Water-Data Report 2012

09498500 SALT RIVER NEAR ROOSEVELT, AZ

Salt Basin
Upper Salt Subbasin

LOCATION.--Lat 33°37′10″, long 110°55′15″ referenced to North American Datum of 1927, in SE ¼ NE ¼ sec.9, T.3 N., R.14 E., Gila County, AZ, Hydrologic Unit 15060103, (unsurveyed), in Tonto National Forest on left bank 100 ft downstream from bridge on State Highway 288, 0.3 mi downstream from Pinal Creek, 1 mi upstream from diversion dam for power canal, 14 mi east of village of Roosevelt, and 17 mi upstream from Roosevelt Dam.

DRAINAGE AREA.--4,306 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Jan. 1913 to current year (monthly discharge only Jan. to Sept. 1913, published in WSP 1313).

REVISED RECORDS.--WSP 1049: 1914, 1916, 1918-19, 1926. WSP 1343: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,177.14 ft above sea level. Prior to 1925, nonrecording gage at diversion dam about 1 mi downstream at different datum. Nonrecording gage at present site and datum 1925 to Jan. 17, 1935. May 20, 1955, to July 30, 1959, supplementary water-stage recorder at diversion dam.

REMARKS.--Records good except for estimated discharges, which are poor. Several small diversions for irrigation of about 4,000 acres above station and two transbasin diversions above station, one into basin from Show Low Creek and one out of basin to Willow Creek. Records show inflow to Roosevelt Lake. Tonto Creek also contributes to Roosevelt Lake, see records elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 143,000 ft^3/s, Jan. 8, 1993, gage height, 30.09 ft, from rating curve extended above 108,000 ft^3/s; minimum discharge, 59 ft^3/s all or part of each day, July 1-4, 7-12, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of about 42 ft^3/s was reported Aug. 5, 1911.

EXTREMES FOR CURRENT YEAR.--Peak discharges, maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 22	1530	*1,680	*8.73

Minimum daily discharge, 80 ft^3/s, July 2.

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 09498500, accessed at http://wdr.water.usgs.gov/wy2012/pdfs/09498500.2012.pdf

09498500 SALT RIVER NEAR ROOSEVELT, AZ—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	148	137	171	229	282	415	905	359	102	81	171	292
2	146	134	177	239	285	414	881	329	99	80	152	260
3	146	134	214	246	287	404	849	305	96	81	131	225
4	148	135	250	252	284	415	790	295	94	82	120	200
5	150	146	227	262	280	390	718	282	94	83	114	188
6	174	163	200	267	273	380	658	264	93	113	108	242
7	343	167	184	268	265	392	628	252	91	96	103	183
8	291	180	177	266	264	421	606	240	91	92	102	174
9	286	169	155	264	263	472	583	231	89	104	104	195
10	245	169	145	262	259	488	568	230	88	102	100	241
11	230	163	151	259	259	464	568	228	88	103	96	234
12	213	161	169	253	262	434	576	217	87	106	93	237
13	201	159	208	246	264	414	577	203	87	103	91	273
14	189	166	299	244	283	403	568	194	87	101	94	307
15	180	163	306	237	309	428	548	187	88	99	95	256
16	172	165	303	233	312	493	526	175	87	97	98	271
17	169	176	274	239	308	556	511	165	87	156	163	281
18	163	168	239	750	305	664	499	158	87	140	169	232
19	159	168	240	502	302	799	487	152	85	136	126	200
20	153	167	385	387	297	770	455	144	85	128	170	180
21	151	165	533	338	293	e660	427	139	84	118	264	165
22	150	161	488	310	292	e620	410	135	85	116	634	146
23	146	160	408	302	289	585	407	129	86	113	539	131
24	142	161	357	299	283	700	421	125	86	155	586	126
25	142	165	310	296	283	973	435	119	85	342	466	122
26	141	162	270	292	291	1,180	446	113	84	211	528	119
27	142	155	234	290	315	1,300	450	110	84	187	444	117
28	142	160	214	282	343	1,270	446	107	84	171	423	114
29	140	177	209	273	382	1,120	422	106	84	254	387	113
30	140	176	206	275	---	1,020	388	106	83	321	332	112
31	139	---	211	282	---	952	---	105	---	210	301	---
Total	5,481	4,832	7,914	9,144	8,414	19,996	16,753	5,904	2,650	4,281	7,304	5,936
Mean	177	161	255	295	290	645	558	190	88.3	138	236	198
Max	343	180	533	750	382	1,300	905	359	102	342	634	307
Min	139	134	145	229	259	380	388	105	83	80	91	112
Med	151	163	227	267	285	493	537	175	87	113	152	197
Ac-ft	10,870	9,580	15,700	18,140	16,690	39,660	33,230	11,710	5,260	8,490	14,490	11,770
Cfsm	0.04	0.04	0.06	0.07	0.07	0.15	0.13	0.04	0.02	0.03	0.05	0.05

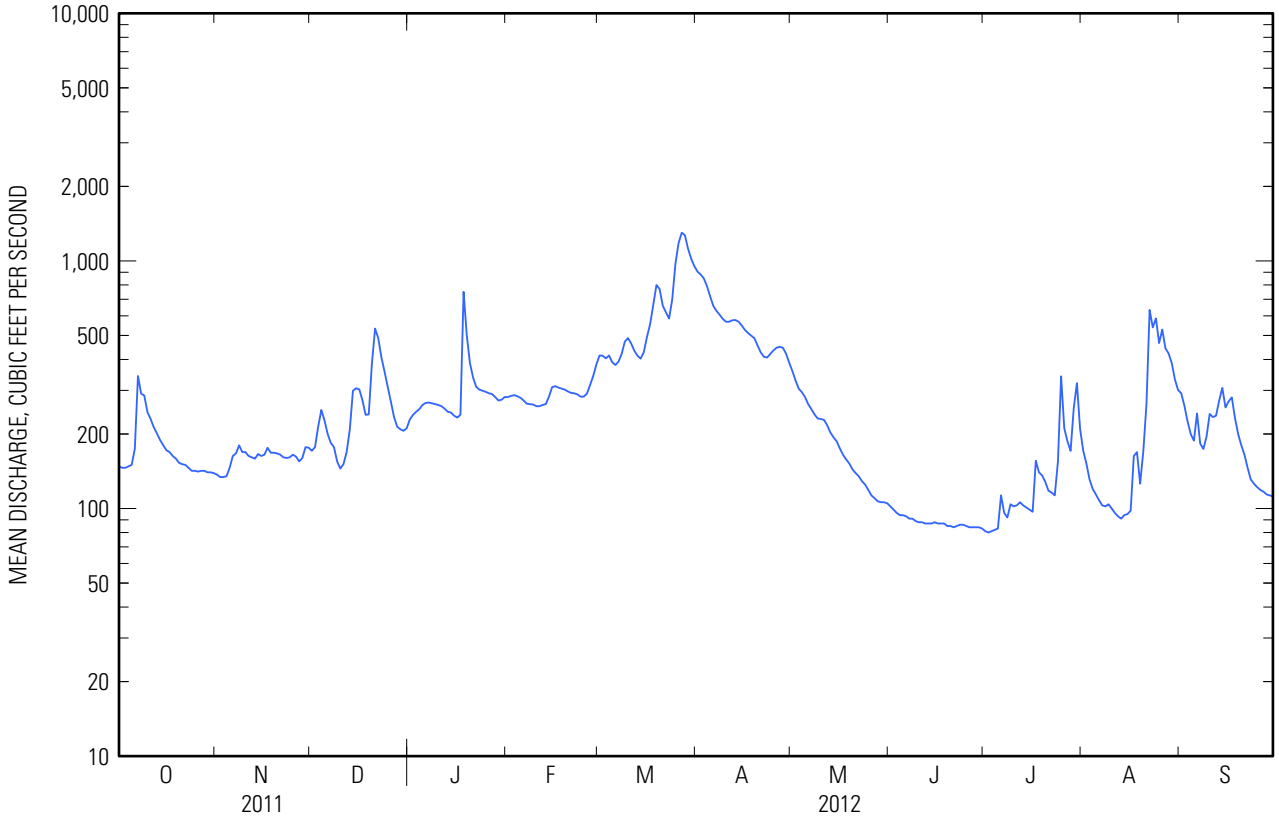
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	406	365	724	1,090	1,377	1,941	1,897	972	343	318	586	441
Max	4,832	2,150	6,327	15,990	9,072	10,390	6,281	5,933	1,365	3,276	3,607	1,852
(WY)	(1984)	(1920)	(1966)	(1916)	(1980)	(1978)	(1979)	(1973)	(1941)	(1919)	(1921)	(1923)
Min	85.5	122	127	161	161	179	164	110	74.6	78.3	119	77.9
(WY)	(1957)	(1957)	(1957)	(1964)	(2006)	(2002)	(2002)	(2002)	(2002)	(1963)	(2009)	(1956)

09498500 SALT RIVER NEAR ROOSEVELT, AZ—Continued

SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1914 - 2012	
Annual total	83,884		98,609			
Annual mean	230		269		869	
Highest annual mean					3,252	1916
Lowest annual mean					191	2000
Highest daily mean	1,090	Aug 21	1,300	Mar 27	91,000	Jan 19, 1916
Lowest daily mean	83	Jul 1	80	Jul 2	59	Jul 4, 1955
Annual seven-day minimum	83	Jun 29	82	Jun 29	62	Jul 2, 1955
Annual runoff (ac-ft)	166,400		195,600		629,500	
Annual runoff (cfsm)	0.053		0.063		0.202	
10 percent exceeds	373		527		1,970	
50 percent exceeds	208		214		319	
90 percent exceeds	107		95		154	



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Apr. 1958 to Sept. 1965 and Jan. 1976 to current year.

PERIOD OF DAILY RECORD.--SPECIFIC CONDUCTANCE: Dec. 1996 to Jan. 1998.

WATER TEMPERATURE: Apr. 1958 to Sept. 1965 and Dec. 1996 to Jan. 1998.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 1 of 8

[%, percent; $CaCO_3$, calcium carbonate; MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; 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; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; k, counts outside acceptable range; p, value reported is preferred; r, value verified by rerun, same method]

Sample date-time	Medium name	Sample type	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)
12-13-2011 1145	Surface water	Regular	710	7.5	212	10.7	98	8.3	3,450
03-20-2012 1300	Surface water	Regular	710	15.0	799	10.1	98	8.2	1,240
04-25-2012 1055	Surface water	Regular	707	27.0	436	7.9	93	8.3	1,870
05-23-2012 1040	Surface water	Regular	701	24.5	130	8.1	104	8.4	3,440
06-12-2012 1120	Surface water	Regular	704	34.5	88	7.2	95	8.3	5,060
08-21-2012 1025	Surface water	Regular	707	32.0	279	6.5	91	8.3	4,550

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 2 of 8

[%, percent; $CaCO_3$, calcium carbonate; MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; 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; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; k, counts outside acceptable range; p, value reported is preferred; r, value verified by rerun, same method]

Sample date-time	Temperature, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Dissolved solids dried at 180°C, water, filtered, mg/L (70300)	Dissolved solids, water, filtered, sum of constituents, mg/L (70301)	Dissolved solids, water, filtered, tons per acre-foot (70303)	Hardness, water, mg/L as $CaCO_3$ (00900)	Noncarbonate hardness, water, filtered, field, mg/L as $CaCO_3$ (00904)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)
12-13-2011 1145	7.8	E 9.1	1,920	1,860	2.61	332	118	19	85.7
03-20-2012 1300	10.9	170	683	625	.93	147	36	190	40.0
04-25-2012 1055	19.3	77	1,040	962	1.41	187	44	105	50.5
05-23-2012 1040	23.0	E 12	1,910	1,820	2.60	282	114	< 15	68.4
06-12-2012 1120	24.8	E 8.2	2,730	2,670	3.72	341	190	15	77.0 p
08-21-2012 1025	28.4	65	2,450	2,410	3.33	318	140	70	70.5

09498500 SALT RIVER NEAR ROOSEVELT, AZ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
Part 3 of 8

[%, percent; $CaCO_3$, calcium carbonate; MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; 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; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; k, counts outside acceptable range; p, value reported is preferred; r, value verified by rerun, same method]

Sample date-time	Calcium, water, unfiltered, recoverable, mg/L (00916)	Magnesium, water, filtered, mg/L (00925)	Magnesium, water, unfiltered, recoverable, mg/L (00927)	Potassium, water, filtered, mg/L (00935)	Sodium adsorption ratio, water, number (00931)	Sodium, water, filtered, mg/L (00930)	Alkalinity, water, filtered, inflection-point, incremental titration method, field, mg/L as $CaCO_3$ (39086)	Bicarbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00453)	Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694)
12-13-2011 1145	89.8	28.6	29.4	11.1	12.8	534	214	244	--
03-20-2012 1300	53.4	11.5	13.6	4.86	6.25	174	111	131	15.0
04-25-2012 1055	60.7	14.8	16.8	6.44	8.85	278	144	170	3.85
05-23-2012 1040	68.0	27.0	26.8	11.6	14.3	552	167	195	1.28
06-12-2012 1120	77.5 p	36.1 p	37.2 r	18.6	20.3	861	151	180	--
08-21-2012 1025	74.2	34.4	34.6	16.7	18.9	775	178	208	--

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
Part 4 of 8

[%, percent; $CaCO_3$, calcium carbonate; MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; 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; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; k, counts outside acceptable range; p, value reported is preferred; r, value verified by rerun, same method]

Sample date-time	Carbonate, water, filtered, inflection-point incremental titration method, field, mg/L (00452)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Inorganic carbon, suspended sediment, total, mg/L (00688)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, unfiltered, mg/L as N (00625)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)
12-13-2011 1145	8.5	962	0.28	--	110	0.07	< .010	< .040	--
03-20-2012 1300	2.4	291	.16	.44	35.8	.84	.043	.244	.005
04-25-2012 1055	2.4	467	.17	< .03	57.9	.36	< .010	.047	.001
05-23-2012 1040	4.6	973	.21	< .03	83.9	.16	< .010	< .040	.001
06-12-2012 1120	1.9	1,470	.22	--	111	.20	.012	< .040	--
08-21-2012 1025	4.4	1,310	.19	--	100	.37	< .010	< .040	--

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 5 of 8

[%, percent; $CaCO_3$, calcium carbonate; MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; 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; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; k, counts outside acceptable range; p, value reported is preferred; r, value verified by rerun, same method]

Sample date-time	Organic nitrogen, water, unfiltered, mg/L (00605)	Orthophosphate, water, filtered, mg/L as P (00671)	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, unfiltered, mg/L (00600)	Escherichia coli, modified m-TEC MF method, water, col/100 mL (90902)	Barium, water, unfiltered, recoverable, µg/L (01007)	Beryllium, water, filtered, µg/L (01010)
12-13-2011 1145	< .07	--	--	--	0.02	< .11	E 5 k	72.1	< .012
03-20-2012 1300	.79	.083	1.01	.07	.36	1.1	E 17 k	90.5	.009
04-25-2012 1055	< .36	.060	.111	.06	.17	.40	E 12 k	76.3	.008
05-23-2012 1040	< .16	.006	.130	< .02	.03	< .20	E 1 k	90.4	.018
06-12-2012 1120	.19	--	--	--	.04	< .24	E 7 k	124	< .120
08-21-2012 1025	< .37	--	--	--	.08	< .41	39	149	< .018

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 6 of 8

[%, percent; $CaCO_3$, calcium carbonate; MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; 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; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; k, counts outside acceptable range; p, value reported is preferred; r, value verified by rerun, same method]

Sample date-time	Beryllium, water, unfiltered, recoverable, µg/L (01012)	Cadmium, water, filtered, µg/L (01025)	Cadmium, water, unfiltered, µg/L (01027)	Chromium, water, unfiltered, recoverable, µg/L (01034)	Copper, water, filtered, µg/L (01040)	Copper, water, unfiltered, recoverable, µg/L (01042)	Lead, water, filtered, µg/L (01049)	Lead, water, unfiltered, recoverable, µg/L (01051)	Manganese, water, unfiltered, recoverable, µg/L (01055)
12-13-2011 1145	< .04	< .032	< .032	< .60	< 1.6	< 1.4	< .050	0.18	23.6
03-20-2012 1300	.33	< .016	.108	4.5	1.3	6.6	.065	3.72	173
04-25-2012 1055	.15	< .016	< .016	2.3	.92	3.1	.061	1.48	90.1
05-23-2012 1040	< .04	< .032	< .032	< .60	< 1.6	< 1.4	.098	.24	26.0
06-12-2012 1120	< .10	< .320	< .032	< 1.5	< 16.0	< 3.5	< .500	.19	32.8
08-21-2012 1025	.13	< .048	< .032	1.5	< 2.4	2.5	< .075	.98	92.1

09498500 SALT RIVER NEAR ROOSEVELT, AZ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
Part 7 of 8

[%, percent; $CaCO_3$, calcium carbonate; MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; 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; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; k, counts outside acceptable range; p, value reported is preferred; r, value verified by rerun, same method]

Sample date-time	Mercury, water, filtered, µg/L (71890)	Mercury, water, unfiltered, recover-able, µg/L (71900)	Zinc, water, filtered, µg/L (01090)	Zinc, water, unfiltered, recover-able, µg/L (01092)	Antimony, water, filtered, µg/L (01095)	Antimony, water, unfiltered, µg/L (01097)	Arsenic, water, filtered, µg/L (01000)	Arsenic, water, unfiltered, µg/L (01002)	Boron, water, unfiltered, recoverable, micrograms per liter (01022)
12-13-2011 1145	< .005	< .005	< 2.8	< 6.0	0.146	0.50	6.9	6.6	317
03-20-2012 1300	< .005	.010	< 1.4	10.3	.084	< .18	3.1	4.5	94
04-25-2012 1055	< .005	< .005	< 1.4	5.0	.217	< .18	4.4	4.9	154
05-23-2012 1040	< .005	< .005	< 2.8	< 6.0	.225	< .36	4.8	4.6	315
06-12-2012 1120	< .005	< .005	< 28.0	< 15.0	< .540	< .36	5.5	5.1	397
08-21-2012 1025	< .005	< .005	4.4	< 6.0	.154	< .36	1.2	10.0	408

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
Part 8 of 8

[%, percent; $CaCO_3$, calcium carbonate; MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; 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; µg/L, micrograms per liter; --, no data; <, less than; E, estimated; k, counts outside acceptable range; p, value reported is preferred; r, value verified by rerun, same method]

Sample date-time	Selenium, water, unfiltered, µg/L (01147)	Organic carbon, suspended sediment, total, mg/L (00689)	Organic carbon, water, filtered, mg/L (00681)	Organic carbon, water, unfiltered, mg/L (00680)	Suspended sediment, sieve diameter, percent smaller than 0.0625 mm (70331)	Suspended sediment concen-tration, mg/L (80154)	Suspended sediment discharge, tons per day (80155)
12-13-2011 1145	0.162	--	--	--	--	47	27
03-20-2012 1300	.144	14.5	3.71	8.0	100	213	460
04-25-2012 1055	.116	3.85	2.28	3.9	99	109	128
05-23-2012 1040	.168	1.28	1.68	1.8	95	18	6.3
06-12-2012 1120	< .250	--	--	--	--	18	4.3
08-21-2012 1025	.253	--	--	--	--	72	54