

NISQUALLY RIVER BASIN

12085000 ALDER RESERVOIR AT ALDER, WA

LOCATION.--Lat 46°48'09", long 122°18'37", in SE 1/4 NW 1/4 sec.9, T.15 N., R.4 E., Thurston County, Hydrologic Unit 17110015, near left end of Alder Dam on Nisqually River, 1.0 mi west of Alder, 1.7 mi upstream from La Grande Dam, 4.6 mi upstream from Mashel River, and at mile 44.2.

DRAINAGE AREA.--286 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1944 to current year.

GAGE.--Water-stage recorder. Datum of gage is 7.61 ft above NGVD of 1929 (levels by Tacoma Public Utilities). Prior to July 8, 1946, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete-arch dam; storage began Nov. 7, 1944; dam completed in 1945. Usable capacity, 161,457 acre-ft (based on 1985 resurvey) between gage heights 1,114 ft, lower limit of operating range, and 1,207 ft, top of spillway gates. Unused storage below gage height 1,114 ft, 52,110 acre-ft. Crest of spillway is at gage height 1,177 ft. Figures given herein represent total contents. Water is used by City of Tacoma for power generation. Chemical analyses December 1973 to September 1983 (samples were taken near the dam).

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 233,848 acre-ft Dec. 4, 1975, gage height, 1,207.68 ft; minimum contents since reservoir first filled, 74,200 acre-ft Nov. 26, 2000, gage height, 1,137.36 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 210,500 acre-ft June 29, 30; maximum gage height, 1,206.05 ft June 29; minimum contents 102,100 acre-ft Nov. 13, gage height, 1,159.40 ft.

Capacity table (gage height, in feet, and total contents, in acre-feet)  
(Based on project resurvey and maps provided by Tacoma Public Utilities in 1985)

1,143	80,474	1,170	120,736	1,200	192,544
1,150	89,003	1,180	141,570	1,207	213,570
1,160	103,084	1,190	164,970		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130600	106500	167400	168800	171900	166300	170100	178900	200200	208000	197200	172500
2	129200	107500	170200	167400	169500	164900	169500	178100	200600	207200	196400	171900
3	127900	108000	171100	165900	167100	164300	168900	177700	200700	206600	195400	171100
4	126800	108000	170500	164100	164700	163600	168600	177000	201000	206000	194700	170100
5	125600	108100	169300	162300	163000	162900	168700	176200	202500	205500	193700	168900
6	124200	107500	168800	162600	161200	162200	169200	175400	203900	205100	192600	167900
7	122800	106900	168000	182000	160100	161300	170100	174200	204500	205200	191400	166800
8	121600	105900	166400	199000	159200	160200	170600	173500	204600	205500	190200	165600
9	120000	105100	164700	203600	157700	159300	171600	173100	204400	205400	189300	164500
10	118500	104000	163100	203500	155900	158600	174600	172900	204100	205600	188600	163500
11	117200	102900	161200	201200	154900	164700	176900	172500	203700	205800	187900	162600
12	116100	102300	159300	199400	154600	171400	179900	172500	203500	206100	187100	161800
13	115400	102600	165900	196500	154300	174900	186100	173200	203900	206300	186500	161000
14	115300	119700	174500	193700	153600	176900	199300	174100	204900	206500	185900	160000
15	114600	129300	172500	192400	153300	178000	202300	174900	205800	206200	185300	159100
16	113500	134000	181900	191200	152300	178600	201800	175500	206100	206000	184700	158200
17	112300	136300	192800	189500	151700	178800	200700	176400	205500	205800	184000	157100
18	111000	137600	194200	187800	151200	178200	200000	177300	205200	205500	183200	155900
19	109700	139400	193400	186100	151200	177400	199400	178400	204700	205100	182200	154700
20	108400	141600	192400	184700	151000	177200	198600	179900	204600	204500	181400	153700
21	107100	144600	191700	183100	155600	177000	197100	181900	204800	203900	180400	152500
22	106100	151300	190900	181100	160700	177400	195500	183500	205500	203500	179500	151500
23	106300	158600	189300	178800	165600	176500	193800	184800	206200	203100	178800	150400
24	105800	161500	187600	178200	170000	175700	191800	185600	206600	202500	178100	149300
25	105600	162800	185800	182000	171700	175000	189700	186400	207100	201900	177300	148300
26	105000	162600	183400	182700	171200	174300	187800	187600	208000	201300	176700	147200
27	104500	161200	181000	181800	169900	173400	186000	189200	208700	200400	175900	146000
28	103800	161100	178800	180200	168200	172300	184000	192300	209300	199700	175300	144800
29	103100	162600	176300	178400	---	171400	182000	196100	210500	199200	174800	143700
30	102600	163800	173800	176200	---	170700	180200	198600	209500	198800	174000	142500
31	104800	---	171000	174200	---	170400	---	199900	---	198000	173300	---
MAX	130600	163800	194200	203600	171900	178800	202300	199900	210500	208000	197200	172500
MIN	102600	102300	159300	162300	151000	158600	168600	172500	200200	198000	173300	142500
†	1161.09	1189.52	1192.30	1193.45	1191.25	1192.11	1195.62	1202.46	1205.71	1201.82	1193.13	1180.44
‡	-27200	+59000	+7200	+3200	-6000	+2200	+9800	+19700	+9600	-11500	-24700	-30800

CAL YR 2001 MAX 211200 MIN 84100 AC-FT‡ +87200  
WTR YR 2002 MAX 210500 MIN 102300 AC-FT‡ +10500

† Gage Height, in feet, at end of month.  
‡ Change in contents, in acre-feet.