Water-Data Report 2012

# 07249455 ARKANSAS RIVER NEAR FORT SMITH, AR

Robert S. Kerr Reservoir Basin
Robert S. Kerr Reservoir Subbasin

LOCATION.--Lat 35°23′30″, long 94°25′56″ referenced to North American Datum of 1927, in NW ¼ SW ¼ sec.8, T.8 N., R.32 E., Sebastian County, AR, Hydrologic Unit 11110104, at U.S. Highway 64 bridge at Oklahoma and Arkansas state line, .7 mi downstream from Poteau River, 6.6 mi upstream from Lee Creek, 8.0 mi upstream from Arkansas River at Van Buren, and at mile 324.5.

DRAINAGE AREA.--145,940 $mi^2$ of which 16,285 $mi^2$ probably is noncontributing, revised. From automated delineation using 10-meter National Elevation Dataset digital elevation model data dated 10/01/2006 and Watershed Boundary Dataset dated 10/01/2006, using Albers Equal-Area Projection, North American Datum 1983.

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1997 to current year. Some data collected prior to period of record and are available in the district office.

REVISED RECORDS.--WDR 2012: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 380.24 ft above NGVD of 1929.

REMARKS.--Records fair, except for discharges less than 3,000 $ft^3/s$ which are poor. Flow regulated by W.D. Mayo Lock and Dam 14 upstream and J.W. Trimble Lock and Dam 13 downstream.



Suggested citation: U.S. Geological Survey, 2013, Water-resources data for the United States, Water Year 2012: U.S. Geological Survey Water-Data Report WDR-US-2012, site 07249455, accessed at http://wdr.water.usgs.gov/wy2012/pdfs/07249455.2012.pdf

**07249455 ARKANSAS RIVER NEAR FORT SMITH, AR—Continued**

**DISCHARGE, CUBIC FEET PER SECOND**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
**DAILY MEAN VALUES**

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 544 | 1,150 | 11,200 | 14,900 | 9,050 | 6,320 | 97,900 | 42,100 | 8,800 | 4,560 | 3,320 | 1,880 |
| 2 | 473 | 2,180 | 15,100 | 1,360 | 14,400 | 7,170 | 95,300 | 67,800 | 3,290 | 6,350 | 4,860 | 454 |
| 3 | 4,180 | 3,830 | 10,800 | 9,680 | 14,700 | 7,890 | 76,600 | 93,700 | 8,670 | 1,720 | 2,760 | 640 |
| 4 | 359 | 5,810 | 12,600 | 7,140 | 41,200 | 15,300 | 75,600 | 100,000 | 18,200 | 2,650 | 3,320 | 2,930 |
| 5 | 854 | 651 | 21,000 | 10,900 | 25,800 | 4,260 | 63,300 | 103,000 | 21,100 | 4,680 | 1,960 | 3,210 |
| 6 | 1,460 | 562 | 16,100 | 6,470 | 31,600 | 5,450 | 57,600 | 92,500 | 13,100 | 4,210 | 1,380 | 2,380 |
| 7 | 634 | 3,640 | 14,400 | 2,270 | 22,900 | 3,810 | 68,100 | 73,200 | 657 | 1,980 | 2,100 | 1,030 |
| 8 | 626 | 32,300 | 9,400 | 4,540 | 35,600 | 22,700 | 67,800 | 67,200 | 8,180 | 4,640 | 369 | 1,700 |
| 9 | 433 | 31,800 | 14,400 | 8,620 | 41,900 | 9,690 | 57,000 | 62,100 | 1,720 | 2,660 | 6,320 | 940 |
| 10 | 385 | 6,930 | 7,950 | 8,130 | 48,200 | 17,600 | 66,800 | 59,900 | 1,390 | 5,050 | 108 | 127 |
| 11 | 702 | 8,860 | 12,600 | 19,200 | 42,000 | 5,340 | 68,800 | 51,000 | 8,750 | 5,680 | 138 | 1,390 |
| 12 | 842 | 4,400 | 15,200 | 12,700 | 35,700 | 22,700 | 44,700 | 49,000 | 1,950 | 2,470 | 1,060 | 2,320 |
| 13 | 1,140 | 161 | 15,500 | 13,300 | 31,000 | 23,100 | 50,200 | 40,400 | 3,910 | 4,030 | 1,600 | 893 |
| 14 | 1,120 | 8,850 | 12,500 | 2,090 | 30,000 | 20,600 | 40,100 | 36,900 | 4,140 | 2,270 | 95 | 2,370 |
| 15 | 285 | 4,310 | 18,100 | 7,130 | 39,700 | 31,800 | 60,900 | 40,500 | 5,920 | 2,610 | 114 | 1,040 |
| 16 | 622 | 10,400 | 22,400 | 6,510 | 17,600 | 30,700 | 71,500 | 32,700 | 4,460 | 4,130 | 1,560 | 826 |
| 17 | 3,090 | 8,490 | 10,600 | 10,900 | 24,700 | 31,300 | 63,300 | 28,300 | 463 | 2,110 | 167 | 5,920 |
| 18 | 1,190 | 8,580 | 15,900 | 4,910 | 20,600 | 27,000 | 57,400 | 28,300 | 11,000 | 3,880 | 3,180 | 3,240 |
| 19 | 2,770 | 849 | 17,100 | 5,470 | 14,500 | 26,200 | 72,600 | 30,000 | 1,390 | 2,190 | 1,870 | 6,900 |
| 20 | 4,560 | 9,600 | 23,200 | 12,000 | 14,300 | 127,000 | 61,400 | 37,500 | 5,730 | 8,880 | 1,240 | 4,240 |
| 21 | 548 | 16,100 | 24,000 | 3,270 | 17,600 | 175,000 | 60,200 | 12,700 | 4,690 | 785 | 2,730 | 1,770 |
| 22 | 859 | 27,400 | 19,900 | 470 | 18,800 | 133,000 | 53,400 | 15,500 | 5,370 | 6,890 | 1,250 | 1,930 |
| 23 | 2,640 | 28,400 | 41,200 | 6,090 | 15,400 | 135,000 | 40,500 | 12,600 | 3,030 | 2,780 | 228 | 963 |
| 24 | 7,990 | 17,600 | 36,100 | 6,650 | 14,100 | 120,000 | 43,300 | 16,600 | 5,420 | 3,290 | 31 | 1,520 |
| 25 | 8,430 | 15,600 | 37,100 | 60,700 | 16,800 | 125,000 | 46,500 | 14,900 | 1,800 | 3,690 | 3,070 | 1,800 |
| 26 | 3,820 | 16,300 | 25,800 | 46,400 | 7,140 | 132,000 | 27,200 | 24,900 | 5,500 | 3,770 | 6,210 | 3,410 |
| 27 | 8,030 | 31,600 | 32,400 | 37,600 | 14,600 | 127,000 | 28,600 | 11,000 | 2,180 | 291 | 6,870 | 2,530 |
| 28 | 3,010 | 16,900 | 24,300 | 23,100 | 10,600 | 135,000 | 18,800 | 13,200 | 6,320 | 2,960 | 3,430 | 1,590 |
| 29 | 2,870 | 16,800 | 18,700 | 5,550 | 26,800 | 132,000 | 19,800 | 16,200 | 7,860 | 4,040 | 1,330 | 3,010 |
| 30 | 2,270 | 13,900 | 11,800 | 8,250 | --- | 128,000 | 13,800 | 5,810 | 7,110 | 4,360 | 1,010 | 3,020 |
| 31 | 3,210 | --- | 6,840 | 19,100 | --- | 112,000 | --- | 9,140 | --- | 3,200 | 5,960 | --- |
| Total | 69,946 | 353,953 | 574,190 | 385,400 | 697,290 | 1,899,930 | 1,669,000 | 1,288,650 | 182,100 | 112,806 | 69,640 | 65,973 |
| Mean | 2,256 | 11,800 | 18,520 | 12,430 | 24,040 | 61,290 | 55,630 | 41,570 | 6,070 | 3,639 | 2,246 | 2,199 |
| Max | 8,430 | 32,300 | 41,200 | 60,700 | 48,200 | 175,000 | 97,900 | 103,000 | 21,100 | 8,880 | 6,870 | 6,900 |
| Min | 285 | 161 | 6,840 | 470 | 7,140 | 3,810 | 13,800 | 5,810 | 463 | 291 | 31 | 127 |
| Ac-ft | 138,700 | 702,100 | 1,139,000 | 764,400 | 1,383,000 | 3,769,000 | 3,310,000 | 2,556,000 | 361,200 | 223,800 | 138,100 | 130,900 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2012, BY WATER YEAR (WY)**

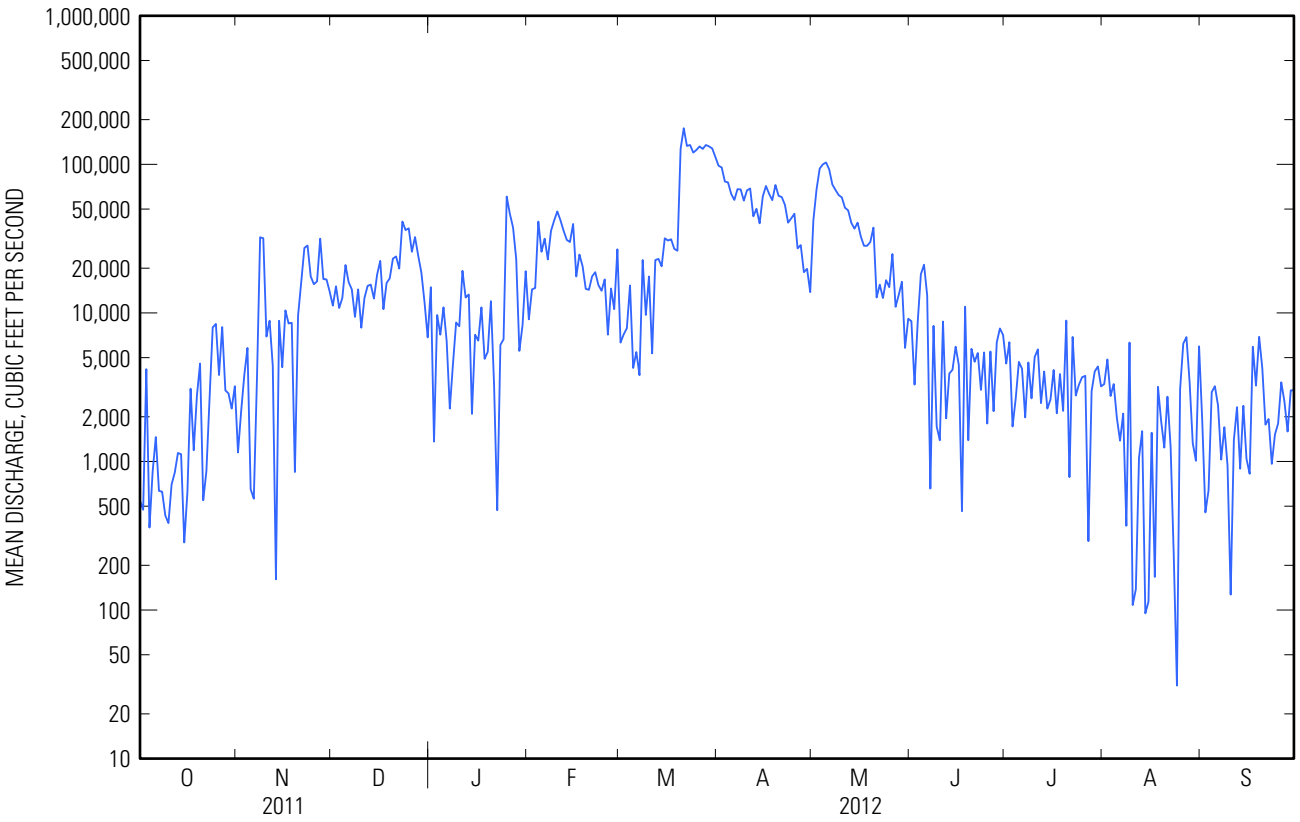
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 21,440 | 22,300 | 20,740 | 30,690 | 33,410 | 53,560 | 55,580 | 68,850 | 56,020 | 45,910 | 20,660 | 17,410 |
| Max | 83,650 | 104,200 | 53,480 | 128,800 | 78,150 | 108,500 | 140,200 | 149,800 | 128,100 | 178,500 | 75,520 | 60,920 |
| (WY) | (2010) | (1999) | (1999) | (1998) | (2001) | (2008) | (2008) | (1999) | (2008) | (2007) | (2007) | (2008) |
| Min | 2,256 | 3,936 | 2,463 | 2,380 | 3,572 | 3,952 | 4,332 | 18,650 | 6,070 | 3,631 | 2,246 | 2,199 |
| (WY) | (2012) | (2000) | (2006) | (2006) | (2006) | (2006) | (2006) | (2005) | (2012) | (2011) | (2012) | (2012) |

**07249455 ARKANSAS RIVER NEAR FORT SMITH, AR—Continued**

**SUMMARY STATISTICS**

| | Calendar Year 2011 | | Water Year 2012 | | Water Years 1997 - 2012 | |
|---|---|---|---|---|---|---|
| **Annual total** | 7,529,648 | | 7,368,878 | | | |
| **Annual mean** | 20,630 | | 20,130 | | 37,460 | |
| **Highest annual mean** | | | | | 73,680 | 1999 |
| **Lowest annual mean** | | | | | 7,180 | 2006 |
| **Highest daily mean** | 204,000 | Apr 26 | 175,000 | Mar 21 | 222,000 | Jul 14, 2007 |
| **Lowest daily mean** | [a]-107 | Jul 17 | 31 | Aug 24 | -561 | Feb 8, 2009 |
| **Annual seven-day minimum** | 679 | Oct 4 | 668 | Aug 10 | 594 | Mar 2, 2006 |
| **Maximum peak flow** | | | 186,000 | Mar 21 | 236,000 | Jul 14, 2007[b] |
| **Maximum peak stage** | | | 21.86 | Mar 21 | 26.42 | Apr 10, 2008 |
| **Annual runoff (ac-ft)** | 14,940,000 | | 14,620,000 | | 27,140,000 | |
| **10 percent exceeds** | 59,100 | | 60,000 | | 102,000 | |
| **50 percent exceeds** | 8,160 | | 8,220 | | 21,700 | |
| **90 percent exceeds** | 862 | | 926 | | 3,340 | |

[a] Estimated.
[b] Also occurred March 19, 2008 and April 11, 2008.



**07249455 ARKANSAS RIVER NEAR FORT SMITH, AR—Continued**

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1996 to current year.

REMARKS.--Samples collected bimonthly. Specific conductance, pH, water temperature, turbidity and dissolved oxygen were determined in the field.

### WATER-QUALITY DATA
### WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 1 of 4

[%, percent; FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than; E, estimated]

| Date | Sample start time | Barometric pressure, mm Hg (00025) | Temperature, air, °C (00020) | Discharge, instantaneous, ft³/s (00061) | Dissolved oxygen, water, unfiltered, mg/L (00300) | Dissolved oxygen, water, unfiltered, % saturation (00301) | pH, water, unfiltered, field, standard units (00400) | Specific conductance, water, unfiltered, µS/cm at 25°C (00095) | Temperature, water, °C (00010) |
|---|---|---|---|---|---|---|---|---|---|
| **10-12-2011** | **1100** | 752 | 19.6 | 324 | 8.2 | 95 | 8.2 | 720 | 22.0 |
| **12-28-2011** | **1400** | 760.000 | 13.7 | 20,900 | 12.8 | 107 | 8.2 | 241 | 7.8 |
| **02-29-2012** | **1230** | 759 | -- | 39,100 | 12.4 | 113 | 7.9 | 902 | 11.1 |
| **04-25-2012** | **1200** | -- | -- | 46,700 | 10.5 | -- | 8.1 | 849 | 19.1 |
| **06-28-2012** | **1230** | 760 | 39.0 | 857 | 7.7 | 104 | 8.4 | 554 | 31.1 |
| **08-28-2012** | **1300** | 757 | 31.7 | 2,710 | 8.7 | 114 | 8.2 | 641 | 28.8 |

### WATER-QUALITY DATA
### WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 2 of 4

[%, percent; FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than; E, estimated]

| Date | Sample start time | Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676) | Turbidity, water, unfiltered, monochrome near infrared LED light, 780-900 nm, detection angle 90 +/- 2.5 degrees, FNU (63680) | Chloride, water, filtered, mg/L (00940) | Sulfate, water, filtered, mg/L (00945) | Ammonia plus organic nitrogen, water, unfiltered, mg/L as N (00625) | Ammonia, water, filtered, mg/L as NH4 (71846) | Ammonia, water, filtered, mg/L as N (00608) | Nitrate plus nitrite, water, filtered, mg/L as N (00631) |
|---|---|---|---|---|---|---|---|---|---|
| **10-12-2011** | **1100** | E 7.49 | 5.0 | 121 | 46.3 | .477 | < .013 | < .01 | < .008 |
| **12-28-2011** | **1400** | 20.6 | 22 | 48.0 | 28.2 | .499 | .030 | .0233 | .661 |
| **02-29-2012** | **1230** | 24.0 | 23 | 180 | 59.1 | .489 | .023 | .0178 | .704 |
| **04-25-2012** | **1200** | 36.2 | 32 | 168 | 54.0 | .657 | .014 | .0107 | .629 |
| **06-28-2012** | **1230** | E 8.78 | 20 | 79.3 | 40.2 | .437 | .020 | .0155 | .017 |
| **08-28-2012** | **1300** | E 11.1 | 7.1 | 101 | 39.4 | .655 | < .013 | < .010 | < .01 |

**07249455 ARKANSAS RIVER NEAR FORT SMITH, AR—Continued**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 3 of 4

[%, percent; FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than; E, estimated]

| Date | Sample start time | Nitrate, water, filtered, mg/L (71851) | Nitrate, water, filtered, mg/L as N (00618) | Nitrite, water, filtered, mg/L (71856) | Nitrite, water, filtered, mg/L as N (00613) | Organic nitrogen, water, unfiltered, mg/L (00605) | Orthophosphate, water, filtered, mg/L (00660) | Orthophosphate, water, filtered, mg/L as P (00671) | Phosphorus, water, filtered, mg/L as P (00666) |
|---|---|---|---|---|---|---|---|---|---|
| **10-12-2011** | **1100** | < .035 | < .008 | < .003 | < .001 | < .48 | .226 | .0737 | .0810 |
| **12-28-2011** | **1400** | 2.90 | .655 | .019 | .00573 | .48 | .153 | .0498 | .0557 |
| **02-29-2012** | **1230** | 3.09 | .699 | .017 | .00512 | .47 | .171 | .0557 | .0678 |
| **04-25-2012** | **1200** | 2.74 | .618 | .037 | .0112 | .65 | .125 | .0406 | .0484 |
| **06-28-2012** | **1230** | .069 | .016 | .006 | .00177 | .42 | .136 | .0444 | .0557 |
| **08-28-2012** | **1300** | < .044 | < .010 | < .003 | < .0010 | < .66 | .285 | .0928 | .103 |

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
Part 4 of 4

[%, percent; FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than; E, estimated]

| Date | Sample start time | Phosphorus, water, unfiltered, mg/L as P (00665) | Total nitrogen, water, unfiltered, mg/L (00600) | Suspended sediment, sieve diameter, percent smaller than 0.0625 mm (70331) | Suspended sediment concentration, mg/L (80154) | Suspended sediment discharge, tons per day (80155) |
|---|---|---|---|---|---|---|
| **10-12-2011** | **1100** | .118 | < .49 | 88 | 7 | 6.1 |
| **12-28-2011** | **1400** | .104 | 1.2 | 82 | 22 | 1,240 |
| **02-29-2012** | **1230** | .119 | 1.2 | 86 | 27 | 2,850 |
| **04-25-2012** | **1200** | .482 | 1.3 | -- | -- | -- |
| **06-28-2012** | **1230** | .086 | .45 | 73 | 11 | 25 |
| **08-28-2012** | **1300** | .158 | < .67 | 65 | 21 | 154 |