Water-Data Report 2013

07195500 ILLINOIS RIVER NEAR WATTS, OK

Robert S. Kerr Reservoir Basin
Illinois Subbasin

LOCATION.--Lat 36°07′48″, long 94°34′19″ referenced to North American Datum of 1927, in NW ¼ NE ¼ sec.18, T.19 N., R.26 E., Adair County, OK, Hydrologic Unit 11110103, near the downstream side of right abutment of U.S. Highway 59 bridge, 1.5 mi north of Watts, 4.5 mi downstream from Cincinnati Creek, and at mile 106.2.

DRAINAGE AREA.--630 mi^2, 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.--August 1955 to current year.

REVISED RECORDS.--WDR 2012: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 893.78 ft above NGVD of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Since July 2, 1957, small diversion for municipal water supply for the city of Siloam Springs, Ark., upstream from station. U.S. Army Corps of Engineers' satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,500 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 19	0100	16,100	16.96
May 10	1900	*20,900	*18.77
May 22	1100	8,110	11.41
Aug 9	0200	10,600	13.08

Suggested citation: U.S. Geological Survey, 2014, Water-resources data for the United States, Water Year 2013: U.S. Geological Survey Water-Data Report WDR-US-2013, site 07195500, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/07195500.2013.pdf

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	130	143	116	195	583	392	1,150	943	1,440	225	802	e218
2	128	141	117	222	441	351	890	804	1,320	223	413	e211
3	127	139	110	184	358	314	1,320	806	988	221	497	e206
4	124	134	153	168	310	290	1,170	941	849	217	1,950	203
5	125	128	432	159	285	281	982	938	775	211	702	202
6	130	128	248	149	265	267	807	793	868	205	489	198
7	141	132	194	139	247	251	694	694	724	198	392	192
8	134	133	171	135	235	242	618	626	634	192	2,410	185
9	129	133	157	139	239	237	599	602	570	191	4,530	179
10	130	e138	145	138	234	1,760	562	11,500	520	187	1,400	177
11	126	e146	141	139	361	3,010	1,670	5,590	486	183	895	176
12	141	157	137	140	342	1,520	1,170	2,450	458	181	693	175
13	499	185	131	151	314	1,090	868	1,740	428	178	904	176
14	525	165	129	155	329	857	722	1,360	401	171	1,570	171
15	575	153	132	151	307	719	641	1,150	378	165	916	167
16	327	145	129	148	281	630	579	1,250	373	174	688	164
17	253	140	125	144	257	553	527	1,070	377	198	579	167
18	223	132	124	140	e243	512	3,690	909	404	207	502	167
19	200	127	125	135	239	476	7,160	803	371	183	445	166
20	187	128	128	130	246	432	2,180	732	350	176	409	543
21	173	131	142	125	250	391	1,540	1,630	327	175	375	744
22	158	127	135	123	465	424	1,210	5,940	312	174	350	347
23	161	126	126	125	448	668	1,000	2,520	297	179	328	261
24	160	117	123	122	372	565	869	1,680	285	243	308	231
25	157	114	119	123	335	500	762	1,290	276	430	289	215
26	154	113	115	121	368	451	696	1,070	267	280	273	204
27	153	114	113	118	510	409	2,170	915	259	312	264	192
28	148	117	117	113	447	380	2,280	810	254	296	256	201
29	143	118	118	128	---	458	1,480	732	247	230	248	383
30	141	118	116	1,780	---	1,110	1,160	714	233	253	e234	337
31	145	---	119	988	---	1,470	---	1,990	---	1,050	e225	---
Total	6,047	4,022	4,487	6,927	9,311	21,010	41,166	54,992	15,471	7,508	24,336	7,158
Mean	195	134	145	223	333	678	1,372	1,774	516	242	785	239
Max	575	185	432	1,780	583	3,010	7,160	11,500	1,440	1,050	4,530	744
Min	124	113	110	113	234	237	527	602	233	165	225	164
Ac-ft	11,990	7,980	8,900	13,740	18,470	41,670	81,650	109,100	30,690	14,890	48,270	14,200
Cfsm	0.31	0.21	0.23	0.35	0.53	1.08	2.18	2.82	0.82	0.38	1.25	0.38
In.	0.36	0.24	0.26	0.41	0.55	1.24	2.43	3.25	0.91	0.44	1.44	0.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	371	621	640	595	704	972	1,116	1,025	663	385	252	317
Max	2,734	3,087	2,786	2,396	2,361	3,157	5,280	4,286	3,552	1,807	1,172	1,690
(WY)	(1987)	(1974)	(1988)	(2005)	(2001)	(2008)	(2011)	(1961)	(2000)	(1958)	(1961)	(2008)
Min	20.9	65.6	60.4	61.4	75.1	114	176	144	113	50.7	33.2	14.9
(WY)	(1957)	(1964)	(1956)	(1956)	(1964)	(1956)	(1963)	(1977)	(1963)	(1964)	(1956)	(1956)

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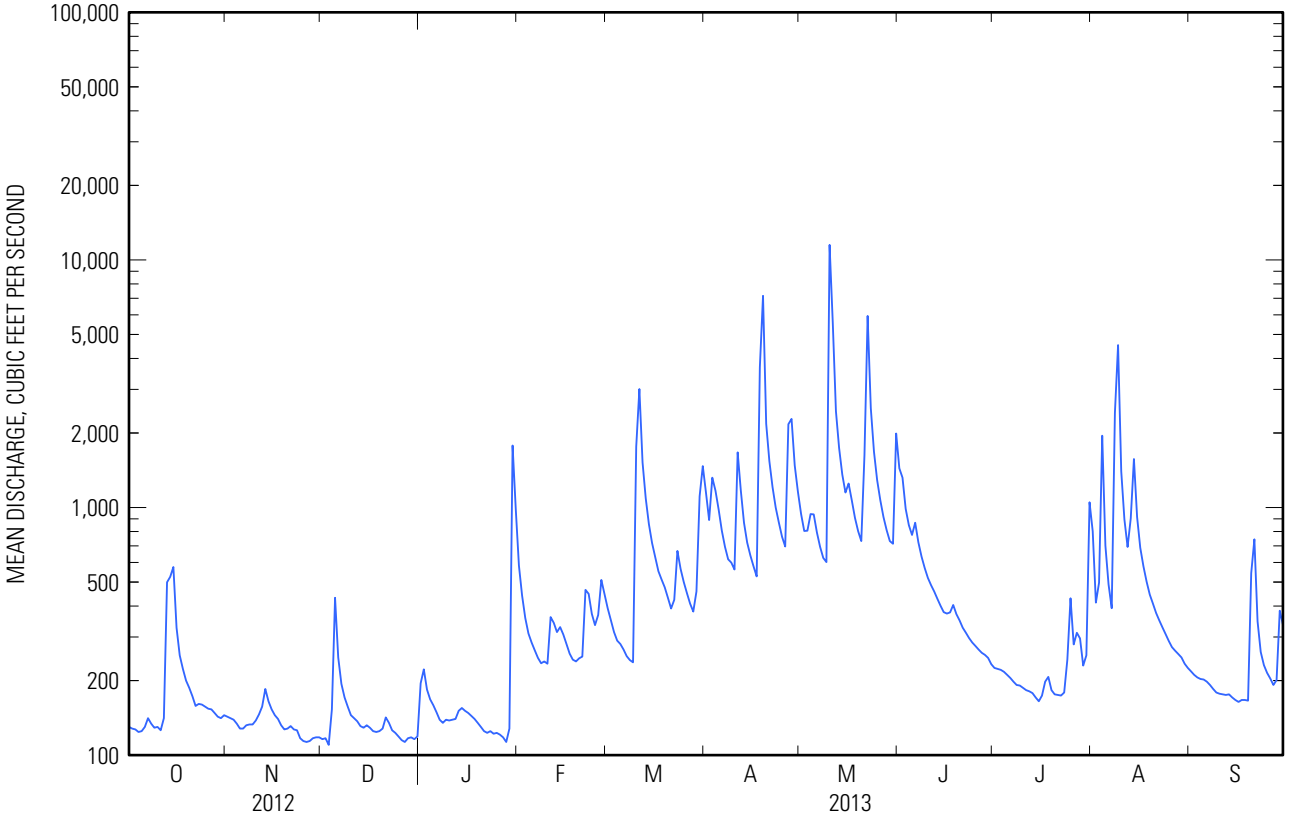
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1956 - 2013	
Annual total	122,890		202,435			
Annual mean	336		555		637	
Highest annual mean					1,247	1993
Lowest annual mean					151	1964
Highest daily mean	[a] 6,470	Mar 21	11,500	May 10	53,100	Apr 25, 2011
Lowest daily mean	71	Aug 4	110	Dec 3	10	Sep 19, 1956
Annual seven-day minimum	73	Aug 1	116	Nov 25	11	Sep 22, 1956
Maximum peak flow			20,900	May 10	97,400	Apr 26, 2011
Maximum peak stage			18.77	May 10	28.60	Apr 26, 2011
Annual runoff (ac-ft)	243,800		401,500		461,800	
Annual runoff (cfsm)	0.533		0.880		1.01	
Annual runoff (inches)	7.26		11.95		13.75	
10 percent exceeds	567		1,160		1,260	
50 percent exceeds	171		254		299	
90 percent exceeds	99		127		107	

[a] Estimated.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1989 to July 1995, July 1996 to current year.

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

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 1 of 4

[%, percent; FNU, Formazin nephelometric units; LED, light-emitting diode; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; P, phosphorus; ft^3/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; >, greater than; E, estimated]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Discharge, instantaneous, ft^3/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)
10-02-2012	**1100**	740	23.5	128	9.2	104	7.8	394	20.2
12-03-2012	**1245**	735	24.4	E 109	10.4	107	8.1	395	14.8
12-05-2012	**1415**	743	21.2	460	10.4	101	7.8	386	13.1
01-30-2013	**1345**	729	4.2	2,980	10.2	98	7.7	249	12.0
02-06-2013	**1215**	737	21.2	264	11.1	99	7.9	356	9.1
03-11-2013	**1245**	730	7.1	2,600	11.2	102	7.6	212	9.4
04-16-2013	**1030**	734	18.4	585	9.4	100	7.6	301	16.5
04-19-2013	**1200**	--	--	4,580	9.8	--	7.5	195	13.0
05-10-2013	**1630**	737	21.3	18,600	7.2	78	7.3	130	17.5
05-22-2013	**1230**	726	25.6	7,620	8.5	94	7.2	166	17.7
06-11-2013	**1045**	750	30.4	489	8.2	98	7.6	313	23.2
06-25-2013	**1115**	740	29.8	277	7.6	99	7.9	347	27.5
08-09-2013	**1100**	--	--	3,040	8.2	--	7.3	213	23.7
08-21-2013	**1100**	761	29.4	379	8.5	100	7.7	329	23.7

07195500 ILLINOIS RIVER NEAR WATTS, OK—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 2 of 4

[%, percent; FNU, Formazin nephelometric units; LED, light-emitting diode; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; 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; >, greater than; E, estimated]

Date	Sample start time	Turbidity, water, unfiltered, monochrome near infrared LED light, 780-900 nm, detection angle 90 +/- 2.5 degrees, FNU (63680)	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)	Nitrate, water, filtered, mg/L (71851)	Nitrate, water, filtered, mg/L as N (00618)	Nitrite, water, filtered, mg/L (71856)
10-02-2012	**1100**	7.4	0.143	0.033	0.0255	1.75	7.73	1.75	0.019
12-03-2012	**1245**	4.0	.232	< .013	< .010	1.92	8.48	1.92	.019
12-05-2012	**1415**	6.2	.289	< .013	< .010	2.39	10.6	2.39	.018
01-30-2013	**1345**	220	1.55	.083	.0647	1.78	7.83	1.77	.048
02-06-2013	**1215**	4.3	.217	< .013	< .010	3.40	15.0	3.40	.021
03-11-2013	**1245**	55	.949	.063	.0489	2.54	11.2	2.53	.032
04-16-2013	**1030**	8.8	.267	.023	.0178	2.72	12.0	2.71	.024
04-19-2013	**1200**	85	.994	.050	.0392	2.30	10.1	2.29	.027
05-10-2013	**1630**	320	2.13	.079	.0615	.950	4.15	.938	.040
05-22-2013	**1230**	110	1.21	.049	.0378	1.11	4.89	1.10	.023
06-11-2013	**1045**	8.3	.199	.014	.0105	2.73	12.1	2.72	.014
06-25-2013	**1115**	12	.250	.028	.0214	2.43	10.7	2.43	.022
08-09-2013	**1100**	96	.935	.026	.0205	1.72	7.57	1.71	.027
08-21-2013	**1100**	6.2	.194	< .013	< .010	2.69	11.9	2.68	.011

07195500 ILLINOIS RIVER NEAR WATTS, OK—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 3 of 4

[%, percent; FNU, Formazin nephelometric units; LED, light-emitting diode; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; P, phosphorus; ft^3/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; >, greater than; E, estimated]

Date	Sample start time	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)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, unfiltered, mg/L (00600)	Enterococci, Defined Substrate Technology, water, MPN/100 mL (99601)
10-02-2012	**1100**	0.00582	0.12	0.224	0.0732	0.0724	0.0883	1.9	15
12-03-2012	**1245**	.00593	< .23	.044	.0145	.0201	.0338	2.2	6
12-05-2012	**1415**	.0056	< .29	.129	.0420	.0506	.0706	2.7	170
01-30-2013	**1345**	.0147	1.5	.262	.0853	.0994	.548	3.3	> 4,800
02-06-2013	**1215**	.00628	< .22	.120	.0393	.0443	.0555	3.6	15
03-11-2013	**1245**	.00975	.90	.309	.101	.118	.239	3.5	1,200
04-16-2013	**1030**	.00728	.25	.104	.0339	.0385	.0592	3.0	6
04-19-2013	**1200**	.00834	.95	.350	.114	.131	.311	3.3	--
05-10-2013	**1630**	.0121	2.1	.816	.266	.295	.855	3.1	> 4,800
05-22-2013	**1230**	.00694	1.2	.582	.190	.207	.443	2.3	> 4,800
06-11-2013	**1045**	.00412	.19	.129	.0422	.0452	.0575	2.9	20
06-25-2013	**1115**	.00664	.23	.187	.0608	.0600	.0970	2.7	2
08-09-2013	**1100**	.0082	.91	.444	.145	.164	.362	2.7	> 4,800
08-21-2013	**1100**	.00338	< .19	.172	.0561	.0579	.0696	2.9	32

07195500 ILLINOIS RIVER NEAR WATTS, OK—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 4 of 4

[%, percent; FNU, Formazin nephelometric units; LED, light-emitting diode; MPN/100 mL, most probable number per 100 milliliters; N, nitrogen; 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; >, greater than; E, estimated]

Date	Sample start time	Escherichia coli, Defined Substrate Technology, water, MPN/100 mL (50468)	Total coliform, Defined Substrate Technology, water, MPN/100 mL (50569)	Suspended sediment, sieve diameter, percent smaller than 0.0625 mm (70331)	Suspended sediment concentration, mg/L (80154)	Suspended sediment discharge, tons per day (80155)
10-02-2012	**1100**	< 10	9,300	94	9	3.1
12-03-2012	**1245**	< 10	1,600	94	4	E 1.2
12-05-2012	**1415**	520	5,500	88	12	15
01-30-2013	**1345**	11,000	52,000	98	380	3,060
02-06-2013	**1215**	20	420	96	6	4.3
03-11-2013	**1245**	2,000	17,000	99	73	512
04-16-2013	**1030**	20	1,700	98	12	19
04-19-2013	**1200**	5,800	120,000	88	156	1,930
05-10-2013	**1630**	19,000	140,000	96	559	28,000
05-22-2013	**1230**	6,900	> 240,000	96	167	3,440
06-11-2013	**1045**	10	3,800	88	13	17
06-25-2013	**1115**	< 10	9,300	86	42	31
08-09-2013	**1100**	1,900	> 240,000	100	129	1,060
08-21-2013	**1100**	10	9,600	100	9	9.2