STATE OF CALIFORNIA
STATE WATER RIGHTS BOARD

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In the Matter of)
) Source: Lick Creek
Application 16358)
) County: Shasta
by M. R. and Leora R. Caswell)

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Decision No. 877

Decided: November 13, 1957

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In attendance at Investigation conducted by the State Water Rights Board on August 7, 1956:

M. R. Caswell	Applicant
Leora R. Caswell	Applicant
Grover Edler	Protestant
Augusta Sperry	Protestant
A. D. Sperry	Husband of Protestant Sperry
E. C. Johnson Assistant Hydraulic Engineer	Representing State Water Rights Board

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DECISION

Substance of the Application

Application 16358 is for a permit to appropriate 1.0 cubic foot per second, to be diverted year-round, for immediate application to beneficial use. The source is Lick Creek, tributary to South Fork of North Salt Creek, thence Sacramento River in Shasta County. The applicants

propose to divert at a point within the SW¼ of NE¼ of Section 18, T36N, R4W, MDB&M, by means of a concrete box, which is to be set below a natural fall formed by a rock ledge in the channel, and from which is to lead about 3,600 feet of 6-inch diameter concrete pipe with short sections of flume as necessary across large rocks, gullies, etc. The applicants claim ownership of the land to be served, and that the point of diversion is to be located on Forest Service land, access to which has allegedly been granted by the Forest Service. The water will be used for household purposes, for stockwater for 50 head of ranch cattle, and for the irrigation of 80 acres of general crop and pasture within the W½ of Section 7, T36N, R4W, MDB&M, with the irrigation season extending from March 1 to November 1 of each year.

Protests

Grover Edler and Augusta Sperry protested Application 16358 on the apprehension of possible interference with the water supply of the Edler Ranch located in the E½ of SE¼ of Section 2, T36N, R5W, MDB&M. Protestant Sperry claims that she owns two acres of the ranch lying on the east side of North Salt Creek, and that the remainder of the ranch is owned by protestant Edler. Jointly, the protestants claim that approval of the application will deprive them of water which the ranch has been using for more than fifty years under

right acquired by posting of notice on November 1, 1912, and filing a copy thereof with the Shasta County Recorder. They agree that the protest may be disregarded and dismissed if it can be shown that their rights will not be interfered with by the diversion contemplated under the application.

Answer

The answer to the protests contains an assertion that to the best knowledge of the applicants only about 1/2 acre of the protestant Edler's land has been irrigated during the last nine years, that the amount of water claimed by the protestants, namely 500 inches, is far in excess of the needs of the ranch, and that the applicants believe that only about 30 acres of protestant Edler's portion of the ranch are irrigable. The applicants further claim that to the best of their knowledge no water has been used on protestant Sperry's property during any of the nine years.

Field Investigation

The applicants and protestants, with the approval of the State Water Rights Board, stipulated to proceedings in lieu of hearing as provided for under Section 737 of the Board's Rules, and a field investigation was conducted on August 7, 1956, by an engineer of the Board. The applicants and protestants were present at the investigation.

Records Relied Upon

Application 16358 and all relevant information on file therewith; map of Shasta National Forest, dated 1946, scale 1 inch = 2 miles; United States Geological Survey Water Supply papers, Part II Pacific Slope Basins in California covering years 1945 through 1954, and State Water Resources Board Bulletin No. 1 "Water Resources of California," 1951.

Information Obtained by Field Investigation

According to the "Report on Investigation of Application 16358," dated November 9, 1956, Lick Creek originates in Shasta County within the SW¼ of Section 18, T36N, R4W, MDB&M, at an altitude of about 3000 feet, flows in a northeasterly direction about one-fourth mile to the proposed point of diversion and on another one-fourth mile to the confluence with another small stream within the NE¼ of said Section 18, thence in a northerly direction a distance of about 1½ miles to the confluence with South Fork of North Salt Creek within the NW¼ of Section 7 of the same township. From this point the South Fork flows a distance of about one-half mile to the confluence with North Salt Creek. North Salt Creek continues from this point about one-half mile in a northwesterly direction to the protestants' point of diversion which is located within the SE¼ of SE¼ of Section 1, T36N, R5W, MDB&M, and thence about one mile to the Sacramento River. The investigating

engineer estimates that the watershed above the applicants' point of diversion is about one-half square mile.

Relative to the water supply, the report includes the following statement:

> "Flow of Lick Creek near the proposed point of diversion, at the time of investigation, was an estimated 0.5 cfs and Mr. Caswell indicated that this was about normal for that time of year. He advised that flow during the spring and early summer is considerably greater but gradually diminishes as the summer progresses before picking up when the weather becomes cooler in the fall.... Flow at the protestants' point of diversion was an estimated 6-7 cfs. Of this total approximately one-half was being diverted by the protestants with the remainder continuing down North Salt Creek and discharging into the Sacramento River. It was agreed that this was about the normal flow for this season of the year; however, Mr. Sperry advised that over a period dating back more than 50 years he could recall two summers when the creek was nearly dry.... Mr. Caswell stated that for the past nine years there had continuously been a considerable amount of water flowing below the protestants' point of diversion and into the Sacramento River."

As to use of water the report of investigation indicates that no development has yet been commenced by the applicants, that protestant Edler diverts from North Salt Creek by means of a low rock and sand dam and conveys the water by ditch approximately one mile for use upon about one acre of pasture, orchard and domestic garden, together with domestic and stockwatering use, that of the estimated 3½ cfs being diverted by Edler, 1½ to 2 cfs was lost en route, that numerous small field ditches are used to distribute the water for irrigation with excess water flowing either into the Sacramento River or North Salt Creek, that no attempt was made to determine the amount of spillage but

the excess was "considerable," and that in the opinion of the investigating engineer only an additional 2-3 acres within Edler's portion of the ranch could be irrigated.

Protestant Sperry's place is located directly across North Salt Creek from the Edler property but to the knowledge of Mr. Sperry, water had never been used on the former property.

Discussion of Other Information

As heretofore stated, the source under consideration is indirectly tributary to Sacramento River which flows into the ocean at Suisun Bay. For the purpose of the following analysis the stream system has been arbitrarily divided into three sections as follows: Reach 1 - from applicants' point of diversion to junction of North Salt Creek with Sacramento River; Reach 2 - Sacramento River from junction with North Salt Creek to Shasta Dam; and Reach 3 - Sacramento River from Shasta Dam to Suisun Bay.

Table 54, page 321, of State Water Resources Board Bulletin No. 1 "Water Resources of California" includes precipitation data of four precipitation stations in the Sacramento River Basin and two precipitation stations in Pit River Basin above Shasta Dam as follows:

Station	Elevation	Precipitation in inches mean for 1897-1947
Sacramento River Basin		
Delta	1138	63.59
Dunsmuir	2285	49.87
McCloud	3270	48.25
Mt. Shasta	3550	34.44
Pit River Basin		
Big Bend	2000	65.70
Montgomery Creek	2180	53.58

Plate 3 of the same publication is an isohyetal map showing the geographical distribution of precipitation in California including the area under consideration. Plate 3 shows that practically the entire watershed of the Sacramento River above Shasta Dam is within the zone of intensity of precipitation of "more than 50 inches," and that the area within the applicants' project receives a mean annual rainfall of about 70 inches, with precipitation decreasing progressively to about 35 inches at the upper end of the watershed.

There appear to be no continuous records of stream flow available at any point along Reach 1. A U.S. Geological Survey gaging station has been maintained on Sacramento River "at Delta, California" and daily records for the water years 1945-46 through 1953-54 are published in the water supply papers of that agency. This station which is located about five miles downstream from the junction of Sacramento River and North Salt Creek and about two miles upstream from the upper end of Shasta Lake measures the runoff of 427 square miles of watershed

including the source under consideration. Runoff in acre-feet and per cent of annual runoff by months during the season March 1 to November 1 for the nine-year period of record was as follows:

TABLE I
FLOW OF SACRAMENTO RIVER AT DELTA, CALIF.
(In acre-feet and % of annual runoff)

Water Year	Oct.	Mar.	Apr.	May	June	July	Aug.	Sept.
	30,980	81,740	118,500	93,110	32,290	16,790	11,910	10,770
1945-46	3.7	9.7	14.1	11.1	3.8	2.0	1.4	1.3
	12,520	100,600	69,780	34,310	61,750	17,180	11,690	9,810
-47	2.8	22.8	15.8	7.8	14.0	3.9	2.6	2.2
	33,040	54,480	175,900	138,400	82,210	25,990	15,990	14,120
-48	4.3	7.1	22.9	18.0	10.7	3.4	2.1	1.8
	15,780	208,400	150,300	90,810	29,670	14,560	11,330	10,020
-49	2.4	32.4	23.4	14.2	4.6	2.3	1.8	1.6
	11,410	87,090	117,800	72,610	27,600	13,000	9,980	10,130
-50	2.3	17.3	23.5	14.4	5.5	2.6	2.0	2.0
	112,900	81,120	86,080	90,780	27,320	16,000	12,360	10,990
-51	12.1	8.7	9.3	9.8	3.0	1.7	1.3	1.2
	15,990	135,300	199,400	165,400	61,610	28,100	16,460	13,810
-52	1.5	12.4	18.3	15.2	5.2	2.6	1.5	1.4
	13,520	111,000	128,100	118,800	80,190	30,900	17,770	14,350
-53	1.4	11.9	13.7	12.7	8.6	3.3	1.9	1.5
	16,500	143,300	197,200	96,330	33,120	18,800	17,450	14,750
-54	1.7	14.7	20.3	9.9	3.4	1.9	1.8	1.5
	29,180	111,440	138,110	100,600	48,410	20,150	13,860	12,080
Average	3.6	15.2	18.0	12.6	6.4	2.7	2.0	1.6
	15,990	100,600	128,100	93,110	33,120	17,180	12,360	10,990
Median*	2.4	12.4	18.3	14.2	5.2	2.6	1.8	1.6

*Median is the value that divides the record into an equal number of greater and lesser quantities.

The average annual flow past the gage for the 9-year period is 790,970 acre-feet or 1,855 acre-feet per square mile. The investigating engineer reports that the watershed above applicants' point of diversion is about one-half square mile and the area contributing to the flow at the protestants'

point of diversion scales 19 square miles from the 1946 edition of Shasta National Forest map. Assuming that the average runoff of 1,855 acre-feet per square mile for the entire watershed above the gage is representative of that occurring on North Salt Creek and tributaries, it may be expected that the following quantities reached the applicants' and protestants' points of diversion during the March-October season for the same period.

TABLE II.

ESTIMATED RUNOFF AT APPLICANTS' AND PROTESTANTS' POINTS OF DIVERSION
(In acre-feet and cubic feet per second)

Month	Runoff af sq. mile	Applicants 1/2 sq. mile		Protestants 19 sq. miles	
		af	cfs	af	cfs
March	282	141	2.3	5350	86.3
April	334	167	2.8	6350	106
May	234	117	1.9	4440	71.8
June	118.5	59.2	1.0	2270	37.9
July	50.0	25.0	0.4	950	15.3
Aug.	37.1	18.5	0.3	705	11.4
Sept.	29.7	14.8	0.2	565	10.9
Oct.	66.7	33.3	0.5	1260	20.3

Again assuming that the flow which occurred during the 9-year period of record is representative of the flow which on an average will occur in the future, it is apparent that there is ample water flowing in North Salt Creek during every month of the specified irrigation season to allow appropriation of the entire flow at the applicants' point of diversion without injury to the protestants.

No detailed information is available as to the use of water from Sacramento River along Reach 2. The U.S. Geological Survey water supply papers do indicate that there are small diversions for irrigation above the "at Delta, Calif." gage. However, in view of the flows passing the gage as shown in Table I, it is concluded that diversion of the amount requested under Application 16358 would reduce the flow in Reach 2 an insignificant amount insofar as any diversion along that reach is concerned.

Insofar as the uses and rights along Reach 3 (Sacramento River downstream from Shasta Dam) are concerned, the season during which diversion will be made under the application is of little consequence. Shasta Dam creates a lake of capacity of about 4,500,000 acre-feet and is operated on the basis of considerable holdover storage from year to year. Likewise, reservation of reservoir storage space for flood control frequently requires that water be released downstream at a rate considerably greater than can be beneficially used. Such excesses appear to be available for appropriation by users above the dam without regard to the time of year the actual diversion is made.

Summary and Conclusions

The Board finds that there is unappropriated water in the source designated in Application 16358 available to supply applicants, which water may be appropriated to a substantial extent in the manner proposed in the application

without injury to any other lawful user of water, that the intended uses are beneficial and that said application should be approved and permit issued to applicants subject to the usual terms and conditions.

O R D E R

Application 16358 for a permit to appropriate unappropriated water having been filed with the former Division of Water Resources, protests having been filed, jurisdiction of the administration of water rights including the subject application having been subsequently transferred to the State Water Rights Board and an investigation having been held by the Board, and said Board now being fully informed in the premises:

IT IS HEREBY ORDERED that Application 16358 be, and the same is, hereby approved, and it is ordered that a permit be issued to the applicants subject to vested rights and to the following terms and conditions, to wit:

1. The amount of water to be appropriated shall be limited to the amount which can be beneficially used and shall not exceed 1 cubic foot per second, which amount may be diverted from about January 1 to about December 31 of each year.

The equivalent of such continuous flow allowance for any thirty-day period may be diverted in a shorter time if there be no interference with vested rights.

2. The maximum amount herein stated may be reduced in license if investigation so warrants.

3. Construction work shall begin on or before June 1, 1958, and shall thereafter be prosecuted with reasonable diligence, and if not so commenced and prosecuted, the permit may be revoked.

4. Said construction work shall be completed on or before December 1, 1960.

5. Complete application of the water to the proposed use shall be made on or before December 1, 1961.

6. Progress reports shall be filed promptly by permittee on forms which will be provided annually by the State Water Rights Board until license is issued.

7. All rights and privileges under the permit including method of diversion, method of use and quantity of water diverted are subject to the continuing authority of the State Water Rights Board in accordance with law and in the interests of the public welfare to prevent waste, unreasonable use, unreasonable method of use or unreasonable interference with vested rights.

Adopted as the decision and order of the State Water Rights Board at a meeting duly called and held at Sacramento, California, on this 13th day of November, 1957.

/s/ Henry Holsinger

Henry Holsinger, Chairman

John B. Evans, Member

/s/ W. P. Rowe

W. P. Rowe, Member