

Water Quality Standards

G O O S E    L A K E

Lake County, Oregon

Oregon State Sanitary Authority  
September 1966

These standards after final adoption shall apply to that portion of the main body of Goose Lake located in Lake County, Oregon.

Water Quality Standards for Goose Lake in Oregon

OREGON STATE SANITARY AUTHORITY

September, 1966

Table of Contents

<u>Subject</u>	<u>Page</u>
Background - - - - -	1
Public Policy - - - - -	2
Authorization - - - - -	3
Existing Water Quality Standards (General) - - - - -	4
Special Water Quality Standards for Goose Lake - - - - -	5
Implementation Plan - - - - -	6
Rationale for Special Water Quality Standards for Goose Lake -	7
Beneficial Water Uses to be Protected (Table A) - - - - -	10
Basin Map - - - - -	11

Appendix

<u>Table</u>	<u>Page</u>
B Summary of Surface Water Rights - - - - -	13
C Physical Measurements for Goose Lake & Tributaries - - - -	14
D Physical-Chemical Data for Goose Lake & Tributaries - - -	15
E & F Radiological Data for Goose Lake & Tributaries - - - -	16-17
G Typical Analyses for Heavy Metals in Goose Lake - - - - -	18
Typical Hydrographs for Major Goose Lake Tributaries - - -	19
Selected References - - - - -	20

ESTABLISHMENT OF WATER QUALITY STANDARDS  
FOR INTERSTATE WATERS  
IN OREGON

Background

The Water Quality Act of 1965 (Public Law 89-234) amended the Federal Water Pollution Control Act to provide for establishment of water quality standards for interstate waters.

The Federal Act provides that standards adopted by a State will become the standards applicable if:

1. The Governor or water pollution control agency files by October 2, 1966, a letter of intent that the State, after public hearings, will, before June 30, 1967, adopt (a) water quality criteria applicable to interstate waters or portions thereof within the State, and (b) a plan for the implementation and enforcement of the criteria; and,
2. The State subsequently adopts such criteria and plan; and,
3. The Secretary determines that the State criteria and plan are consistent with the purposes of the Act, i.e., "...to enhance the quality and value of our water resources and to establish a national policy for the prevention, control and abatement of water pollution."

The Honorable Mark O. Hatfield, Governor of Oregon, by letter dated December 29, 1965, gave formal notice to the Secretary of Health, Education and Welfare, that the state of Oregon, through its legally constituted agency, the Oregon State Sanitary Authority, intends to establish water quality standards and to adopt a plan for implementation and enforcement of such standards, in compliance with the terms of Public Law 89-234.

# TENTATIVE

## Special Water Quality Standards Applicable to the Waters of Goose Lake

The provisions of this section shall be in addition to, and not in lieu of, existing STANDARDS OF PURITY FOR WATERS AND DISPOSAL THEREIN OF SEWAGE AND INDUSTRIAL WASTES (Oregon Administrative Rules, Chapter 334, Division 1) and particularly Section 11-010 thereof, except where this section imposes a conflicting requirement with the provisions of Section 11-010, this section shall govern.

No sewage or industrial wastes shall be discharged into the waters of Goose Lake or its tributaries, nor shall any industrial, commercial, agricultural or other operation be conducted so that such wastes or operation in itself or in conjunction with other wastes and/or operations will cause, in the public waters of Goose Lake: (1) The dissolved oxygen content of the lake waters to be less than 7 milligrams per liter.

- (2) The hydrogen-ion concentration of the lake waters to be outside the range of 7.5 to 9.5.
- (3) Average concentrations of coliform bacteria (MPN) to exceed 1,000 per 100 milliliters of lake water when associated with sewage wastes.
- (4) The mean lake water temperature to exceed 70° F. or the mean daily ambient air temperature, whichever is greater.
- (5) Tastes and odors to be imparted to fish and related forms.
- (6) The quantity of radioactive contaminants to exceed the U.S. Public Health Service drinking Water Standards unless specific approval to exceed the drinking water standards is given after a detailed study has been made which shows that a proposed discharge will not cause exposures and/or intakes which exceed the limits recommended by the Federal Radiation Council for control action.
- (7) Pesticide concentrations, either individually or in synergistic combination, to reach quantities which are likely to have detrimental effects upon humans, plants, animals, or fish and related forms.
- (8) Significant increases in total dissolved solids above natural levels.

- (d) The extent of the oxygen demand which may be permitted in the receiving waters;
  - (e) The minimum dissolved oxygen content that shall be maintained;
  - (f) The limits of other physical, chemical, biological or radiological properties that may be necessary for preserving the purity of the waters of the State;
  - (g) The extent to which any substance must be excluded for the protection and preservation of public health; and
  - (h) The value of stability and the public rights to rely upon standards as adopted for a reasonable period of time to permit institutions, municipalities, commerce, industries and others to plan, schedule, finance and operate improvements in an orderly and practical manner.
- (2) The adoption, alteration, modification or repeal of the standards of quality and purity above prescribed shall be made by the Authority only after public hearing on due notice, subject to the limitations thereon elsewhere set forth in this chapter.
- (3) Notices of public hearing for the adoption, alteration, modification or repeal of standards of quality and purity thereof shall specify the time, date and place of hearing, and the waters concerning which standards are sought to be adopted. Copies of said notice shall be published at least twice in a newspaper regularly published or circulated in the county or counties bordering or through which the waters, for which standards are sought to be adopted, flow; the first of which publications shall be not more than 30 days nor less than 20 days before the date fixed for such hearing, and copies of said notice shall be mailed at least 20 days before such hearing to the chief executive officer of each municipal corporation bordering or through which said waters for which standards are sought to be adopted, flow, and to such other persons as the Authority may find appropriate.
- (4) Any person responsible for complying with the standards of water quality or purity established under this chapter shall determine, subject to the approval of the Sanitary Authority, the means, methods, processes, equipment and operation to meet said standards.
- (5) The standards of quality and purity thereof shall, before becoming effective, be filed with the Secretary of State, in accordance with CRS Chapter 183.

Rationale  
for  
Water Quality Standards

GOOSE LAKE

Oregon State Sanitary Authority

September, 1966

These proposed special water quality standards have been developed for Goose Lake in Oregon on the basis of:

1. Present and potential beneficial water uses as identified in Table A.
2. Historic and present water quality.
3. Preservation of present natural water quality.
4. Proposed reconsideration and revision, if necessary, of water quality standards as future information and developments may dictate.
5. Existing Oregon State Statutes and Regulations pertaining to water quality control.

Special considerations: These standards are intended to apply to that portion of the main body of Goose Lake located in Oregon. Extensive shallow areas exist in the lake, and localized evaporation, ground water inflow, and other unique circumstances may contribute to localized variances along the periphery of the lake.

Specific Water Quality Standards

Domestic or industrial activity shall not cause:

1. The dissolved oxygen content of the waters to be less than 7 milligrams per liter.

This objective exceeds the dissolved oxygen level required for maintaining a general fishery environment in Goose Lake. Goose Lake is by nature a marginal game fish environment. A dissolved oxygen value of 7.3 mg/l is the lowest measured in recent lake studies;

WATER QUALITY STANDARDS FOR GOOSE LAKE, OREGON

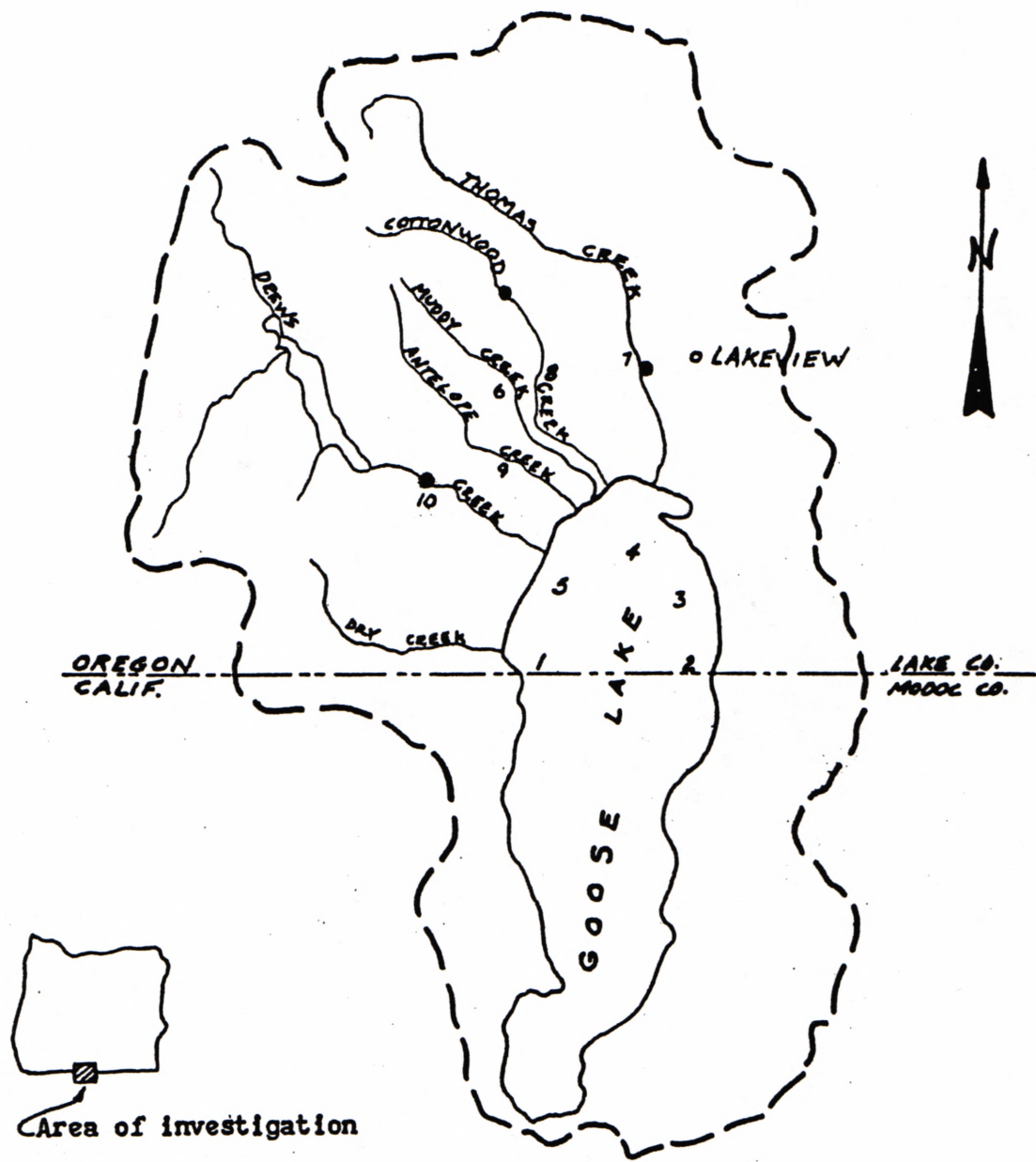
OREGON STATE SANITARY AUTHORITY

September 1966

Table A

Beneficial Water Uses to be Protected

<u>Beneficial Use</u>	<u>Present</u>	<u>Future</u>
Domestic		
Private	0	0
Municipal or public	0	0
Industrial		
Process	0	0
Boiler Feed	0	0
Cooling	0	0
Agricultural		
Irrigation	0	0
Livestock Watering	X	X
Natural Resources		
Fish	X	X
Aquatic Life	X	X
Wildlife	X	X
Recreation		
Fishing	0	X
Hunting	X	X
Water contact sports		
Swimming	0	X
Water Skiing	0	X
Pleasure boating	0	X
Navigation		
Commercial shipping	0	0
Waste Water Disposal, Dispersion and Assimilation (insofar as other beneficial uses are not affected)		
Organic	0	X
Mineral	X	X
Thermal	0	X
Hydro Power	0	0



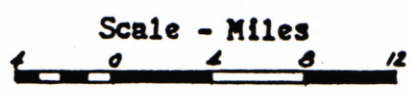
Area of investigation

LEGEND

- Drainage Basin Boundary
- USGS Gaging Stations
- / (ex) Sampling Stations

OREGON STATE SANITARY AUTHORITY  
Portland, Oregon

GOOSE LAKE DRAINAGE BASIN  
1966



APPENDIX

Surface Water Rights Summary  
 Goose Lake Basin  
 OREGON STATE SANITARY AUTHORITY  
 Table B

Streams tributary to Goose Lake	Use, cfs					Wildlife Fishlife	Total Rights
	Domestic	Municipal	Irrigation	Power	Industrial		
Antelope Creek			6.8				6.8
Cogswell Creek			21.5				21.5
Cottonwood Creek			83.9	8.5			92.4
× Cox Creek			8.8				8.8
× Crane Creek	0.1		74.7				74.8
× Drews Creek	0.2		648.1				648.3
× Dry Creek			54.2				54.2
× Kelley Creek	0.1		13.6				13.7
Thomas Creek	0.1		237.0				237.1
Misc.	0.1	1.9	19.7				21.7

Note: There are no water rights on record for Goose Lake proper (per telephone conversation, Mr. Cummings, State Engineer's Office, August 25, 1966).

Source: State Water Resources Board, Goose Lake and Summer Lakes Basin Report, March 1963.

Physical Measurements  
of Water Quality for Goose Lake  
and Streams Tributary to Goose Lake

OREGON STATE SANITARY AUTHORITY  
May 23-24, 1966

Table C

Station No.	Location (See Map)	Lake Depth, Feet	Est. Flow CFS	pH	Temp °C	DO	BOD	Cond.	MPN
1	Goose Lake	6		8.9	14	7.6	0.2	1900	< 45
2	Goose Lake	7		8.9	14	7.6	- -	1875	< 45
3	Goose Lake	6		8.9	16	7.7	0.1	1880	< 45
4	Goose Lake	4		8.9	16	7.5	0.1	1880	< 45
5	Goose Lake	3.5		8.9	16	7.6	0.8	1860	< 45
6	Muddy Creek		5	8.0	10	9.0	3.1	282	1,300
7	Thomas Creek		15	8.2	16	10.5	2.2	143	460
8	Cottonwood Creek		8	8.0	18	8.1	0.7	98.9	< 450
9	Antelope Creek		4	8.0	22	7.7	2.1	218	< 450
10	Drews Creek			8.0	20	10.1	3.7	166	< 450

PHYSICAL-CHEMICAL DATA FOR  
 GOOSE LAKE AND STREAMS  
 TRIBUTARY TO GOOSE LAKE  
 OREGON STATE SANITARY AUTHORITY  
 May 23-24, 1966

Table D

Station No.	Location (See Map)	Color	Turb.	Total Solids mg/L	Susp. Solids mg/L	Alk. *mg/L	Hard. mg/L	SO <sub>4</sub> <sup>=</sup> mg/L	NH <sub>3</sub> -N mg/L	NO <sub>3</sub> -N mg/L	PO <sub>4</sub> mg/L	Cl <sup>-</sup> mg/L	AS
1.	Goose Lake	18	177	1538	236	P= 83 T=767	61.2	110	0.58	0.14	5.6	148	
2.	Goose Lake	22	140	1505	198	P= 85 T=748	54.6	106	0.55	0.14	5.3	154	
3.	Goose Lake	18	148	1518	196	P= 82 T=764	58.8	110	0.76	0.14	5.4	153	
4.	Goose Lake	23	148	1549	218	P= 83 T=773	61.2	112	0.55	0.12	5.6	150	
5.	Goose Lake	27	162	1542	240	P= 99 T=776	63.2	104	0.50	0.15	6.2	151	
6.	Muddy Creek	47	13.5	244	36	131	113	25.2	0.88	0.21	1.0	2.8	
7.	Thomas Creek	37	6.0	125	16	72	56.4	7.0	0.46	0.10	0.20	1.3	<0.005
8.	Cottonwood Creek	54	1.2	165	59	45	47.0	5.4	0.38	0.14	0.24	1.5	
9.	Antelope Creek	54	22.5	230	27	110	78.8	13.3	0.36	0.20	0.73	1.8	
10.	Drews Creek	32	19.5	159	15	83	71.8	5.8	0.28	0.07	0.39	1.7	

\*2P=Carbonate alkalinity (P indicates phenolphthalein titration) T=Total alkalinity T-2P=Bicarbonate alkalinity

Radiological Analysis of Water  
Quality for Goose Lake and Streams  
Tributary to Goose Lake

OREGON STATE SANITARY AUTHORITY  
May 23-24, 1966

Table E

Concentrations in pCi/liter

STATION LOCATION (See map)	Collection DATE	Gross Alpha	Gross Beta	$^{40}\text{K}$	$^{65}\text{Zn}$	$^{95}\text{Zr}$ $^{95}\text{Nb}$	$^{103}\text{Ru}$ $^{106}\text{Ru}$	$^{51}\text{Cr}$
1. Goose Lake	May 24, '66	0.5	103	< 170	< 35	< 13	< 10	< 100
2. Goose Lake	May 24, '66	0.5	92	< 170	< 35	< 13	< 10	< 100
3. Goose Lake	May 24, '66	< 0.5	86	< 170	< 35	< 13	< 10	< 100
4. Goose Lake	May 24, '66	< 0.5	85	< 170	< 35	< 13	< 10	< 100
5. Goose Lake	May 24, '66	< 0.5	93	< 170	< 35	< 13	< 10	< 100
7. Thomas Creek	May 23, '66	0.6	6	< 170	< 35	< 13	< 10	< 100

Radiological Analysis of Sediment  
for Goose Lake and Streams  
Tributary to Goose Lake

OREGON STATE SANITARY AUTHORITY  
May 23-24, 1966

Table F

Concentrations in pCi/gram

Station No.	Location (See Map)	Collection Date	$^{40}\text{K}$	$^{137}\text{Cs}$
1.	Goose Lake	May 24, 1966	5.3	1.1
2.	Goose Lake	May 24, 1966	2.8	0.8
3.	Goose Lake	May 24, 1966	2.6	1.0
4.	Goose Lake	May 24, 1966	6.9	0.9
5.	Goose Lake	May 24, 1966	13.8	1.1
7.	Thomas Creek	May 23, 1966	8.8	0.4

WATER QUALITY STANDARDS FOR  
GOOSE LAKE IN OREGON  
OREGON STATE SANITARY AUTHORITY  
September, 1966

Typical Analysis for Heavy Metals  
in Goose Lake by Spectrographic Determination  
(Micrograms per liter)

Table G

<u>Constituent</u>	<u>North End</u>	<u>Center</u>
Aluminum (AL)	343.	171.
Beryllium (BE)	0.57	0.57
Bismuth (BI)	0.29	0.29
Cadmium (CD)	1.4	1.4
Chromium (CR)	1.4	1.4
Cobalt (CO)	1.4	1.4
Copper (CU)	1.4	1.4
Gallium (GA)	5.7	5.7
Germanium (GE)	0.29	0.29
Iron (FE)	106.	109.
Lead (PB)	1.4	1.4
Manganese (MN)	51.	1.4
Molybdenum (MO)	18.	10.
Nickel (NI)	4.6	4.6
Titanium (TI)	7.1	0.57
Vanadium (V)	29.	25.
Zinc (ZN)	5.7	5.7

Source: Central Valley Regional Water Quality Control Board, State of California, Goose Lake Basic Data Report, July 1966.

WATER QUALITY STANDARDS FOR  
GOOSE LAKE IN OREGON  
OREGON STATE SANITARY AUTHORITY  
September 1966

Typical Hydrographs for  
Goose Lake Basin Tributary Streams

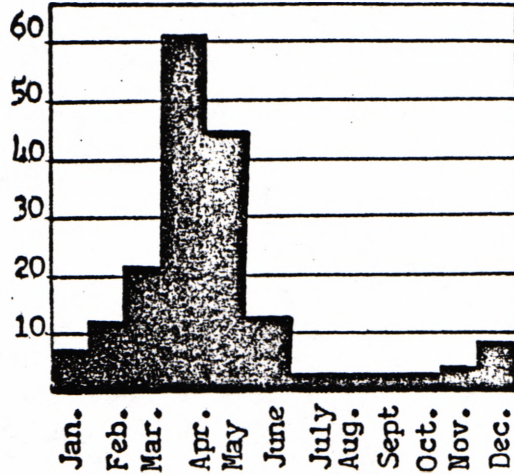


Fig. 1 Thomas Creek near Lakeview  
Average annual yield  
= 32,000 acre-ft.

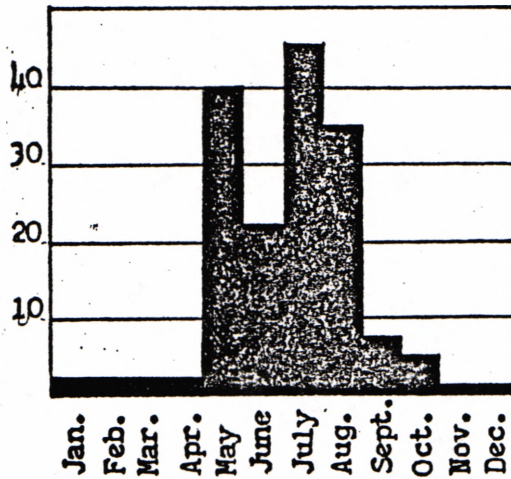


Fig. 2 Cottonwood Creek near Lakeview  
Average annual yield  
= 14,700 acre-ft.

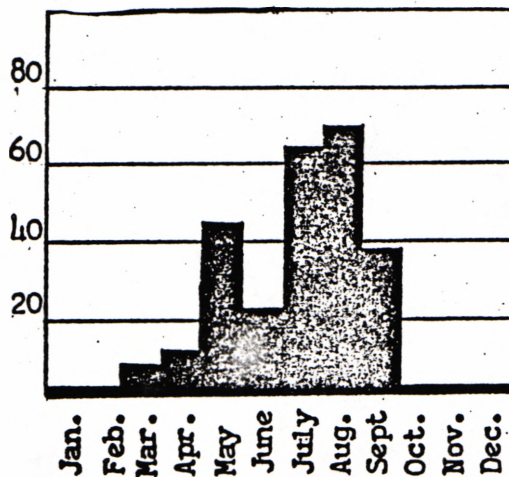


Fig. 3 Drews Creek below Reservoir  
Average annual yield  
= 54,400 acre-ft.

Water Quality Standards  
for  
Goose Lake, Oregon

OREGON STATE SANITARY AUTHORITY

September 1966

SELECTED REFERENCES

1. "Goose and Summer Lakes Basin" (Preliminary Draft), Oregon State Water Resources Board, March 1963.
2. "Goose Lake Water Quality Control Policy Basic Data Report" Preliminary Edition, Regional Water Quality Control Board, Central Valley Region, California, July 1966.
3. "Summary Report on Quality of Interstate Waters, Goose Lake, Oregon-California", U. S. Public Health Service, December 1957.
4. "Public Health Service Drinking Water Standards - 1962."
5. "Water Quality Objectives" Proposed for adoption by the Pollution Control Council, Pacific Northwest Area, August 1966.





ROBERT E. FOLEY Supervising Hydrolic Eng

F. Salem Oregon Cont. 10/1/59

Cert #	Name	Location	Amount	Price
7456	M.P.T. Bailey	Ballard Co	2.0	.09
7470	"	Effluent City of	1.0	
10941	Town of Lakewood	Well	2.0	.05
11252	Rudolph Peterson	Seepage	1.5	.25
12009	Burford Burkhardt	Fire Co. Well	1.0	.17
12266	S.J. Hubbard	seepage	1.0	.01
19943	City of Lakewood	Well	1.56	.07
23381	Fremont Sub. A.	"	1.3	.01
21917	James Laiser	Drainage	1.09	.01
22857	Town of Lakewood	"	1.0	
19872	Margaret Shering	Tandy Co.	2.45	
22806	Raymond E. Fisher	2 unnamed wells	1.5	
23915	M.K. Nelson & R.C. Nelson	Chapman St.	3.0	
	<del>Ed. Packer</del>		4.0	
22762	So. Oregon Ranches	unnamed St.	1.0	
1594	Town of Lakewood	well #7	1.2	
B1596	So. Oregon Ranches	unnamed St.	4.5	
G.43	"	well	1.95	
25312	C.V. Fenimore	Barnes St.	4.0	

Application to Divert Water to Calif. Co.

Mr. Del. Dewey 4100 Greenbriar Drive, Boise, Idaho.

Applied for permit to divert water from Columbia, Umpqua & Rogue Rivers, South in California. Oregon State Engineer turned down the application.

DIETZGEN 386-2

R.E. Foley Supervising Hydrolic Eng

D. Salem Cont. 10/1/59

Cert #	Name	Location	Amount	Price
2186	Goose Lake Valley Irr. Co	5711/1/58. 46,161.4 ac. water as follows Creek and all Tributaries.		
	Dr. Howl Cr., Antelope Cr., Muddy Cr., Cottonwood Cr., Thomas Cr., Barnes			
	Slough, Dry Creek			
	Amount of water All of Drews Cr. up to 500 cfs. with fl. of 300 cfs. together with storage of up to 65000 ac.ft.			
	Cl. Up to cfs.	fl.		
	Wylod	20		
	Antelope	20		
	Cottonwood	50		
	Thomas	50		
	Barnes Slough	10		
	Dry Creek	30		

Cert #	Name	Location	Amount	Price
14116	C.W. Reed	Drew Cr.	5.5	1.85
20626	R.T. Renner	"	17.3	.775
22878	Clyde W. Fenimore	Well #1	1.0	.63
1753	"	" #2	3.375	.10
2177	Drew Valley Ranch	Reservoir on No. 1 929.	1.25	.04
	Const. to begin before 11/20/59. (Dales Lake Res.)		1.63	
3506	J.F. Hansen	Water right cancelled 5-0		
4761	Hubert E. Koons	Dry Creek	2.31	

Robert E. Foley Supervising Hydraulic Eng. Oregon Cont. 10/1/59

Cert #	Name	Location	Acres	Permit	Remarks
7456	M.P.J. Barry	Billard Cr.	2.0	09	
7470	"	Effluent City of	1.0	09	
10941	Town of Lakeview	Well	2.0	05	
11252	Rudolph Tolson	59300	1.5	07	
12009	Burford Burkhardt	Fire Co. Hwy	1.0	01	
12266	S. J. Hubbard	see page	1.0	09	
19943	City of Lakeview	Well	1.56	07	
23381	Fremont Subdiv. Co.	"	1.3	07	
21917	James L. et al	Drainage	1.09	07	
22857	Town of Lakeview	"	1.0	07	
19872	Margaret Sherrill	Tandy Cr.	2.45	07	
22806	Raymond E. Fisher	Enhanced Sloughs	1.5	07	
23915	M.K. Nelson & R.C. Nelson	Chapman St.	3.0	07	
	Hubb. Becker		1.0	07	
22762	So. Oregon Ranches	Harwood St.	1.0	07	
11594	Town of Lakeview	Well #7	1.2	07	
15196	So. Oregon Ranches	Harwood St.	4.5	07	
G. 43	"	Well	1.95	07	
25312	C.V. Fenimore	Barnes St.	9.0	07	

Application to Divert Water to Calif. Mr. Del. Donly 4100 Greenbrier Drive Boise, Idaho. Applied for Permit to divert water from Columbia, Umpqua & Rogue Rivers, South in California. Oregon State Engineer turned

R.E. Foley Supervising Hydraulic Eng. Oregon Cont. 10/1/59

Cert #	Name	Location	Acres	Permit	Remarks
2186	Goose Lake Valley	Ill. Co. 5771 Cr. 161.4 ac.			
	Drew's Creek	and all Tributaries			
	W. How Cr.	Antelope Cr., Muddy Cr.,			
	Cotwood Cr.	Thomas Cr., Barnes			
	Slough, Dry Creek				
	Part of water	All of Drew's Cr.			
	up to 500 cfs.	with All of 300 cfs.			
	together with	Springs of up to 6500 ac-ft.			
	up to 650 cfs.				
	W. How	100	20		
	Antelope	100	20		
	Cotwood	200	50		
	Thomas	200	50		
	Barnes Slough	50	10		
	Dry Creek	150	30		

DIETZGEN 386-2

Cert #	Name	Location	Acres	Permit	Remarks
14116	C.W. Reed	Drew Cr.	5.5	085	
20626	R.T. Renner	"	17.3	075	
22878	Clyde W. Fennimore	Well #1	1.0	081	
753	"	" #2	3.375	081	
2177	Drew Valley Ranch	Reservoir on a cr. 1929	1.0	085	
	Const. to begin before	11/20/59 (Dales Lake Res.)			
3506	F. Fennimore	Antelope	5.0		
2161	Albert E. Koons	Dry Creek	2.31		

Robert E. Fiero, <sup>1945</sup> Portland Oregon  
 Bill Ballard <sup>1921/59</sup> Geologic Map of Calif.

U.S. Forest Service - Portland  
 Cottonwood Creek 1958  
 " Reservoir 1958  
 207,552 Acres 0 Calli. N. Hines  
 1017 U.S. Forest Service 65,396 Acres  
 #658 Fremont National Forest, Dunsmuir  
 Mine - Div. of Mines - Calif.  
 Mineral Information Service - Div. of Mines - Calif.  
 U.S.G.S Groundwater - Tube Neukond  
 Subject: Ground water available to  
 development for irrigation in the  
 Fort Rock Valley, northern Lake Oregon.  
 The G.W. body is recharged by  
 precipitation - largely by that falling  
 on the uplands about the edge of  
 the basin. The G.W. has is something  
 like 8 to 10-years between the time  
 of precipitation and (re)emerging  
 responses in the water table beneath  
 the valley plains; i.e. The record 7-8  
 inch rainfall for the 9-year period  
 1931-39 (recorded at Fremont) produced  
 a low flat trough in hills recordings  
 in years 1942-50. Possibility of 20% the  
 the sum of 9" of water added to G.W.  
 by 2" inch in precip.

42.4 Rim of definite Outlet Channel  
 Goose Lake 400' wide in Salt Grass  
 Clear of Junipers - bare dikes see ( )  
 6-foot high. - A little water in excavation  
 both N. & S.  
 43.4 Grass channel between Juniper  
 100' wide.  
 A rise of H.A. would overflow  
 dike and flood into Upper Fitt.

Robert E. Foley, <sup>and</sup> ~~and~~ Portland Oregon  
 Bill Bullard & <sup>California</sup> Map of Calif  
 1925-29  
 U.S. Forest Service - Portland  
 Cottonwood Creek  
 Reservoir 1958  
 207,552 Acres  
 U.S. Forest Service 65,296 Acres  
 #608  
 Fremont National Forest  
 Mineral Information Service - Div. of Mines - Calif  
 Geology of N.E. California.

U.S.G.S. Groundwater - Rube Newcomb.  
 Subject: Ground Water available to  
 development for irrigation in the  
 Fort Rock Valley northern Lake, Oregon.  
 The G.W. body is recharged by  
 precipitation - largely by that falling  
 on the uplands about the edge of  
 the basin. The G.W. lag is something  
 like 8 to 10 years between the time  
 of precipitation and corresponding  
 responses in the water table beneath  
 the valley plains; i.e. The record 7-8  
 inch fall for the 9-year period  
 1931-39 (record at Fremont) produced  
 a low flat trough in lake recordings  
 in years 1942-50. Porosity of rock the  
 the sum of 9" of water added to G.W.  
 by 2" inc. in precip

INDEX 20 386-2

42.4 Rim of definite Cut-off Channel  
 Goose Lake 100' wide in soft grass  
 Clear of Tumpers - have dikes here  
 6-foot high. - (A little water in excavation  
 both N & S)  
 43.4 Grass Channel between Tumpers  
 100' wide  
 A rise of 11.4' would overflow  
 dike and flood into upper Pitt.

V





Robert E. Foley, Supervising Hyd. Engr. Salem, Ore.

10/1/59 Cont'd

Thomas Creek Cont'd	sec. ac.	Twp 40 R 18 E	sec. ac.
J.C. Hotchkiss	523 ac.	1 600	24 311
3-Owners	219 "	12 389	25 620
7- "	680 "	13 583	36 518
Lake Co. Ag. Soc.	46 "	Twp 40 R 19 E	19 F
Leechman & Bishop	732 "	1 637	16 640
J.E. McCoul	160 "	2 640	17 640
11-Owners	390 "	3 640	18 640
3- "	363 "	4 640	19 618
C.W. Reynolds	300 "	5 640	20 640
7-Owners	377 "	6 640	21 640
W. Thompson	160 "	7 640	22 339
5-Owners	205 "	8 640	27 891
Cogswell Cr.		9 640	28 586
3-Owners	90	10 640	29 640
Geo. Fitzgerald	378	11 639	30 607
By 1913 - Constructed 63,500		12 277	31 640
A. Ft. Reservoir & Truncated		12 515	32 640
10,000 Acres.		15 618	33 365
Twp 38 R 19 E W.M. R-20 E.M.W.		Twp 40 N R 20 E	
Sec. Ac.		Sec. Ac.	
7 82	Twp 39 R 19 E	3 356	8 479
8 12	Sec. Ac.	3 640	8 619
17 4	3 4	4 120	10 280
18 300	4 552	5 588	11 507
19 560	5 640	Twp 41 R 19 E	
20 12	6 640	Sec. Ac.	
24 560	7 640	4 45	8 257
25 411	8 640	5 622	17 168
26 293	9 640	6 640	18 219
35 416	10 220	7 570	20 130
36 All	15 371	8 640	
	16 640	9 640	
	17 640	10 640	
	18 640	11 640	
	19 640	12 640	
	20 640	13 640	
	21 640	14 640	
	22 401	15 640	
	23 3	16 640	
	24 3	17 640	
	27 463	18 640	
	35 47	19 640	
	36 640	20 640	

Thomas Creek Cont'd

Thomas Creek Cont'd	sec. ac.	Twp 39 R 19 Cont'd	sec. ac.
J.C. Hotchkiss	523 ac.	1 600	24 311
3-Owners	219 "	12 389	25 620
7- "	680 "	13 583	36 518
Lake Co. Ag. Soc.	46 "	Twp 40 R 19 E	19 F
Leechman & Bishop	732 "	1 637	16 640
J.E. McCoul	160 "	2 640	17 640
11-Owners	390 "	3 640	18 640
3- "	363 "	4 640	19 618
C.W. Reynolds	300 "	5 640	20 640
7-Owners	377 "	6 640	21 640
W. Thompson	160 "	7 640	22 339
5-Owners	205 "	8 640	27 891
Cogswell Cr.		9 640	28 586
3-Owners	90	10 640	29 640
Geo. Fitzgerald	378	11 639	30 607
By 1913 - Constructed 63,500		12 277	31 640
A. Ft. Reservoir & Truncated		12 515	32 640
10,000 Acres.		15 618	33 365
Twp 38 R 19 E W.M. R-20 E.M.W.		Twp 40 N R 20 E	
Sec. Ac.		Sec. Ac.	
7 82	Twp 39 R 19 E	3 356	8 479
8 12	Sec. Ac.	3 640	8 619
17 4	3 4	4 120	10 280
18 300	4 552	5 588	11 507
19 560	5 640	Twp 41 R 19 E	
20 12	6 640	Sec. Ac.	
24 560	7 640	4 45	8 257
25 411	8 640	5 622	17 168
26 293	9 640	6 640	18 219
35 416	10 220	7 570	20 130
36 All	15 371	8 640	
	16 640	9 640	
	17 640	10 640	
	18 640	11 640	
	19 640	12 640	
	20 640	13 640	
	21 640	14 640	
	22 401	15 640	
	23 3	16 640	
	24 3	17 640	
	27 463	18 640	
	35 47	19 640	
	36 640	20 640	



Lloyd Project - 28 block - Multinational (Shawby)  
 Ross Bldg - 5th & Pine - Portland  
 R. E. Ellis - Western States SCS.  
 Thompsons - Oregon SCS.  
 Merrill V. Fenwick - 4th Floor  
 Mosaic in Lakeview - Existing  
 Cottonwood & largest controlled  
 " " Reservoir built on Earth Slide  
 Old NW Site N.E. Cor. Sec. 12 T. 38 S. R. 5 E.  
 800 ft. Crest 1200 ac. ft. 60' water depth Max.  
 SCS - 506 Application - ? if it ever  
 Will be built at least 4-years away

Kenneth N. Phillips - U.S.G.S  
 Dist. Eng. - Surface Water Branch  
 P.O. Box 3418  
 Portland 8, Oregon  
 8th Floor of Lloyd Bldg.

10/1/59 Office of State Engineer near Salem Oregon  
 R.E. Ellis Tributaries of Goose Lake  
 DINKS PLACE  
 Goose Lake Valley Irrigation Co.  
 A.F. Perkins Lakerview 1874 73.5 C.N. Reed Lakerview 663  
 " " " " 50.4 J. Diners 24  
 " " " " 1879 89.75 Geo. Stevens Lakerview 407  
 " " " " 1900 20.00 J. Diners 194  
 " " " " " 56.5 G. Wright " 220  
 D.O. Tracy " 1884 112.4 Thomas Creek  
 Antelope Creek  
 C. Burton Lakerview 1883 118.9  
 C. Borel " 1890 75.6 M.P.T. Barry " 331.2  
 E. Hilliard " 1878 77 F.H. Becke " 80  
 Cottonwood Creek  
 M.P.T. Barry " 169  
 J. Ambrose Lakerview 10 J.T. M. Batchelder " 57.7  
 J. Baker Bandon 10 F.F. Barnes " 283  
 C. Bishop Lakerview 326.7 Mary Jones " 116  
 Bonalkin Burtville 10 W.R. Barnard " 160  
 Buhmane Miller Hill 10 840  
 C.N. Reed Lakerview 114.3 G-Owners 355  
 4- " 360  
 Emma Carlson " 10 See book of this sheet / 90  
 A.C. Cochran 20 300 4B. Davis & 8900  
 G-Owners 208 100 " Willow  
 Lester Hanger 160 100 " Shuloff  
 Louisa Johnson Lakerwood 160 50 " Maddy  
 J. Diners 252 200 " Thomas  
 " 270 200 " Cottonwood 1909  
 " " " " 1912

Lloyd Project - 28 block - Multimedial (L) Shoring  
 Ross. Bldg - 5th & Pine - Portland  
 Ellis Hart - Western States SCS.  
 Thomas H. Seth - Oregon SCS.  
 Merrit V. Fenwell - 4th Floor Soil Cons  
 Mosaic in Lakewood Existing  
 Cottonwood & largest Controlled #1  
 " Reservoir built on Earth Slope  
 Old Mill Site N.E. Con. Sec. 12 T38S18E  
 800 ft. Crest 1200 ac. ft. 60' water depth. Max. 1  
 SCS - 506 application - ? if it ever  
 Will be built at least 4-years away

Kenneth N. Phillips - U.S.G.S  
 Dist. Eng. - Surface Water Branch  
 P.O. Box 3418  
 Portland 8, Oregon  
 8th Floor of Lloyd Bldg.

10/15/59 Office of State Engineer - 5411 N Oregon Street  
 R.E. Holt, Tr. butaries of Goose Lake  
 Drensic Creek (SHEET 1)

Name	Tr. Office Data	Acres	Name	Acres
A.E. Perkins	Lakewood 1874	73.5	C.W. Reed	Lakewood 663
"	"	50.4	J. Owners	24
"	"	89.75	Geo. Stevens	Lakewood 407
"	"	20.00	J. Owners	194
"	"	56.5	G.W. Night	220
D.O. Tracy	"	112.4	Thomas Creek	
	Antelope Creek		Alstrom	Lakewood 345
C. Bowman	Lakewood 1883	118.7	"	138
C. Borum	"	1890	M.P.T. Barry	" 331.2
E. Hilliard	"	1878	P.H.A. Boake	" 80
	Cottonwood Creek		M.P.T. Barry	" 169
J. Ambrose	Lakewood 10	10	J.T. M. Bartelmer	" 57.7
J. Baker	Bandon 10	10	F.F. Boners	" 283
C. Bampton	Lakewood 321.7	321.7	Mary Boners	" 116
Bonilton	Bandon 10	10	W.R. Bernard	" 160
Bubenne	Miller 10	10		840
C.W. Reed	Lakewood 114.3	114.3	J. Owners	355
Emm Carbon	"	10	"	360
A.C. Cochran	"	20		
J. Owners	"	208		
Lester Hays	"	160		
Louis Johnson	Lakewood 160	160		
J. Owners	"	252		
"	"	270		

See book of this sheet 190  
 55 page for total acreage  
 300.53. Drensic. 89.00

100 " Milton  
 100 " Antelope  
 50 " Muddy  
 200 " Thomas  
 200 " Cottonwood

1900  
 1900