

LEWIS RIVER BASIN

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14220500 LEWIS RIVER AT ARIEL, WA

LOCATION.--Lat 45°57'07", long 122°33'46", in NW 1/4 NE 1/4 sec.4, T.5 N., R.2 E., Cowlitz County, Hydrologic Unit 17080002, on right bank 0.4 mi southeast of Ariel, 0.5 mi downstream from Merwin Dam and powerplant, 3.3 mi upstream from Cedar Creek, and at mile 19.0.

DRAINAGE AREA.--731 mi².

PERIOD OF RECORD.--July to October 1909, November 1909 (gage heights only), July to October 1922, July 1923 to current year. Published as "near Ariel" water years 1922-29. Prior to October 1952, discharge measurements made at site 0.5 mi downstream; low discharges not equivalent due to local inflow.

REVISED RECORDS.--WSP 884: 1938. WSP 984: 1936-37, 1940-42. WSP 1318: 1924-30(M).

GAGE.--Water-stage recorder. Datum of gage is 44.0 ft above NGVD of 1929 (levels by Pacificorp). July to November 1909, nonrecording gage at site 4 mi upstream at different datum. July 27 to Oct. 29, 1922, and July 31, 1923, to Apr. 20, 1930, nonrecording gages at site 0.5 mi downstream at datums 3.90 ft and 0.90 ft higher respectively, than present datum.

REMARKS.--No estimated daily discharges. Records good. No diversion upstream from station. Flow regulated by Swift and Yale Reservoirs, and Lake Merwin (stations 14217600, 14218500, 14220000). Chemical analyses July 1959 to June 1960, April 1979 to September 1986. Additional data from April to August 1980 are published in U.S. Geological Survey Open-File Report 81-1007. Water temperatures October 1950 to September 1963.

AVERAGE DISCHARGE.--79 years (water years 1924-2002), 4,816 ft³/s, 89.47 in/yr, 3,489,000 acre-ft/yr, adjusted for storage in Lake Merwin Reservoir since March 1931, Yale Reservoir since August 1952, and Swift Reservoir since October 1958.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 129,000 ft³/s Dec. 22, 1933, gage height, 35.0 ft, from floodmarks, from rating curve extended above 56,000 ft³/s on basis of computation of peak flow over dam; no flow at times June 30, July 1-3, 6-9, 1931 (caused by regulation during construction of Merwin Dam); minimum daily discharge, 1 ft³/s July 6, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,700 ft³/s Dec. 17, gage height, 8.60 ft; minimum discharge, 1,030 ft³/s Oct. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2150	1900	11600	6100	8510	6410	4970	5050	5930	3550	1500	1160
2	2140	2900	11800	6150	8500	5960	4950	5630	5920	3140	1500	1160
3	2100	2900	11800	5920	8520	5980	4950	5610	5940	3030	1500	1160
4	2070	2940	11800	5690	8540	5980	4960	5620	5980	2760	1480	1160
5	2060	4670	11800	5440	8500	5930	4960	5620	5970	2580	1470	1170
6	2030	5330	11800	5450	8470	5910	4970	5640	5960	2810	1400	2360
7	2040	4500	11800	9830	8460	5920	4990	5650	5660	2480	1170	1460
8	2020	2460	10700	11800	8450	5940	5000	5650	4670	2490	1180	1210
9	2010	4960	10100	11700	8490	5960	4980	5640	3360	2480	1180	1210
10	2010	4970	10100	11700	8100	5950	5800	5630	3280	2360	1190	1220
11	2000	4980	10100	11700	5980	5350	6460	5630	3290	2250	1190	1210
12	1990	4990	10100	11700	5890	5710	7880	5630	3550	2260	1200	1210
13	1980	4990	9140	11600	5920	5930	9450	5320	3920	2290	1210	1210
14	2000	5500	11500	11300	5890	5910	11500	4930	4030	2290	1210	1210
15	2000	5110	11900	10100	5860	6210	11400	4920	3990	2120	1210	1210
16	2000	2700	12300	9580	5900	6460	11400	4920	3990	1970	1200	1200
17	2000	5960	13500	9020	5920	6450	10900	4940	3990	1950	1200	1210
18	2000	5970	11900	9010	5930	6420	9520	4360	4010	1950	1200	1210
19	1980	6260	11900	9010	5930	6400	8310	3580	3730	1960	1200	1210
20	1990	6130	11900	9050	5890	7380	7380	3690	3570	1930	1200	1210
21	2010	4080	11900	9150	5910	7930	7370	3850	3450	1690	1190	1210
22	2020	6320	11800	9130	5920	6470	5480	3850	3260	1700	1190	1210
23	2410	7970	11800	9090	5970	6430	4380	3870	3260	1450	1190	1210
24	2690	9000	10900	9070	5980	6450	3170	3880	3280	1430	1150	1200
25	1770	9230	10000	11100	5970	6180	3180	3890	3270	1430	1160	1200
26	2680	11400	10100	9490	5930	5700	3880	3860	3280	1430	1160	1230
27	2670	11800	9650	9070	6250	5450	4930	3890	3260	1430	1160	1310
28	2670	11800	9120	8810	6410	5440	4930	3850	3260	1430	2430	1230
29	2790	11800	9120	8470	---	5150	4910	4060	3750	1430	1710	1230
30	2910	11600	9130	8470	---	5000	4910	5830	3930	1460	1170	1220
31	2900	---	7870	8480	---	5000	---	5930	---	1500	1160	---
TOTAL	68090	185120	338930	282180	191990	187360	191870	150420	124740	65030	40260	37610
MEAN	2196	6171	10930	9103	6857	6044	6396	4852	4158	2098	1299	1254
MAX	2910	11800	13500	11800	8540	7930	11500	5930	5980	3550	2430	2360
MIN	1770	1900	7870	5440	5860	5000	3170	3580	3260	1430	1150	1160
AC-FT	135100	367200	672300	559700	380800	371600	380600	298400	247400	129000	79860	74600
MEAN†	1480	7435	9919	9251	6257	6113	8727	5653	4527	1981	1066	844
CFSM†	2.02	10.17	13.57	12.66	8.56	8.36	11.94	7.73	6.19	2.71	1.46	1.15
IN.†	2.33	11.35	15.65	14.59	8.92	9.64	13.32	8.92	6.91	3.13	1.68	1.29
AC-FT†	91000	442400	609900	568800	347500	375900	519300	347600	269400	121800	65560	50200

CAL YR 2001 TOTAL 1199850 MEAN 3287 MAX 13500 MIN 1020 AC-FT 2380000 MEAN† 3627 CFSM† 4.96 IN.† 67.37 AC-FT† 2626000
WTR YR 2002 TOTAL 1863600 MEAN 5106 MAX 13500 MIN 1150 AC-FT 3696000 MEAN† 5261 CFSM† 7.20 IN.† 97.72 AC-FT† 3809000

† Adjusted for change in contents in Lake Merwin, Swift Reservoir and Yale Reservoir.