Water-Data Report 2013

15226000 SOLOMON GULCH NEAR VALDEZ, AK

Prince William Sound Basin
Eastern Prince William Sound Subbasin

LOCATION.--Lat 61°05′02″, long 146°18′13″ referenced to North American Datum of 1927, in NE ¼ SE ¼ SW ¼ sec.16, T.9 S., R.6 W., Valdez-Cordova Division, AK, Hydrologic Unit 19020201, (Valdez A-7 SE quad), below confluence of Solomon Gulch Tailrace and Falls Creek, and 3.8 mi southeast across Port Valdez from Valdez.

DRAINAGE AREA.--19.7 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July to December 1948, October 1949 to September 1956, and September 1986 to current year.

GAGE.--Nonrecording gage. Elevation of gage is at sea level. July 9, 1948 to May 21, 1950, nonrecording gage, and May 22, 1950 to September 30, 1956, water-stage recorder at about present site and datum.

COOPERATION.--Records of daily discharge diverted to the fish hatchery are furnished by Valdez Fisheries Development Association. Copper Valley Electric Association provides tables of hourly power output through the turbines and daily storage values for Solomon Lake.

REMARKS.--Records poor. Discharge data represent the flow at mouth which includes Solomon Gulch at Top of Falls (station 15225997), power plant Tailrace (station 15225996), and all fish hatchery diversions. Water for power generation is diverted by a dam at Solomon Lake, 0.8 mi. upstream. Water is diverted for the fish hatchery by a 24-in. penstock aeration system, and a 24-in. penstock line from the Tailrace weir pool. An unaerated penstock and an 8-in. pipe for warm water supply are upstream. Additional water is diverted to the fish hatchery from Solomon Gulch bypass channel, about 750 ft. above gage, by means of a 12-in. diameter pipe. The fish hatchery discharges water directly into Port Valdez. Average daily diversion to fish hatchery for 2013 water year was 12.5 ft^3/s. Power generation began January 6, 1982.

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 15226000, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/15226000.2013.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	162	109	60	61	79	82	70	51	264	252	296	256
2	141	110	62	66	73	85	67	51	263	229	288	288
3	133	113	69	68	70	87	66	47	266	490	303	1,310
4	177	116	76	71	77	88	68	45	267	435	501	1,250
5	e821	116	80	98	82	88	66	46	265	597	343	786
6	e1,910	112	78	71	84	88	64	53	246	576	284	949
7	e411	115	77	84	84	80	67	62	253	644	244	958
8	232	115	71	91	80	73	65	59	246	695	257	790
9	193	103	66	92	76	77	68	62	254	461	379	595
10	171	116	70	85	71	82	74	52	269	377	1,280	917
11	139	109	73	71	73	75	73	52	270	361	1,010	1,030
12	135	115	64	69	78	72	71	55	262	400	555	667
13	122	118	66	e72	82	75	67	67	261	407	391	414
14	108	102	62	e72	79	75	67	69	257	353	311	320
15	113	102	61	e75	80	75	67	70	257	330	280	264
16	123	124	60	76	89	69	66	70	260	349	278	253
17	110	114	71	89	79	68	63	82	269	350	280	258
18	110	115	73	83	77	75	63	77	209	383	278	419
19	113	123	72	75	75	81	62	74	261	424	276	394
20	117	126	73	77	74	e77	60	61	258	386	278	261
21	118	126	71	80	76	74	59	50	243	359	279	245
22	118	104	69	81	78	72	55	37	238	357	269	236
23	123	86	72	80	71	68	54	53	237	376	402	247
24	122	81	76	80	74	70	49	59	245	327	340	252
25	119	81	62	72	83	66	49	80	258	362	269	252
26	121	91	63	e84	84	70	50	92	266	349	267	248
27	123	82	67	e87	83	67	48	97	261	308	225	245
28	123	64	61	e136	80	68	49	116	265	299	394	236
29	113	63	65	e213	---	71	49	188	255	324	754	235
30	116	58	64	206	---	67	51	236	244	324	375	241
31	100	---	60	149	---	65	---	252	---	312	281	---
Total	6,837	3,109	2,114	2,814	2,191	2,330	1,847	2,465	7,669	12,196	11,967	14,816
Mean	221	104	68.2	90.8	78.2	75.2	61.6	79.5	256	393	386	494
Max	1,910	126	80	213	89	88	74	252	270	695	1,280	1,310
Min	100	58	60	61	70	65	48	37	209	229	225	235
Ac-ft	13,560	6,170	4,190	5,580	4,350	4,620	3,660	4,890	15,210	24,190	23,740	29,390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2013, BY WATER YEAR (WY)#

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	198	101	90.7	89.1	86.9	85.8	75.5	143	202	261	299	322
Max	448	228	180	138	130	138	132	213	387	410	462	614
(WY)	(2007)	(2003)	(2003)	(1995)	(1987)	(2003)	(2003)	(1993)	(2005)	(2001)	(1993)	(2012)
Min	67.6	70.1	60.3	60.0	58.9	5.08	26.2	74.2	145	135	108	79.5
(WY)	(2008)	(2008)	(2007)	(2007)	(2002)	(1991)	(1991)	(2005)	(1988)	(2011)	(2007)	(2007)

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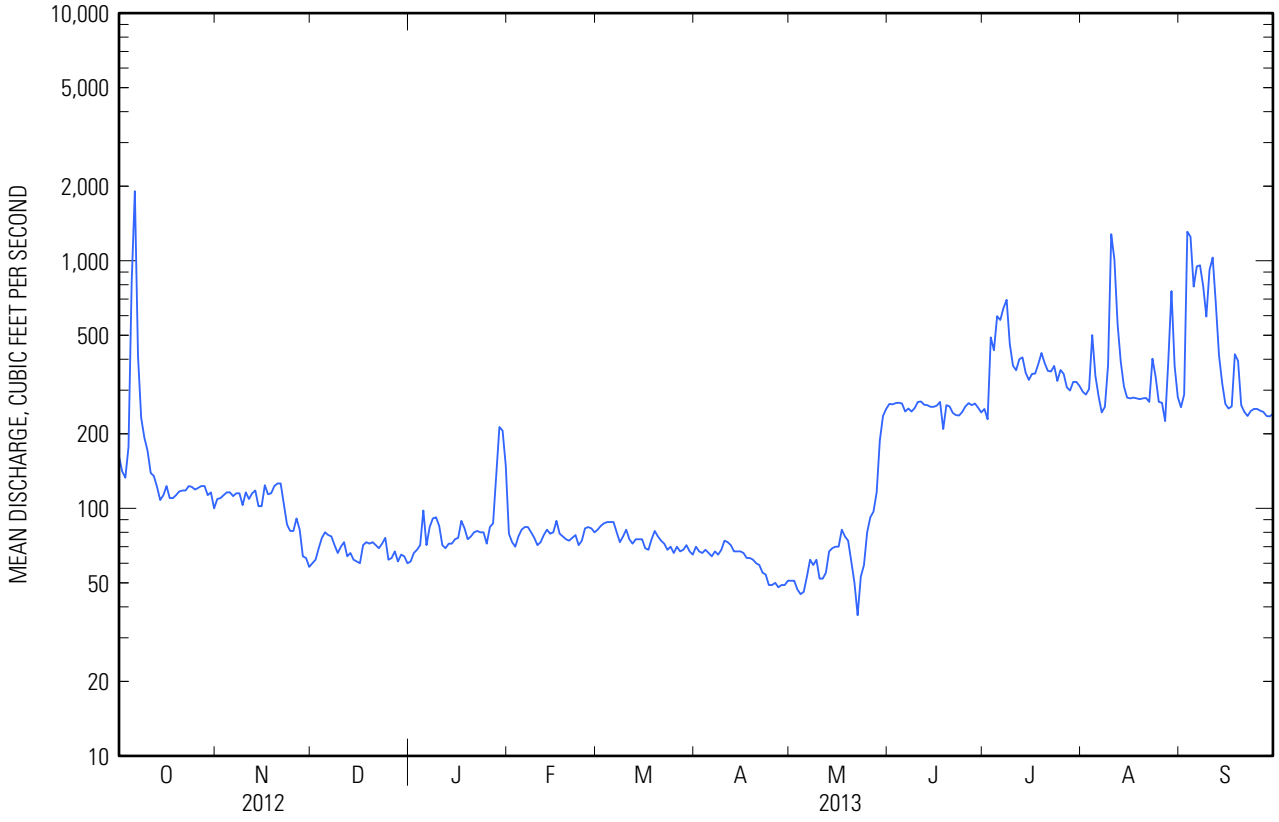
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1986 - 2013#	
Annual total	68,557		70,355			
Annual mean	187		193		164	
Highest annual mean					197	1990
Lowest annual mean					125	1996
Highest daily mean	2,720	Sep 20	1,910	Oct 6	e2,720	Sep 20, 2012
Lowest daily mean	47	Apr 20	37	May 22	1.0	Apr 12, 1989
Annual seven-day minimum	51	Apr 17	49	Apr 29	2.3	Mar 24, 1991
Annual runoff (ac-ft)	136,000		139,500		118,600	
Annual runoff (ac-ft)	*137,400		*138,200		*118,100	
Annual runoff (csfm)	*9.6		*9.7		*8.3	
Annual runoff (inches)	*130.90		*131.70		*112.36	
10 percent exceeds	323		381		268	
50 percent exceeds	102		100		114	
90 percent exceeds	65		62		67	

See Period of Record; partial years were used in monthly statistics and breaks in record, and Remarks. Values shown in the summary statistics table are unadjusted for change in storage in Solomon Lake, unless otherwise noted. See WDR-US-2009 for statistics prior to construction of Solomon Gulch Hydroelectric Project.

e Estimated

* Adjusted for change in storage in Solomon Lake