0
07334390	343242	0962634	27.0	3	5	1.3	0	0.1	43	2.2	30.5	22.5	0.5	0	0	0
Goose Ck	343242	0962634	27.0	3	5	1.3	0	0.1	43	2.2	30.5	22.5	0.5	0	0	0
Little Deep Fork (3)	354847	0962729	77.0	3	7	1.1	0.8	0.8	48.7	0.5	34	13.3	0.8	0	0	0
07334360	343504	0962733	18.6	2	9	0.6	0	0	44	2.7	31.1	20.4	1.2	0	0	0
07332425	341257	0962741	39.3	2	8	0.7	0.2	0	37.7	2.2	25	31.6	2.6	0	0	0
07334320	343719	0962859	10.6	2	6	1.8	0.1	0	19.6	1.2	60.8	15.7	1	0	0	0
07334435	342322	0962946	29.1	2	4	0.9	0	0	43.6	2.9	34.9	17.3	0.4	0	0	0
Delaware Ck, Section 18	342322	0962946	29.1	2	4	0.9	0	0	43.6	2.9	34.9	17.3	0.4	0	0	0
07334300	343719	0962952	35.8	2	3	1.6	1.4	0	33.4	1.5	30.3	31	0.9	0	0.1	0
Buckeye Ck	360435	0963042	14.0	2	13	0.4	0.3	1.8	39.6	1	45.7	8.4	2.9	0	0	0
AT231000	345755	0963043	891.0	4	4	3	1	0	41	1	37	8	8	0	0	0
Little Deep Fork (2)	354842	0963043	64.0	3	7	1.2	0.3	0.9	47.9	0.5	36.6	11.8	0.8	0	0	0
Hiliby Ck	353727	0963159	41.0	3	7	1.2	0.6	0	48.3	0.5	32.7	9.1	7.6	0	0	0
Spring Ck	355032	0963208	29.0	2	10	1.4	0.4	1.2	57.4	0.6	28.2	10	0.7	0	0	0
07332400	341502	0963255	202.6	3	11	0.9	0.5	0	19	1.7	54.5	22.1	1.2	0	0	0
Blue R., Section 34	341502	0963255	202.6	3	11	0.9	0.5	0	19	1.7	54.5	22.1	1.2	0	0	0
20800DA15X16Z30	345902	0963301	871.3	4	4	3	1.5	0.1	40.5	1.4	36.8	8.5	8.1	0	0	0.2
07334250	343625	0963328	19.0	2	19	1.2	0.2	0.2	48.6	4.4	26	18.8	0.6	0	0	0
Sheep Ck	343625	0963328	19.0	2	19	1.2	0.2	0.2	48.6	4.4	26	18.8	0.6	0	0	0
209120Z37	360540	0963430	16,937.7	6	1	0.6	0.7	0.3	5	3.9	53.2	4.5	31.6	0.1	0	0.2
AT161500	360540	0963430	16,937.7	6	1	0.6	0.7	0.3	5	3.9	53.2	4.5	31.6	0.1	0	0.2
07334220	343711	0963559	12.2	2	32	0.9	0.9	0	36.6	3.8	32	25.2	0.8	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics							Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)						
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands
Mill Ck nr. Harden City	343711	0963559	12.2	2	32	0.9	0.9	0	36.6	3.8	32	25.2	0.8	0	0	0
07334160	343903	0963610	13.6	2	26	1.1	0	35.4	5.5	30	27	1	0	0	0	0
Wewoka Ck	351025	0963632	79.0	3	7	2.1	5.1	0	26.8	0.3	34.2	15.3	15.9	0	0.2	0
07332380	342420	0963639	151.7	3	7	0.6	0.6	0.1	14.7	1.3	61	20.3	1.4	0	0	0
Blue R, Section 6	342420	0963639	151.7	3	7	0.6	0.6	0.1	14.7	1.3	61	20.3	1.4	0	0	0
07332385	342417	0963640	151.7	3	7	0.6	0.6	0.1	14.7	1.3	61	20.3	1.4	0	0	0
07332360	342655	0963648	18.3	2	12	0.5	0.5	0	21	1.4	58.9	17	0.6	0	0	0
Little Blue Ck	342655	0963648	18.3	2	12	0.5	0.5	0	21	1.4	58.9	17	0.6	0	0	0
07334100	344140	0963654	23.2	2	19	1.3	13	0.1	35.3	2.4	16.6	27.4	3.6	0	0.3	0
Clear Boggy Ck	344140	0963654	23.2	2	19	1.3	13	0.1	35.3	2.4	16.6	27.4	3.6	0	0.3	0
07334120	344108	0963805	22.0	3	21	1.5	0.1	1.9	28.6	5.5	29.1	30.1	3.1	0	0	0
07331425	341350	0963810	24.9	2	15	1.2	0	0	25.9	1.7	32.5	38	0.7	0	0	0
07331435	341352	0963843	5.8	1	19	1.1	0	0	27.9	1.8	33.1	35	1.2	0	0	0
Turkey Ck	352237	0963852	52.0	3	3	1.4	0.3	0	13.5	0.2	48.7	20.4	15.4	0	0	0.2
20720Z76	355015	0963940	1.1	1	47	1	0.1	0	19.8	0.2	68.8	10.1	0	0	0	0
AT242500	354169	0963944	1,111.0	5	2	2	5	0	29	0	46	11	7	0	0	0
20591Z68	352420	0964025	13,903.0	6	3	0.4	1.3	0.2	1.7	4.1	49.3	3.1	39.5	0.4	0	0.1
20673Z44	345610	0964045	26,434.6	7	15	0.4	0.4	0.4	9.3	15.7	63	1.9	8.7	0.1	0	0.1
AT229400	345610	0964045	26,434.6	7	15	0.4	0.4	0.4	9.3	15.7	63	1.9	8.7	0.1	0	0.1
07331380	341421	0964105	94.2	3	8	1.1	0.3	0	24.3	1.8	59.4	11	2	0	0	0
07332310	343258	0964133	55.6	2	7	0.8	1.2	0.2	12.4	1.2	48.9	32.3	3.1	0	0.1	0
Upper Blue R	343258	0964133	55.6	2	7	0.8	1.2	0.2	12.4	1.2	48.9	32.3	3.1	0	0.1	0
07331305	342112	0964236	65.4	3	19	0.8	0	0	18.7	1.6	73.3	3	2.6	0	0	0
Pennington Ck, Section 30	342112	0964236	65.4	3	19	0.8	0	0	18.7	1.6	73.3	3	2.6	0	0	0
07331280	341413	0964302	33.6	2	6	0.9	0.1	0.3	40.6	3.4	31.7	22.7	0.4	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

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Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics					Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)									
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
Spring Ck Section 30	342546	0964307	9.0	1	16	0.2	0	0	16.1	1.7	79	2.8	0.1	0	0	0	0
07331297	342602	0964309	8.1	1	25	0.2	0	14	1.8	80.9	2.9	0.1	0	0	0	0	0
200C12W15X12W16	363009	0964322	56,018.5	7	9	0.6	0.9	6.8	5.1	54.4	4.9	25.7	0.6	0.2	0.5	0.5	0.5
prague lake	353150	0964324	7.0	1	20	5.8	0.1	38.9	0.2	41.4	8.5	4.9	0	0	0	0	0.1
AT152500	363017	0964331	55,984.0	7	2	1	1	7	5	54	5	26	1	0	0	0	0
07152500	363015	0964341	9.0	2	5	0.6	2.7	11.9	0.2	70.2	3.4	10.9	0	0.1	0	0	0
Salt Ck	360657	0964420	43.0	2	13	0.7	0.3	25.6	0.6	60.2	7.3	5.4	0	0	0	0	0
07331260	342141	0964719	10.2	2	21	0.8	0	28	2.7	55.4	12.8	0.3	0	0	0	0	0
AT241700	352438	0964719	13,864.0	6	2	0	1	2	4	49	3	40	0	0	0	0	0
07331294	342629	0964737	19.4	2	15	1.9	0.1	9.3	1.5	78.9	1.5	6.7	0	0	0	0	0
Doga Ck	363352	0964745	29.0	3	13	0.5	0	5.3	0.8	84	4.9	4	0	0	0	0	0.2
21218Z20	362037	0964757	536.1	4	9	1.5	1.1	7.9	0.7	37.4	11.4	39.8	0	0	0	0	0.3
AT153000	362037	0964757	536.1	4	9	1.5	1.1	7.9	0.7	37.4	11.4	39.8	0	0	0	0	0.3
07331255	341350	0964847	95.6	3	10	1.8	0.5	26.9	3	50.9	7.1	5.1	0	0	0	0	0.1
Black Bear Ck	361959	0965004	505.0	4	3	1.4	0.9	7.3	0.8	36.3	11.6	41.4	0	0	0	0	0.3
07331200	342418	0965147	47.1	2	6	1.9	0.1	13.8	2	64.1	7.6	10	0	0	0	0	0
Mill Ck nr. Mill Ck	342418	0965147	47.1	2	6	1.9	0.1	13.8	2	64.1	7.6	10	0	0	0	0	0
chandler lake	354359	0965408	5.0	1	23	5.8	0.1	28.2	0.3	55	8.7	2	0	0	0	0	0
AT161450	355908	0965446	15,537.0	6	3	1	1	4	4	53	4	33	0	0	0	0	0
200L12W6X12W7Z1	364155	0965540	48,116.2	1	23	0.5	1	7.7	5.6	56.4	4.7	22.6	0.7	0.2	0.2	0.3	0.3
CHIC_BUCK1	342732	0965629	1.2	1	57	0.6	0	34.2	4.5	56.8	1	2.8	0	0	0	0	0
CHIC_BUCK2	342657	0965635	2.1	1	32	1	0	37.6	5.7	47.4	3.1	5.2	0	0	0	0	0
CHIC_BUCK3	342602	0965638	2.9	1	62	2.2	0	32.7	4.7	50.5	2.6	7.3	0	0	0	0	0
AT148120	365259	0965646	47,762.0	1	4	0	1	8	6	56	5	23	1	0	0	0	0
CHIC_BUCK4	342534	0965702	7.4	2	41	2.3	0	25.2	4.7	55.7	3.1	8.9	0	0	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
CHIC_TRAV3	343014	0965720	2.7	1	107	0.9	1.5	0	43.5	4.7	42.1	1.5	5.8	0	0	0	
Julian Ck	345728	0965750	13.0	2	20	0.8	0	23.2	0.6	44.5	16.5	14.4	0	0	0	0	
CHIC_BUCK5	342451	0965804	13.4	2	40	2.3	0	25.6	4	54.5	5.9	7.7	0	0	0	0	
CHIC_TRAV4	343014	0965813	39.2	1	57	1.6	2.9	19.2	1.3	60.1	9.4	5.6	0	0	0	0	
07241750	351653	0965814	2.4	1	15	1	0.3	17.8	0.2	47.5	12.3	21	0	0	0	0	
CHIC_ROCK2	343015	0965816	3.7	1	57	0.9	8	47.2	4	33.9	1.3	4.8	0	0	0	0	
CHIC_ROCK3	343013	0965818	39.3	2	26	1.6	2.9	19.2	1.3	60.1	9.4	5.6	0	0	0	0	
07331000	341360	0965832	7,169.8	5	3	1.6	0.8	9.3	6.3	45.3	8	28.5	0	0	0	0.1	
AT331000	341360	0965832	7,169.8	5	3	1.6	0.8	9.3	6.3	45.3	8	28.5	0	0	0	0.1	
10800AJ91X95Z12	341403	0965832	7,169.8	5	3	1.6	0.8	9.3	6.3	45.3	8	28.5	0	0	0	0.1	
CHIC_ROCK1	343024	0965833	39.1	2	26	1.6	2.7	19.2	1.3	60.2	9.4	5.6	0	0	0	0	
CHIC_ROCK4	342953	0965906	43.6	2	13	1.6	3.3	22.6	1.6	56.9	8.6	5.4	0	0	0	0	
07329852	342943	0965918	44.2	2	20	1.6	4.5	22.4	1.6	56.1	8.5	5.3	0	0	0	0	
20700AI10X11Z74	354120	0970120	512.5	4	5	1.5	9	33.5	0.5	40.7	7.7	6.9	0	0.2	0	0	
CHIC_GS2	342908	0970146	37.0	2	23	1.6	0.1	22.4	0.7	50.5	16.4	8.2	0	0	0	0	
20900F108X109Z6	355732	0970149	16,140.2	6	2	0.5	0.6	4	4.1	53.6	4.1	32.6	0.1	0	0	0.2	
07161000	355727	0970154	16,157.8	6	2	0.5	0.6	4	4.1	53.6	4.1	32.6	0.1	0	0	0.2	
CHIC_GS1	343024	0970202	34.0	2	60	1.7	0.1	21.2	0.7	51	16.7	8.6	0	0	0	0	
07330700	341425	0970305	324.7	4	10	1.7	1.8	22	1.8	50.9	10.9	10.8	0	0	0	0	
21000B31X33Z7	363430	0970420	0.8	1	70	0.8	0.1	0.8	4.3	79.1	10.7	3.7	0	0	0	0.6	
AT152260	363430	0970420	0.8	1	70	0.8	0.1	0.8	4.3	79.1	10.7	3.7	0	0	0	0.6	
Captain Ck	354021	0970516	59.0	3	3	0.5	0.4	39.8	0.5	44.9	8.6	5.3	0	0	0	0	
Bois d'Arc Ck	364839	0970610	34.0	2	10	0.1	0	0.1	0.2	29.3	14.1	56.1	0	0	0	0.1	
AT331110	340230	0970849	67.0	3	7	1	9	20	1	40	17	12	0	0	0	0	
100A19W2Z12	334340	0970935	30,662.6	7	4	1.2	0.7	2.4	14.1	35.9	6.6	38	0.3	0	0.2	0.2	
07316000	334340	0970935	30,662.6	7	2	1.2	0.7	2.4	14.1	35.9	6.6	38	0.3	0	0.2	0.2	
AT316000	334340	0970935	30,662.6	7	2	1.2	0.7	2.4	14.1	35.9	6.6	38	0.3	0	0.2	0.2	

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
AT328500	344418	0970955	5,394.0	5	4	1	1	0	5	8	45	7	34	0	0	0	
07241550	353001	0971137	13,565.9	6	4	0.3	1.2	0.2	1.2	4.1	49.6	2.7	40.1	0.5	0	0.1	
AT241550	353001	0971137	13,565.9	6	4	0.3	1.2	0.2	1.2	4.1	49.6	2.7	40.1	0.5	0	0.1	
07328567	344730	0971147	2.1	1	19	3.3	0.3	0	10.9	0.8	46.8	21.8	16.1	0	0	0	
Whitefield Ck	344730	0971147	2.1	1	19	3.3	0.3	0	10.9	0.8	46.8	21.8	16.1	0	0	0	
07328550	344933	0971207	9.0	2	24	2.7	0	0	19.9	2.3	54.7	15.4	5	0	0	0	
Washington Ck	344933	0971207	9.0	2	24	2.7	0	0	19.9	2.3	54.7	15.4	5	0	0	0	
Lake Pauls Valley Wash. Ck Arm Composite	344703	0971232	17.0	2	10	4.2	0	0	19.3	2.6	47.8	20	6	0	0	0	
20800A6X7Z3	351314	0971300	258.8	4	15	6.2	4.5	0	36.1	2.4	35.4	8.8	6.5	0	0	0.1	
20800AB6X7Z3	351311	0971314	258.7	4	15	6.2	4.5	0	36.1	2.4	35.4	8.8	6.4	0	0	0.1	
07328560	344933	0971323	2.0	1	28	3.6	0	0	18	1.4	44.4	24.1	8.4	0	0	0	
Fajit Ck	344933	0971323	2.0	1	28	3.6	0	0	18	1.4	44.4	24.1	8.4	0	0	0	
20807Z2	351634	0971422	69.0	3	8	1.5	1.5	0	53.3	3.4	29.3	6.7	3.9	0	0	0.2	
10800H74X7Z25	344517	0971504	5,305.1	5	5	1.3	0.6	0.1	4.5	7.7	44.7	6.7	34.3	0	0	0.1	
20800B6X7Z4	351340	0971523	0.5	1	18	22	0	0	53.1	1	16.3	1	6.6	0	0	0	
20806Z5	351121	0971547	6.2	1	30	1.4	0	0	47.7	2.3	36.5	6.5	5.6	0	0	0	
21100L5X7Z14	364831	0971639	1,877.6	5	1	0.5	0.4	0	0.3	1.4	31.7	6.9	57.8	0	0.1	0.8	
AT152000	364831	0971639	1,877.6	5	1	0.5	0.4	0	0.3	1.4	31.7	6.9	57.8	0	0.1	0.8	
20805Z6	351305	0971810	32.0	2	11	2.6	1	0	38.1	2.6	37	11.7	7	0	0	0	
20800C5X7Z7	351333	0971819	121.1	4	6	5.5	8.5	0	21.3	1.7	42.7	11.3	8.9	0	0	0.1	
1100CH6X7Z13	335630	0971820	307.9	4	5	1.1	1.2	0	30.3	2.7	40.8	14.3	9.2	0	0	0.4	
AT315900	335630	0971820	307.9	4	5	1.1	1.2	0	30.3	2.7	40.8	14.3	9.2	0	0	0.4	
AT151000	364014	0971834	4,497.0	5	1	1	0	0	0	3	48	4	41	0	0	2	
20600G64X65Z31	350050	0972050	25,590.0	7	5	0.4	0.4	0.4	8.8	16.2	63.8	1.4	8.6	0.1	0	0.1	
AT229200	350050	0972050	25,590.0	7	5	0.4	0.4	0.4	8.8	16.2	63.8	1.4	8.6	0.1	0	0.1	
20700DA3X6Z301	353858	0972100	3.1	1	23	0.5	1.2	0.2	51.3	0.2	37.2	5.2	4.2	0	0	0	
20900K89X95Z21	355510	0972535	15,153.0	6	5	0.4	0.5	0.3	3.6	4.3	55.2	3.4	32	0.1	0	0.2	

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
AT160000	355510	0972535	15,153.0	6	5	0.4	0.5	0.3	3.6	4.3	55.2	3.4	32	0.1	0	0.2	
guthrie lake	354905	0972626	13.0	1	23	3.8	4	0	44	1.4	35.3	7.6	3.9	0	0	0	
AT315700	335439	0972840	29,299.0	7	3	1	1	1	2	15	35	6	39	0	0	0	
07159750	354849	0972840	321.3	4	3	3.1	9.6	0	7.1	1.2	32.5	14.8	31.5	0	0.2	0	
20994Z336	354743	0972932	10.9	1	26	1.3	1.9	0	21.4	2.5	53.4	9.3	10.1	0	0.2	0	
Panther Ck	345502	0973351	8.0	1	30	3.5	0.2	0	14.5	2	69.3	4.3	6.3	0	0	0	
111050A7X9Z2	340020	0973400	577.3	5	14	1.2	0.3	0.2	12.1	3.3	58.7	11.8	12.2	0	0	0.2	
209960A11X12Z13	360336	0973505	412.9	4	4	1.2	4.5	0	2.4	1.1	15.6	17.1	57.7	0	0.1	0.3	
AT160500	360336	0973505	412.9	4	4	1.2	4.5	0	2.4	1.1	15.6	17.1	57.7	0	0.1	0.3	
20572Z48	352845	0973930	13,240.1	6	<1	0.3	0.5	0.2	1	4.2	50.3	2.4	40.6	0.5	0	0.1	
10800Q60X61Z43	345540	0974620	4,762.7	5	11	1.2	0.6	0.1	3.7	8.3	44.3	5.9	35.9	0	0	0.1	
07328125	345116	0974727	14.6	2	15	1.7	0	0	8.7	5.7	76.1	2.4	5.4	0	0	0	
07328122	345027	0974824	9.4	2	13	1.8	0	0	8.3	4.2	79.8	1.3	4.7	0	0	0	
07328120	344936	0974855	8.0	2	23	1.9	0	0	9	4.3	83	0.1	1.7	0	0	0	
20900AB85X86Z4	355706	0975451	13,970.5	6	3	0.3	0.2	0.3	3.4	4.3	57.8	2.6	30.8	0.1	0	0.2	
3																	
AT159100	355706	0975451	13,970.5	6	3	0.3	0.2	0.3	3.4	4.3	57.8	2.6	30.8	0.1	0	0.2	
lake taylor Dam Composite	344458	0975517	21.0	2	20	1.9	4	0	6.3	0.5	50	18.5	18.7	0	0	0	
Lower Turkey Ck Section 2	355842	0975522	417.0	3	3	0.6	0.8	0	1.7	0.6	9.3	11	75.7	0	0	0.2	
Buffalo Ck	360934	0975546	21.0	2	13	0.3	0.3	0	1.1	0.5	10.7	17.9	69.2	0	0	0	
Little Turkey Ck Downstream of Bridge	360147	0975547	22.0	2	16	1.9	3.5	0	3.7	0.3	9.9	9.1	70.8	0	0.1	0.7	
100C11W1Z1	335243	0975603	28,580.8	7	4	1.2	0.7	0.6	1.3	14.9	35.1	5.9	39.9	0.3	0	0.2	
AT315500	335243	0975603	28,580.8	7	4	1.2	0.7	0.6	1.3	14.9	35.1	5.9	39.9	0.3	0	0.2	
Rush Ck abv Taylor	344631	0975648	10.0	2	20	0.5	7.4	0	5.3	0.4	39.3	22.1	24.9	0	0	0	

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

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Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
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20500BK72X75Z1 2	353344	0975732	13,106.3	6	1	0.3	0.4	0.2	1	4.3	50.7	2.3	40.5	0.5	0	0	0.1
AT239500	353344	0975732	13,106.3	6	1	0.3	0.4	0.2	1	4.3	50.7	2.3	40.5	0.5	0	0	0.1
Middle Turkey Ck Section 18	361304	0975907	301.0	3	3	0.5	0.6	0	1.2	0.6	9.4	10.6	76.9	0	0	0	0.2
Clear Ck	362235	0975925	18.0	2	16	0.7	0.4	0	4.4	1.3	17.7	14.1	61.4	0	0	0	0
11212Z202	341055	0980005	191.9	3	10	1.5	6.1	0.1	8.9	1.6	55.4	10.4	15.8	0	0	0	0.2
AT313600	341055	0980005	191.9	3	10	1.5	6.1	0.1	8.9	1.6	55.4	10.4	15.8	0	0	0	0.2
RS158550	360422	0980023	20.0	3	23	0	0	0	4	0	9	7	79	0	0	0	0
RS158510	360659	0980056	5.0	2	13	0	0	0	8	1	10	7	74	0	0	0	0
11200DA9X11Z30 1	341300	0980257	565.2	4	23	4.2	0.5	0.2	6.1	1.8	49.5	13.3	24.1	0	0	0	0.3
Upper Turkey Ck Section 33	362050	0980323	130.0	3	3	0.3	0.6	0	0.9	0.3	8.9	9.6	79.3	0	0	0	0.1
Sixmile Ck	353524	0980354	20.0	2	10	0.8	0.6	0	3.3	0.9	17.6	11.6	65.2	0	0	0	0
100H13WBZ36	340758	0980530	26,055.1	7	3	1	0.7	0.7	1	15.1	33.5	5.4	42.2	0.3	0	0	0.1
AT312720	340758	0980530	26,055.1	7	3	1	0.7	0.7	1	15.1	33.5	5.4	42.2	0.3	0	0	0.1
07327065	350700	0980724	75.4	3	14	4	0	0.1	16.4	4.3	47.7	11	16.4	0	0	0	0.1
07327055	351121	0980735	21.4	2	10	0.2	0	0	14.4	4.6	51.4	11.5	17.8	0	0	0	0
21000H1X14Z25	364511	0980744	3,173.2	5	14	1.1	0.2	0.2	0.3	2.8	59.2	2.3	31.4	0	0	0	2.6
07312800	344153	0980936	55.4	3	2	0.9	0.8	0.1	7.3	0.8	49.6	12	28.6	0	0	0	0
Beaver Ck, blw WC-5	344153	0980936	55.4	3	2	0.9	0.8	0.1	7.3	0.8	49.6	12	28.6	0	0	0	0
07312730	344159	0980941	33.0	3	11	1	1.2	0.1	7.1	0.7	41.9	12.4	35.4	0	0	0	0
Beaver Ck, abv WC-4	344159	0980941	33.0	3	11	1	1.2	0.1	7.1	0.7	41.9	12.4	35.4	0	0	0	0
07327050	351121	0981034	34.1	2	12	0.5	0	0.1	21.2	4.7	46.9	9.9	16.7	0	0	0	0
07312780	344313	0981036	20.8	2	18	0.7	0.2	0	7.4	0.8	61.1	11.7	18.1	0	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

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Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
Whiskey Ck at ISCO -1	344313	0981036	20.8	2	18	0.7	0.2	0	7.4	0.8	61.1	11.7	18.1	0	0	0	0
07312760	344514	0981114	8.6	1	13	0.8	0.1	0	8.4	0.9	57.2	13.2	19.4	0	0	0	0
Upper Whiskey Ck, Site 3	344514	0981114	8.6	1	13	0.8	0.1	0	8.4	0.9	57.2	13.2	19.4	0	0	0	0
209820BD5X6Z20 5	360611	0981136	186.8	3	5	0.5	0.4	0.3	7.1	12.5	21.1	18.1	39.8	0	0	0	0.2
07312740	344514	0981211	5.9	1	29	0.5	0	0	6.6	1	68.4	5.6	17.9	0	0	0	0
West Whiskey Ck, Site 2	344514	0981211	5.9	1	29	0.5	0	0	6.6	1	68.4	5.6	17.9	0	0	0	0
10800V47X49Z109	350506	0981435	3,632.5	5	7	1.1	0.4	0.1	1.4	9.8	44.3	4.3	38.5	0	0	0	0.1
AT326500	350506	0981435	3,632.5	5	7	1.1	0.4	0.1	1.4	9.8	44.3	4.3	38.5	0	0	0	0.1
11300S19X20Z23	342144	0981656	695.5	4	4	2.8	4.4	1	7	5.4	43.3	14	22	0	0.1	0	0
AT311000	342144	0981656	695.5	4	4	2.8	4.4	1	7	5.4	43.3	14	22	0	0.1	0	0
07228500	353237	0981903	24,891.5	7	5	0.3	0.3	0.4	8.8	16.6	64.7	1.1	7.8	0.1	0	0	0.1
AT228500	353237	0981903	24,891.5	7	5	0.3	0.3	0.4	8.8	16.6	64.7	1.1	7.8	0.1	0	0	0.1
113230L11X12Z26	341232	0981948	1,104.4	5	4	1.2	0.5	0.1	3.9	8.8	31.9	20.1	33.2	0	0	0	0.3
AT315050	341232	0981948	1,104.4	5	4	1.2	0.5	0.1	3.9	8.8	31.9	20.1	33.2	0	0	0	0.3
21000EA10X12Z37	364918	0982135	1,079.5	4	3	0.4	0.2	0.3	0.1	4	72.2	1.1	20.3	0	0	0	1.4
AT148450	364918	0982135	1,079.5	4	3	0.4	0.2	0.3	0.1	4	72.2	1.1	20.3	0	0	0	1.4
11300C15X16Z4	344655	0982200	250.2	4	4	4.1	0.5	0	3.7	3.8	38.1	16.6	33.2	0	0	0	0
353357098220901	353357	0982209	24,849.1	7	4	0.3	0.3	0.4	8.8	16.6	64.8	1.1	7.8	0.1	0	0	0.1
South Canadian R nr. Bridgeport -6	353357	0982209	24,849.1	7	4	0.3	0.3	0.4	8.8	16.6	64.8	1.1	7.8	0.1	0	0	0.1
20600DA43X45Z3 0	353400	0982245	24,846.1	7	4	0.3	0.3	0.4	8.8	16.6	64.8	1.1	7.8	0.1	0	0	0.1
AT158110	362218	0982707	12,594.0	6	3	0	0	0	3	4	62	2	28	0	0	0	0
Lake Ck Site # 4	352145	0983056	29.0	2	13	0.5	0	0.1	3.4	1.6	25.2	6.4	62.8	0	0	0	0
07228360	353528	0983059	24,433.8	7	8	0.3	0.3	0.4	8.8	16.8	65.5	1	6.9	0.1	0	0	0.1

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
South Canadian R nr. Hydro -5	353528	0983059	24,433.8	7	8	0.3	0.3	0.4	8.8	16.8	65.5	1	6.9	0.1	0	0	0.1
Lake Ck Site # 5	352421	0983114	11.0	2	23	1	0	0.1	3.8	2.7	25.3	6	61.1	0	0	0	0
Lake Ck Site # 2	351816	0983136	54.0	2	13	0.4	0	0.1	3.1	1.6	24.4	7.8	62.6	0	0	0	0
Lake Ck Site # 3	352001	0983136	5.0	1	43	0.5	0.1	0.3	0.6	1.2	23.3	4.7	69.3	0	0	0	0
Lake Ck Site # 1	351530	0983154	68.0	3	16	0.4	0.3	0.1	3.2	1.4	22.1	8.3	64.2	0	0	0	0
07311200	343724	0983348	24.4	2	20	1.5	0.2	1.6	11.9	14.4	68.3	2.3	0	0	0	0	0
20500BB52X60Z11	360445	0983525	12,538.8	6	10	0.2	0.4	0.2	0.7	4.3	51.9	2	39.7	0.5	0	0	0.1
07228330	354524	0983827	24,303.9	7	5	0.3	0.3	0.4	8.8	16.9	65.7	0.9	6.7	0.1	0	0	0.1
South Canadian R, East of Thomas - 4	354524	0983827	24,303.9	7	5	0.3	0.3	0.4	8.8	16.9	65.7	0.9	6.7	0.1	0	0	0.1
07228320	354553	0984008	6.7	2	22	0	0	0	8.1	7.6	29.2	5	50.1	0	0	0	0
Mark Ck, Site # 1	354553	0984008	6.7	2	22	0	0	0	8.1	7.6	29.2	5	50.1	0	0	0	0
07228300	354617	0984029	24,280.4	7	4	0.3	0.3	0.4	8.8	16.9	65.7	0.9	6.6	0.1	0	0	0.1
South Canadian R nr. Thomas -3	354617	0984029	24,280.4	7	4	0.3	0.3	0.4	8.8	16.9	65.7	0.9	6.6	0.1	0	0	0.1
07228310	354517	0984107	4.6	2	31	0	0	0	4.4	6.4	29.7	3.8	55.6	0	0	0	0
Mark Ck, Site # 2	354517	0984107	4.6	2	31	0	0	0	4.4	6.4	29.7	3.8	55.6	0	0	0	0
RS325550	350645	0984441	2,616.0	5	2	1	0	0	1	11	51	2	33	0	0	0	0
AT325300	351728	0985012	2,352.0	5	1	1	0	0	1	12	54	2	30	0	0	0	0
20500BL52X58Z13	361106	0985515	12,345.3	6	3	0.1	0.4	0.2	0.5	4.2	52.3	1.9	39.8	0.5	0	0	0.1
AT238000	361106	0985515	12,345.3	6	3	0.1	0.4	0.2	0.5	4.2	52.3	1.9	39.8	0.5	0	0	0.1
AT228250	360315	0985808	23,957.0	7	5	0	0	0	9	17	66	1	6	0	0	0	0
RS324350	353030	0990057	1,664.0	5	6	1	0	0	1	14	61	2	22	0	0	0	0
AT308000	341241	0990453	19,909.0	1	7	1	1	1	0	14	33	3	47	0	0	0	0
07305000	343804	0990547	4,516.7	5	2	1	0.6	0.6	0.2	12.8	36.2	3.6	44.4	0.5	0	0	0.1
11500DA19X20Z3	343804	0990547	4,516.7	5	2	1	0.6	0.6	0.2	12.8	36.2	3.6	44.4	0.5	0	0	0.1

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics							Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)						
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands
AT305000	343816	0990611	4,511.0	5	2	1	1	1	0	13	36	4	44	1	0	0
11517Z34	345451	0990649	545.8	4	3	1	1.7	0.1	0.4	5.5	18.6	6.5	66.1	0	0	0.1
AT304500	345451	0990649	545.8	4	3	1	1.7	0.1	0.4	5.5	18.6	6.5	66.1	0	0	0.1
10800DA23X24Z30	353220	0991010	1,513.6	5	6	1.1	0.2	0.2	0.6	14.7	62.7	1.4	19	0	0	0.1
07237500	362612	0991641	11,649.3	6	4	0.1	0.4	0.2	0.3	3.9	52.5	2	40.2	0.5	0	0.1
AT237500	362612	0991641	11,649.3	6	4	0.1	0.4	0.2	0.3	3.9	52.5	2	40.2	0.5	0	0.1
10800AT3X7Z152	353923	0991821	1,355.0	5	2	0.4	0.1	0.2	0.6	15.1	64	1.4	18.1	0	0	0
11500L13X16Z13	345326	0991822	2,818.9	5	45	1	0.5	0.7	0.1	10.1	40.8	2.5	43.3	0.8	0	0.2
07157950	365107	0991854	1,058.7	6	3	0.1	0.2	0.2	3.1	1.6	69.3	1.2	27.6	0.1	0	0.2
AT157950	365107	0991858	10,359.0	6	9	0	0	0	3	2	65	1	28	0	0	0
20950Z200	364608	0992158	405.1	4	3	0.1	0.2	0.2	0.9	7	65.1	1.5	24.9	0	0.1	0.1
North Fork of Red R blw Lake Ck Site 5	350311	0992214	40.0	2	16	1.1	0.2	0.1	0.4	3.4	9.5	5.3	79.6	0	0	0.4
07301950	350311	0992215	40.0	2	16	0.6	0.4	0.6	0.2	12.6	42.1	2.5	40.9	0	0	0.1
07301750	350318	0992218	2,706.1	5	6	0.7	0.6	0.7	0.1	10.2	42	2.4	42.5	0.8	0	0.1
North Fork of Red R, abv Lake Ck, Site 4	350318	0992218	2,706.1	5	6	0.7	0.6	0.7	0.1	10.2	42	2.4	42.5	0.8	0	0.1
Lake Ck nr. Lake Ck 1	350236	0992253	37.0	2	16	1.1	0.3	0.1	0.4	3.3	8.8	5	80.6	0	0	0.4
07301110	342844	0992255	1,995.6	5	4	0.6	0.6	1	0.1	12.9	40.7	3.4	40.6	0	0	0.1
AT301110	342844	0992255	1,995.6	5	4	0.6	0.6	1	0.1	12.9	40.7	3.4	40.6	0	0	0.1
07301900	350237	0992353	34.8	2	30	1.2	0.3	0.2	0.4	3.5	9.1	5.1	79.8	0	0	0.5
20900DA46X47Z30	365528	0992356	10,283.2	6	10	0.1	0.2	0.2	3.1	1.6	65.2	1.2	28.1	0.1	0	0.2
07301880	350214	0992357	2.5	1	27	1.1	0	0.2	0.2	0.2	6	8.3	84.2	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Latitude (dms)	Longitude (dms)	Basin characteristics										Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)				
			Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands	
Lake Ck Trib. nr. Lake Ck, 6	350214	0992357	2.5	1	27	1.1	0	0.2	0.2	0.2	0.2	6	8.3	84.2	0	0	0
AT324200	353902	0992549	1,117.0	4	5	0	0	0	0	16	64	1	18	0	0	0	0
07301800	350204	0992551	15.2	2	24	1.8	0.7	0.1	0.3	2.4	7.5	6.2	80.3	0	0	0	0.7
Lake Ck nr. Granite, 2	350204	0992551	15.2	2	24	1.8	0.7	0.1	0.3	2.4	7.5	6.2	80.3	0	0	0	0.7
07301790	350204	0992901	7.9	2	35	2.2	1.2	0.1	0.4	3.2	6.2	6.5	79.2	0	0	0	1
Lake Ck nr. Willow, 3	350204	0992901	7.9	2	35	2.2	1.2	0.1	0.4	3.2	6.2	6.5	79.2	0	0	0	1
11800C6X10Z6	345536	0993000	810.9	4	3	0.6	0.2	0.6	0.1	27.5	41	3.9	26.1	0	0	0	0.1
AT303500	345536	0993000	810.9	4	3	0.6	0.2	0.6	0.1	27.5	41	3.9	26.1	0	0	0	0.1
07301780	350255	0993000	1.8	1	8	1.1	5.4	0.1	0.1	0.9	6.8	9.2	76.4	0	0.1	0	0
Lake Ck at Willow, 8	350255	0993000	1.8	1	8	1.1	5.4	0.1	0.1	0.9	6.8	9.2	76.4	0	0.1	0	0
11500J1X12Z53	351005	0993025	2,640.6	5	15	0.6	0.6	0.7	0.1	9.9	42.4	2.4	42.4	0.9	0	0	0.1
AT301500	351005	0993025	2,640.6	5	15	0.6	0.6	0.7	0.1	9.9	42.4	2.4	42.4	0.9	0	0	0.1
11600DA1X5Z301	345132	0993028	1,465.1	5	18	0.5	0.4	1.3	0	13.8	50.5	1.1	32.3	0.1	0	0	0
AT300500	345132	0993028	1,465.1	5	18	0.5	0.4	1.3	0	13.8	50.5	1.1	32.3	0.1	0	0	0
SWQ5	342456	0993305	8,580.8	6	5	0.3	0.6	0.7	0.6	10.3	32	2.7	52.2	0.5	0	0	0
AT237050	362658	0993519	1,805.0	4	6	0	0	0	0	8	53	3	34	0	0	0	0
AT234450	363527	0993528	9,575.0	6	2	0	0	0	0	3	52	2	42	1	0	0	0
SWQ3	342438	0993716	353.6	4	6	0.2	0.6	0	0.1	2.5	7.2	9	80.3	0	0	0	0.1
AT299710	342751	0993945	326.0	4	5	0	1	0	0	2	7	9	80	0	0	0	0
SWQ4	342445	0994409	7,806.6	6	2	0.3	0.5	0.8	0.6	10.7	33.7	1.8	50.9	0.6	0	0	0
Lake Skipout Dam Composite	353815	0995255	1.0	2	69	1	0	0	1.4	50.4	46.3	0.2	0.8	0	0	0	0
lake skipout West Arm Top	353812	0995303	12.0	2	75	0.3	0	0.2	0.5	13.6	65.6	1.7	18.1	0	0	0	0

Appendix 1. Environmental characteristics for each of the 798 water-quality sites in Oklahoma—Continued

[dms, degrees minutes seconds; mi², square miles; ft/mi, foot per mile; %, percent; Dev. land, Developed lands; P/H, Pasture/Hay; RC/SG, Row Crops/Small Grains; U/R, Urban./Recreational Grasses; Ck, Creek; R, River; abv, Above; blw, Below; nr., Near; Wash., Washington; Hwy, Highway]

Site identification number	Basin characteristics			Land-use proportions (%) for drainage basins, computed from the National Land Cover Dataset (2000)												
	Latitude (dms)	Longitude (dms)	Area (mi ²)	Stream order	Slope (ft/mi)	Water	Dev. land	Barren land	Forest	Shrub-land	Grass-land	P/H	RC/SG	Fallow	U/R	Wet-lands
AT234300	363420	0995322	81.0	3	20	0	0	0	0	9	49	4	38	0	0	0
AT234400	364501	0995327	8,708.0	6	7	0	0	0	0	2	53	2	41	1	0	0
07316430	353729	0995349	10.6	2	30	0	0	0.2	0.2	11.1	67.3	1.9	19.2	0	0	0
07303400	350042	0995412	402.1	4	2	0.2	0.4	0.1	0.1	25.4	47.9	2.3	23.5	0	0	0
AT234250	364414	0995851	517.0	4	7	0	0	0	0	2	51	1	45	0	0	0
AT234200	364723	1000326	8,388.0	6	6	0	0	0	0	2	53	2	42	1	0	0
AT157000	365830	1001851	6,768.0	6	6	0	0	5	2	70	1	22	0	0	0	0
07234000	364920	1003108	7,855.4	6	6	0.1	0.3	0.1	0.3	2.4	51.7	1.8	42.6	0.7	0	0
AT234000	364920	1003108	7,855.4	6	6	0.1	0.3	0.1	0.3	2.4	51.7	1.8	42.6	0.7	0	0
AT233900	364533	1005038	7,243.0	6	3	0	0	0	0	3	52	2	43	1	0	0
AT233750	363659	1010124	1,871.0	5	8	0	1	0	0	3	30	2	62	2	0	0
07232500	364317	1012921	2,504.4	5	21	0	0.2	0.1	0.8	2	67.9	1.6	27.2	0.3	0	0
AT232500	364220	1013811	2,269.0	5	11	0	0	0	1	2	68	2	27	0	0	0
07154500	365536	1025731	1,224.7	5	7	0	0.1	0	21.7	10.6	67.2	0.1	0.2	0	0	0