Water-Data Report 2013

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. 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.--Maximum discharge, 5,330 ft^3/s, Jan. 29, gage height, 12.11 ft; minimum daily discharge, 80 ft^3/s, June 29, 30, July 1.

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 09498500, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/09498500.2013.pdf

09498500 SALT RIVER NEAR ROOSEVELT, AZ—Continued

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

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	111	126	135	148	1,000	265	922	476	164	80	490	881
2	109	126	135	147	778	264	887	464	158	84	431	775
3	107	126	135	155	647	264	877	463	150	93	899	663
4	107	127	135	153	571	267	833	455	140	90	514	601
5	106	128	135	140	538	288	779	442	132	174	449	553
6	106	129	134	135	523	321	726	428	126	140	421	513
7	107	130	135	137	523	352	699	419	121	125	489	492
8	108	130	136	141	540	440	685	414	117	129	473	460
9	109	132	137	143	541	1,540	701	398	111	136	376	665
10	111	140	137	150	534	1,390	716	383	108	126	342	1,100
11	111	154	138	151	507	1,720	708	366	107	125	305	1,720
12	112	147	138	149	467	2,130	692	352	106	137	281	2,160
13	115	153	138	145	421	2,010	688	333	103	141	280	1,800
14	115	156	150	146	373	2,010	749	319	100	161	372	3,250
15	116	156	177	123	346	2,070	753	301	96	169	407	2,530
16	120	152	199	116	338	2,090	738	289	94	195	372	2,270
17	120	149	202	115	333	2,150	716	283	94	195	364	1,690
18	119	144	196	118	317	2,160	696	281	95	214	440	1,320
19	119	146	187	127	306	2,080	681	274	96	283	407	1,050
20	118	143	180	143	307	1,960	647	269	93	294	348	855
21	117	143	174	149	319	1,810	607	262	90	277	330	774
22	118	142	171	153	320	1,670	568	251	89	507	512	657
23	119	141	161	151	306	1,640	537	238	87	444	331	700
24	120	138	152	152	302	1,600	519	224	85	541	363	642
25	121	139	153	156	292	1,360	520	215	85	466	318	588
26	121	138	159	176	293	1,170	517	200	85	667	473	522
27	122	138	158	1,180	279	1,080	523	192	83	994	602	455
28	122	137	160	3,060	273	1,010	519	185	81	1,380	625	414
29	123	137	157	4,570	---	951	502	184	80	828	546	384
30	124	135	154	2,740	---	927	486	179	80	755	1,130	363
31	124	---	155	1,520	---	951	---	172	---	604	1,480	---
Total	3,577	4,182	4,813	16,789	12,294	39,940	20,191	9,711	3,156	10,554	15,170	30,847
Mean	115	139	155	542	439	1,288	673	313	105	340	489	1,028
Max	124	156	202	4,570	1,000	2,160	922	476	164	1,380	1,480	3,250
Min	106	126	134	115	273	264	486	172	80	80	280	363
Med	117	138	153	149	360	1,390	694	289	96	195	421	682
Ac-ft	7,090	8,290	9,550	33,300	24,390	79,220	40,050	19,260	6,260	20,930	30,090	61,190
Cfsm	0.03	0.03	0.04	0.13	0.10	0.30	0.16	0.07	0.02	0.08	0.11	0.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	403	362	718	1,084	1,368	1,934	1,885	966	341	319	585	447
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)

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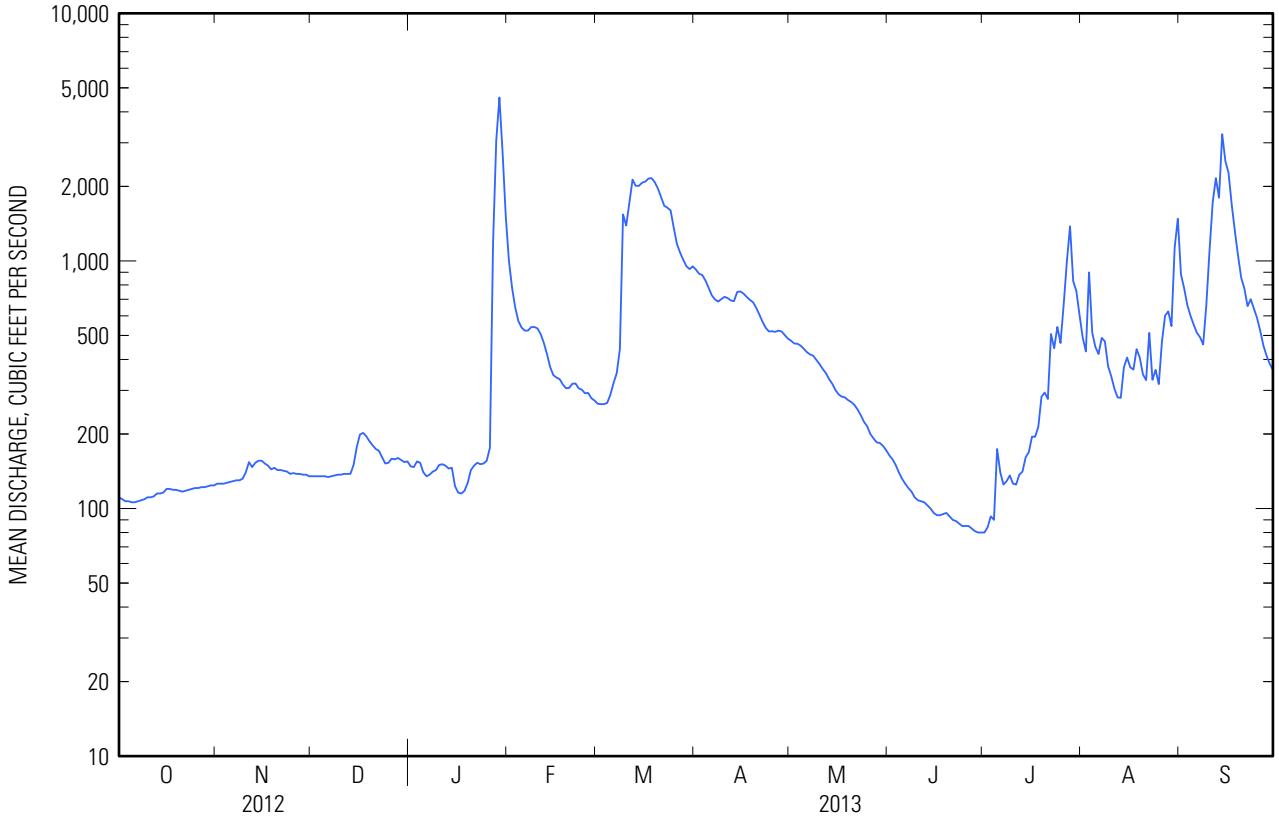
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1914 - 2013	
Annual total	92,954		171,224			
Annual mean	254		469		865	
Highest annual mean					3,252	1916
Lowest annual mean					191	2000
Highest daily mean	1,300	Mar 27	4,570	Jan 29	91,000	Jan 19, 1916
Lowest daily mean	80	Jul 2	80	Jun 29	59	Jul 4, 1955
Annual seven-day minimum	82	Jun 29	82	Jun 26	62	Jul 2, 1955
Annual runoff (ac-ft)	184,400		339,600		626,700	
Annual runoff (cfsm)	0.059		0.109		0.201	
10 percent exceeds	516		1,060		1,960	
50 percent exceeds	171		273		319	
90 percent exceeds	95		111		153	



09498500 SALT RIVER NEAR ROOSEVELT, AZ—Continued

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 2012 TO SEPTEMBER 2013

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; A, average; E, estimated; k, counts outside acceptable range; 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)
12-12-2012 1120	Surface water	Regular	709	9.5	136	10.4	95	8.3
01-29-2013 1420	Surface water	Regular	710	10.5	4,790	10.7	97	8.0
03-26-2013 1225	Surface water	Regular	709	26.0	1,170	9.6	100	8.0
04-29-2013 1040	*QC sample - Artificial*	*Blank*	--	--	--	--	--	*6.3*
04-29-2013 1350	Surface water	Regular	701	30.0	504	8.6	103	8.3
05-21-2013 1030	Surface water	Regular	706	28.5	264	7.9	96	8.4
08-13-2013 1105	Surface water	Regular	707	32.0	280	7.0	93	8.3

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

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; A, average; E, estimated; k, counts outside acceptable range; r, value verified by rerun, same method]

Sample date-time	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)	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)
12-12-2012 1120	4,660	7.6	E 10	2,640	2,530	3.59	351	141	< 15
01-29-2013 1420	545	8.1	5,370	311	A 281	.42	86.1	A 10	4,050
03-26-2013 1225	754	13.7	120	431	380	.59	99.6	19	140
04-29-2013 1040	*1*	--	--	--	--	--	--	--	--
04-29-2013 1350	1,540	20.0	40	839	776	1.14	163	45	59
05-21-2013 1030	2,500	21.0	E 9.3	1,370	1,290	1.86	215	65	18
08-13-2013 1105	1,960	25.9	360	1,050	922	1.43	205	48	387

09498500 SALT RIVER NEAR ROOSEVELT, AZ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
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; A, average; E, estimated; k, counts outside acceptable range; r, value verified by rerun, same method]

Sample date-time	Calcium, water, filtered, mg/L (00915)	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)
12-12-2012 1120	83.7	244	34.6	102	5.83	18.4	794	210	248
01-29-2013 1420	24.4	374	6.12	57.1	3.65	3.54	75.4	A 76.3	A 92.0
03-26-2013 1225	27.5	37.6	7.50	9.80	2.99	4.41	101	80.4	96.6
04-29-2013 1040	--	--	--	--	--	--	--	--	--
04-29-2013 1350	44.2	48.4	12.8	13.6	5.79	7.81	229	119	140
05-21-2013 1030	55.6	59.2	18.4	19.3	8.40	11.7	394	150	175
08-13-2013 1105	56.6	90.7	15.6	21.9	7.09	8.11	267	157	185

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
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; A, average; E, estimated; k, counts outside acceptable range; r, value verified by rerun, same method]

Sample date-time	Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694)	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)
12-12-2012 1120	--	4.0	1,360 r	0.22	--	117	< .07	< .010	< .040
01-29-2013 1420	121	A .5	106	.12	27.1	17.4	6.1	.197	.268
03-26-2013 1225	8.95	.7	165	.11	1.30	25.6	.75	.020	.368
04-29-2013 1040	--	--	--	--	--	--	*< .07*	*< .010*	*< .040*
04-29-2013 1350	--	2.2	375	.13	--	37.9	.23	< .010	< .040
05-21-2013 1030	--	3.6	664	.21	--	57.4	.19	< .010	< .040
08-13-2013 1105	--	3.0	441	.17	--	39.6	.79	< .010	.185

09498500 SALT RIVER NEAR ROOSEVELT, AZ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
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; A, average; E, estimated; k, counts outside acceptable range; r, value verified by rerun, same method]

Sample date-time	Nitrite, water, filtered, mg/L as N (00613)	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)
12-12-2012 1120	--	< .07	--	--	--	< .01	< .11	E 8 k	87.6
01-29-2013 1420	.005	6.0	.038	6.23	.05	2.78	6.4	E 150 k	623
03-26-2013 1225	.004	.73	.066	.097	.07	.29	1.1	E 3 k	75.1
04-29-2013 1040	--	*< .07*	--	--	--	*< .01*	*< .11*	*< 1 k*	--
04-29-2013 1350	--	< .23	--	--	--	.09	< .27	E 3 k	47.1
05-21-2013 1030	--	< .19	--	--	--	.02	< .23	E 3 k	53.5
08-13-2013 1105	--	< .79	--	--	--	.30	.97	E 97 k	174

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
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[%, 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; A, average; E, estimated; k, counts outside acceptable range; r, value verified by rerun, same method]

Sample date-time	Beryllium, water, filtered, µg/L (01010)	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)
12-12-2012 1120	< .024	0.14	< .064	0.068	4.8	< 3.2	< 1.4	< .100	0.36
01-29-2013 1420	.021	3.49	< .016	.868	36.6	1.4	62.0	.222	36.5
03-26-2013 1225	.012	.30	< .016	.065	3.8	< .80	5.8	.093	2.83
04-29-2013 1040	*< .006*	--	*< .016*	--	--	*< .80*	--	*< .025*	--
04-29-2013 1350	.006	.11	< .016	.025	1.4	< .80	1.9	.035	.80
05-21-2013 1030	.036	.04	< .032	< .016	.48	< 1.6	.86	< .050	.23
08-13-2013 1105	.010	.54	< .016	.066	7.8	1.1	6.4	< .025	3.73

09498500 SALT RIVER NEAR ROOSEVELT, AZ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
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; A, average; E, estimated; k, counts outside acceptable range; r, value verified by rerun, same method]

Sample date-time	Manganese, water, unfiltered, recoverable, µg/L (01055)	Mercury, water, filtered, µg/L (71890)	Mercury, water, unfiltered, recoverable, µg/L (71900)	Zinc, water, filtered, µg/L (01090)	Zinc, water, unfiltered, recoverable, 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)
12-12-2012 1120	34.5 r	< .005	< .005	< 5.6	< 6.0	< .108	< .36	7.1	7.2
01-29-2013 1420	1,930	< .005	.067	1.6	88.7	.346	< .18	3.7	20.7
03-26-2013 1225	158	< .005	.006	2.0	8.5	.139	< .18	2.2	3.4
04-29-2013 1040	--	*< .005*	--	*< 1.4*	--	--	--	--	--
04-29-2013 1350	58.5	< .005	< .005	< 1.4	3.3	.254	< .18	3.7	3.9
05-21-2013 1030	26.7	< .005	< .005	< 2.8	< 3.0	.064	< .18	5.3	5.1
08-13-2013 1105	239	< .005	< .005	< 1.4	13.7	.180	< .18	6.8	7.9

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
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; A, average; E, estimated; k, counts outside acceptable range; r, value verified by rerun, same method]

Sample date-time	Boron, water, unfiltered, recoverable, micrograms per liter (01022)	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 concentration, mg/L (80154)	Suspended sediment discharge, tons per day (80155)
12-12-2012 1120	416	0.229	--	--	--	--	58	21
01-29-2013 1420	61	.586	93.9	10.4	66.4	99	3,960	51,200
03-26-2013 1225	67	.150	7.66	4.07	8.7	99	211	667
04-29-2013 1040	--	--	--	--	--	--	*< .5*	--
04-29-2013 1350	116	.102	--	--	--	--	60	82
05-21-2013 1030	163	.094	--	--	--	--	18	13
08-13-2013 1105	170	.195	--	--	--	--	423	320