

Water-Data Report 2012

**09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UT**

Lower Green Basin  
San Rafael Subbasin

LOCATION.--Lat 38°51'30", long 110°22'10" referenced to North American Datum of 1927, in SE ¼ SE ¼ NW ¼ sec.34, T.22 S., R.14 E., Emery County, UT, Hydrologic Unit 14060009, on the right-bank, down-stream side of the bridge on State Highway 24, 14.0 mi. southwest of Green River, and 34.3 mi. upstream from the mouth.

DRAINAGE AREA.--1,628 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--May 1909 to September 1918, September 1919 to July 1920 (gage heights only), October 1945 to current year.

REVISED RECORDS.--WDR UT-77-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,190 ft above NGVD of 1929, from topographic map. May 5, 1909 to September 10, 1918, staff gage, and September 10, 1919 to July 10, 1920, tape-weight gage. November 29, 1945 to July 7 1976, water-stage recorder at various sites and datums about 1 mi upstream.

REMARKS.--Records good except for estimated daily discharges, which are poor. Diversions above station for irrigation of about 42,000 acres. Several small transmountain diversions from tributaries for irrigation in Sevier Lake Basin, and some storage since November 3, 1965, in Joes Valley Reservoir (see station 09323900).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft<sup>3</sup>/s, Sep 2, 1909, gage height, 12.7 ft, site and datum then in use, from rating curve extended above 3,100 ft<sup>3</sup>/s; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 527 ft<sup>3</sup>/s, Jul 15, gage height 9.19 ft; minimum daily discharge, 1.2 ft<sup>3</sup>/s, on many days.

## 09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UT—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	90	69	79	e52	e35	e47	36	15	13	1.2	23	13
2	77	69	76	e50	e41	e46	33	16	13	1.2	70	57
3	77	68	80	e40	e42	e44	33	16	12	1.2	100	67
4	77	64	77	e41	e43	e45	33	15	14	1.3	84	57
5	78	63	64	e42	e42	e46	29	14	14	1.2	37	28
6	101	64	e48	e43	e41	49	25	15	12	1.2	28	19
7	273	75	e42	e45	e34	49	23	17	9.5	4.2	23	16
8	169	77	e44	e41	e35	52	23	16	8.1	3.2	19	14
9	121	83	e46	e43	e36	54	22	17	7.1	1.9	17	13
10	114	79	e48	e42	e38	51	22	17	7.0	1.5	15	15
11	111	72	e50	e40	e40	47	22	16	6.3	1.4	39	21
12	110	65	e52	e38	e43	46	22	18	6.1	1.2	24	17
13	111	73	e55	e38	e46	47	20	17	6.9	1.5	32	24
14	99	73	e50	e35	e50	48	17	15	7.2	1.5	19	31
15	82	74	e49	e34	e50	43	17	14	7.1	60	15	20
16	79	75	e48	e33	e48	45	18	16	7.2	38	15	16
17	73	72	e46	e31	e46	48	17	18	6.2	167	15	15
18	69	72	e44	e30	e45	52	17	16	4.7	114	14	15
19	66	70	e45	e33	e43	52	17	17	3.9	41	13	13
20	67	77	e48	e37	e41	49	18	19	3.4	29	11	12
21	67	81	e45	e41	e40	47	17	19	3.2	22	11	12
22	67	79	e43	e40	e42	42	16	16	2.6	18	11	11
23	64	77	e41	e38	e45	40	15	14	2.2	16	11	11
24	65	78	e35	e40	e43	40	14	12	1.9	115	11	11
25	65	74	e36	e39	e45	40	14	10	1.7	46	105	10
26	69	75	e37	e40	e42	44	14	9.7	1.5	41	31	11
27	69	76	e41	e39	e45	45	13	9.6	1.3	27	22	11
28	68	70	e45	e37	e46	46	14	9.0	1.3	19	15	12
29	68	66	e48	e34	e47	43	16	9.2	1.3	17	12	20
30	70	74	e51	e35	---	40	16	10	1.2	30	11	26
31	71	---	e53	e37	---	40	---	12	---	28	12	---
<b>Total</b>	2,787	2,184	1,566	1,208	1,234	1,427	613	454.5	186.9	851.7	865	618
<b>Mean</b>	89.9	72.8	50.5	39.0	42.6	46.0	20.4	14.7	6.23	27.5	27.9	20.6
<b>Max</b>	273	83	80	52	50	54	36	19	14	167	105	67
<b>Min</b>	64	63	35	30	34	40	13	9.0	1.2	1.2	11	10
<b>Ac-ft</b>	5,530	4,330	3,110	2,400	2,450	2,830	1,220	902	371	1,690	1,720	1,230

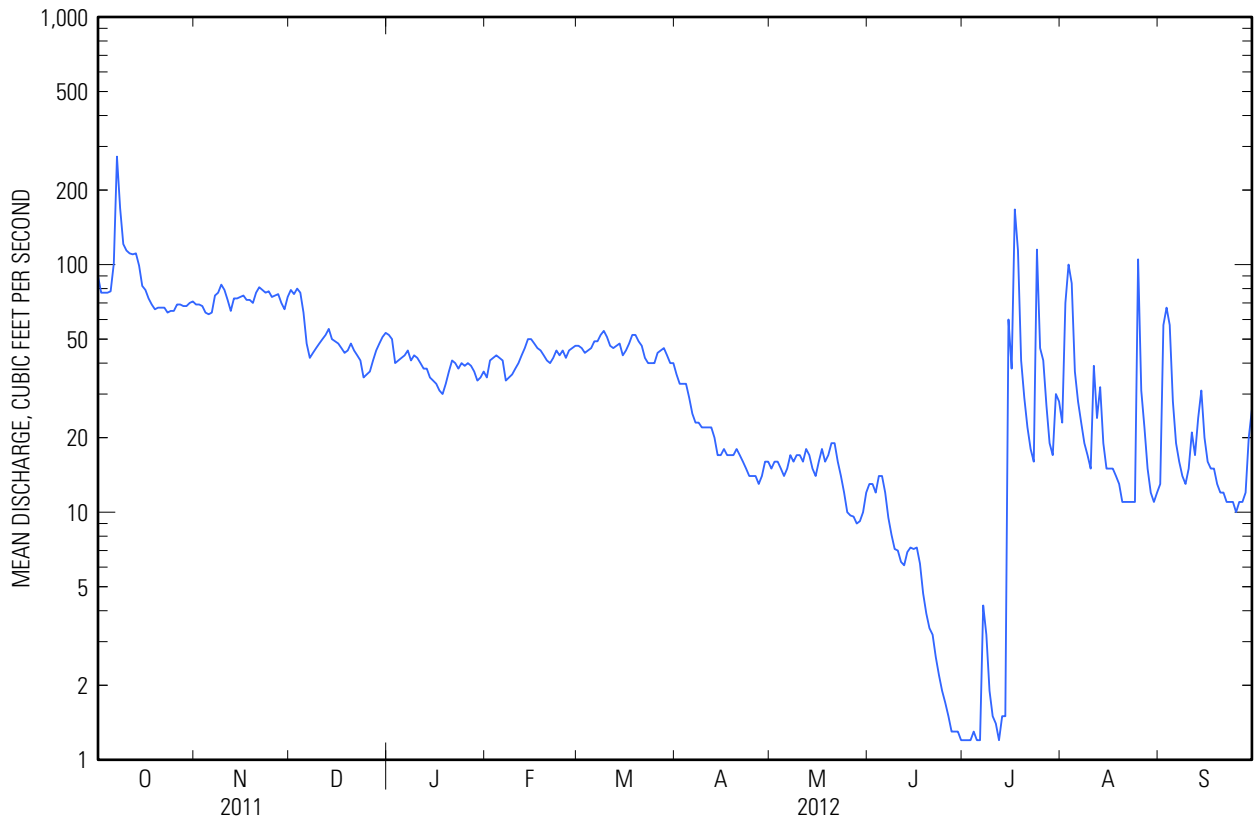
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910-18, 1946-2012, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	89.8	62.3	43.4	40.9	65.6	95.9	94.5	267	513	147	81.2	71.7
<b>Max</b>	848	358	125	224	200	729	748	1,626	2,772	965	344	309
<b>(WY)</b>	(1917)	(1958)	(1910)	(1911)	(1910)	(1910)	(1910)	(1914)	(1983)	(1983)	(1916)	(1961)
<b>Min</b>	0.00	5.68	7.80	10.8	14.5	19.2	5.41	1.58	1.09	0.13	0.38	0.11
<b>(WY)</b>	(2004)	(1978)	(2004)	(2004)	(2003)	(2003)	(2003)	(2003)	(1977)	(2003)	(1960)	(1956)

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SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1910-18, 1946-2012	
<b>Annual total</b>	99,745		13,995.1			
<b>Annual mean</b>	273		38.2		131	
<b>Highest annual mean</b>					483	1984
<b>Lowest annual mean</b>					11.8	2003
<b>Highest daily mean</b>	2,330	Jun 27	273	Oct 7	7,300	Oct 8, 1916
<b>Lowest daily mean</b>	11	Jan 3	1.2	Jun 30	0.00	Aug 24, 1910
<b>Annual seven-day minimum</b>	12	Jan 2	1.2	Jun 30	0.00	Aug 15, 1915
<b>Annual runoff (ac-ft)</b>	197,800		27,760		94,860	
<b>10 percent exceeds</b>	949		75		283	
<b>50 percent exceeds</b>	92		37		45	
<b>90 percent exceeds</b>	24		7.8		9.8	



**09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UT—Continued**

**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--November 1946 to September 1949, October 1950 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July to September 1949, October 1950 to September 1962, October 1964 to September 1977.

SPECIFIC CONDUCTANCE: July to September 1949, November 1950 to September 1962, October 1964 to September 1979, daily, March 1982 to current year.

SUSPENDED-SEDIMENT DISCHARGE: March 1948 to September 1949, October 1950 to September 1959.

REMARKS.--Unpublished daily records of specific conductance obtained before water year 1965 were included in the determination of extremes for period of daily record and are available at USGS Utah Water Science Center, Salt Lake City, Utah.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum, 35.0°C, Jul 11, 1954; minimum, 0.0°C, on many days during winter period each year.

SPECIFIC CONDUCTANCE: Maximum observed, 7,230 microsiemens/cm, Jul 15, 1954 and Jun 29, 1977; minimum observed, 632 microsiemens/cm, Jun 28, 2011.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum observed, 5,660 microsiemens, Jun 27; minimum observed, 1,290 microsiemens, Jul 20.

## 09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UT—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012  
DAILY INSTANTANEOUS VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	---	---	---	2,190	---	---	2,560	4,350	4,060	5,480	2,600	---
2	2,150	---	---	---	2,430	---	2,590	4,360	4,340	3,680	---	3,000
3	---	2,390	---	---	---	---	2,780	4,350	4,370	4,860	1,600	---
4	---	---	2,100	---	---	2,900	2,800	4,580	4,070	5,440	---	---
5	---	2,440	---	2,250	2,330	---	2,920	4,560	4,060	3,530	1,590	1,790
6	2,310	---	---	---	---	---	3,040	4,600	4,160	3,430	---	---
7	---	---	---	---	---	2,960	3,020	4,060	4,000	4,900	---	---
8	---	---	2,460	2,520	2,360	---	3,160	4,050	4,020	4,950	---	---
9	2,080	2,470	---	---	---	---	3,190	4,050	4,010	4,910	1,910	2,020
10	---	---	---	---	---	---	3,280	4,060	4,030	3,850	---	---
11	---	---	2,880	2,480	---	3,020	3,260	4,060	4,210	4,940	---	---
12	---	---	---	---	2,290	---	3,450	4,150	4,230	5,470	3,090	2,970
13	2,090	2,380	---	---	---	---	3,440	4,160	4,050	3,560	---	---
14	---	---	---	---	---	2,780	3,520	4,160	4,070	4,260	---	---
15	---	---	2,280	2,680	2,260	---	3,770	4,140	4,030	3,170	3,080	---
16	2,230	2,390	---	---	---	---	3,790	3,780	3,600	---	---	2,860
17	---	---	---	---	---	---	3,870	3,740	3,890	2,520	---	---
18	---	---	2,060	---	---	2,910	3,840	4,230	3,840	---	---	---
19	---	---	---	2,990	2,490	---	3,920	4,250	4,830	---	3,410	---
20	2,560	2,300	---	---	---	2,650	3,970	3,950	4,830	1,290	---	3,110
21	---	---	2,340	---	---	---	4,160	3,950	4,840	---	---	---
22	---	---	---	3,070	2,830	---	4,150	4,120	4,830	3,020	---	---
23	2,590	2,070	---	---	---	---	4,080	4,120	4,620	---	2,810	3,180
24	---	---	---	---	---	---	4,100	4,120	3,780	3,050	---	---
25	---	---	2,670	2,710	---	2,660	3,970	4,120	3,780	---	---	2,930
26	2,640	---	---	---	2,450	---	4,190	4,190	3,760	---	1,780	---
27	---	2,080	2,630	---	---	---	4,190	4,410	5,660	---	---	---
28	---	---	---	---	---	2,510	4,330	4,180	5,610	---	---	---
29	---	---	---	---	2,900	---	4,340	3,830	5,590	3,170	2,810	---
30	2,600	2,110	---	2,780	---	---	4,380	4,190	5,590	---	---	2,910
31	---	---	---	---	---	---	---	4,030	---	---	---	---
<b>Mean</b>	---	---	---	---	---	---	3,600	4,160	4,360	---	---	---
<b>Max</b>	---	---	---	---	---	---	4,380	4,600	5,660	---	---	---
<b>Min</b>	---	---	---	---	---	---	2,560	3,740	3,600	---	---	---

## 09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UT—Continued

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

Part 1 of 2

[CaCO<sub>3</sub>, calcium carbonate; SiO<sub>2</sub>, silicon dioxide; ft, feet; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; °C, degrees Celsius; μS/cm, microsiemens per centimeter; --, no data]

Date	Discharge, instantaneous, ft <sup>3</sup> /s (00061)	Specific conduc- tance, water, unfiltered, μS/cm at 25°C (00095)	Tempera- ture, water, °C (00010)	Gage height, ft (00065)	Dissolved solids dried at 180°C, water, filtered, mg/L (70300)	Dissolved solids, water, filtered, sum of constit- uents, mg/L (70301)	Calcium, water, filtered, mg/L (00915)	Magne- sium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)
11-30-2011	79	2,350	.5	6.14	--	--	--	--	--	--
01-27-2012	39	2,430	.5	--	2,000	1,940	194	117	6.44	233
03-14-2012	48	2,640	8.0	5.94	2,320	2,170	188	131	6.38	302
04-18-2012	18	3,820	13.5	4.63	3,540	3,320	286	209	9.94	484
06-06-2012	12	3,960	18.7	5.57	3,640	3,350	250	213	12.3	529
06-28-2012	1.3	5,500	20.7	5.33	5,330	4,850	396	288	13.1	707
07-26-2012	46	2,410	23.4	5.95	2,340	2,150	441	83.4	16.7	52.6
08-27-2012	21	1,560	25.0	5.61	1,290	1,260	286	39.5	9.47	57.0
09-20-2012	11	3,520	14.9	5.40	3,120	2,900	309	153	13.8	371

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

Part 2 of 2

[CaCO<sub>3</sub>, calcium carbonate; SiO<sub>2</sub>, silicon dioxide; ft, feet; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; °C, degrees Celsius; μS/cm, microsiemens per centimeter; --, no data]

Date	Alkalinity, water, filtered, fixed endpoint (pH 4.5) titration, laboratory, mg/L as CaCO <sub>3</sub> (29801)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Silica, water, filtered, mg/L as SiO <sub>2</sub> (00955)	Sulfate, water, filtered, mg/L (00945)
11-30-2011	--	--	--	--	--
01-27-2012	327	64.4	.27	8.14	1,120
03-14-2012	281	69.9	.26	5.14	1,300
04-18-2012	314	104	.36	5.66	2,040
06-06-2012	258	95.1	.21	7.76	2,090
06-28-2012	439	146	.12	9.25	3,030
07-26-2012	119	19.1	.24	5.96	1,460
08-27-2012	150	21.0	.16	5.04	748
09-20-2012	294	93.7	.24	5.33	1,780