

STOCKHOLDERS MEET SATURDAY

The marginal swamp lands are included, 94,000 acres. The river is therefore regulated by this large area of lake and swamp. From Upper Klamath Lake the stream falls abruptly about 57 feet, and is called Link River. At Keno the lower rapids of Klamath River begin. Link River also supplies Lower Klamath Lake, which covers 27,400 acres with water and 88,400 acres of water and marginal swamp. The lower lake acts as an additional regulator, and the fluctuation in river height at Keno probably does not vary over 2 or 3 feet.

"On October 25, 1903, Klamath River was measured at Klamath by Mr. H. E. Green at its low-water stage, and its volume found to be 2,993 second-feet. It was stated at the time that the river was lower than at any previous time for twelve years. The low-water flow of Link River in 1904 was 1,773 second-feet. Upper Klamath Lake may be used as a storage reservoir, if desirable. The elevation of the Klamath River

development on the river are very great, and it will be shown that there later is the possibility of using this power for irrigating arid lands.

"It appears to be feasible to make an excavation near Keno in the channel of the river at the head of the rapids, where the river drops 60 feet in a short distance, by means of which the water can be drawn off of the marshes surrounding Lower Klamath Lake, as well as from Lower Klamath Lake itself.



P. L. FOUNTAIN,
Vice President of the Association.

This difference in elevation probably could be made sufficient so that the flood waters of Lost River which are not impounded in the reservoir sites on Lost River could be turned into Klamath River and away from Tule, or Rhett Lake. The advantage of such a proceeding will be treated later.

"Lower River.—Lost River is an interstate stream, which flows to a material



E. L. ACCLIGATE,
Secretary of the Association.

extent through Clear Lake. Horse Fly reservoir site, on Miller Creek, tributary to Lost River, has a drainage area above it roughly estimated at 230 square miles. Its elevation is 4,792 feet. The basin is fairly well timbered and apparently has a fall rainfall and winter stream flow.

The reservoir basin is very flat and swampy and it is estimated that the area of the valley is about 3,500 acres, and that a dam 50 feet high would give a capacity of 100,000 acre-feet. The river flows through a narrow canyon of basaltic rock at the dam site. The land in this reservoir site is largely public and has been withdrawn for a reservoir. The site is of very substantial importance.

"Clear Lake reservoir site is situated on the southern branch of Lost River, and above Clear Lake the stream is known as Willow Creek. The drainage area of Willow Creek, above Clear Lake dam site, is 577 square miles. The area of this lake is 8,530 acres. A dam 49 feet high at dam site below the lake would probably hold half a million acre-feet. The dam site is in a canyon of volcanic rock. Apparently there are excellent spillway opportunities and probably the dam could be best constructed of earth and loose rock. There is a very pronounced public opinion to the effect that the principal supply for Lost River comes down Willow Creek. The grades into Clear Lake are very singular. Wil-



G. W. WHITE,
Treasurer of the Association.

low Creek in flood discharge overflows into Clear Lake, but at the same time a large portion of this water passes down Lost River. When the creek falls Clear Lake begins draining into Lost River and discharges through its intake channel. The area of Clear Lake, according to land-office surveys, is 9,231 acres. The area of adjacent swamps, according to survey, is 15,000 acres. The drainage basin above the lake is covered by a sparse growth of pine trees. The elevation of the lake is 4,583 feet. The rise of the lake during the past winter would indicate an inflow of about 150,000 acre-feet additional to the discharge of Lost River, which was continuous during the inflow period.

"Lost River discharges into Tule Lake, the area of which is 90,000 acres. During the past winter the lake had a net rise of 7 feet, indicating an inflow of

850,000 acre-feet. The past winter, however, was one of unusual rainfall. The evaporation in this region is believed to be about 3 1/2 feet. As this lake maintains an area of about 90,000 acres, this would indicate a mean annual net flow of Lost River of 315,000 acre-feet. This agrees with a statement as to the usual annual



D. V. KUYKENDALL,
Attorney for the Association.

rise of Tule Lake. There is the opportunity, both at Clear Lake and Horse Fly Valley, to hold over water from wet to dry years. It would seem reasonable to expect that 200,000 acre-feet annually might be obtained from these two reservoir sites. The water from these reservoir sites would naturally be used on Langells Valley, which contains about



H. L. HOLGATE,
First Attorney for Reclamation Service.

12,000 acres of irrigable land; Poe Valley, containing 10,000 acres; Swan Lake Valley, 20,000 acres; Yonna Valley, 20,000 acres; 72,000 acres in all. These areas are gross and only roughly approx-

imate, and probably will be increased by a detailed investigation. It would seem reasonable, however, to consider that these two reservoir sites can irrigate all the underlying agricultural lands in the valleys named. There is practically no public land in Poe Valley, some public land in Langells Valley, and quite a large amount of public land in Yonna and Swan Lake valleys.

"As previously stated, the waters not impounded in Horse Fly and Clear Lake reservoirs could be diverted into Klamath River and away from Tule Lake.

Irrigable Lands.
"Butte Valley.—Butte Valley is in Siskiyou county, California, adjacent to the northern line of the state. It is roughly estimated that it contains over 100,000 acres of agricultural lands including some 10,000 or 15,000 acres of Government land in the southern portion. The elevation is about 4,250 feet, between 150 and 200 feet above the level of Lower Klamath Lake. Butte Creek and Antelope Creek flow into this val-



M. D. WILLIAMS,
Engineer of the Association.

ley. The mid-summer water supply, however, is quite small, and is used for irrigation. There would be an abundant water supply for pumping from Lower Klamath Lake, and a great abundance of power obtainable from Klamath River for lifting this water into Butte Valley. The question as to whether it is commercially feasible to do this is not yet ascertained, but the withdrawals of public land along Klamath River for the purpose of generating power pending this investigation are believed to be justified.

"Tule Lake.—Tule, or Rhett, Lake has an area of 90,000 acres, supplied from the inflow of Lost River. Tradition states that at times in the past the lake has been almost dry, that teams have crossed over very considerable portions of its area, and that sagebrush stumps are found in the lake. If Lost River water can be mostly impounded

in reservoirs and the surplus diverted into Klamath River by lowering the outlet of the river at Keno and by throwing a levee across Lost River, there practically will be no other supply into Rhett Lake, and with an annual evaporation of 3 1/2 feet, it is believed that the lake would rapidly shrink in area and uncover a large area of land. It is a fresh-water lake. This lake is inter-



J. SCOTT TAYLOR,
Secretary of the Irrigation Committee.

state and navigable, but is only slightly so used. The margin of the lake is managed by the land office. If the lands that are uncovered are public lands that could be disposed of under the reclamation act, they could be very easily irrigated by means of a diversion canal,



JACOB RUECK,
Director.

either from Klamath river or from Lower Klamath Lake.
"LOWER KLAMATH LAKE.—Lower Klamath Lake has a water surface of 29,400 acres and a swamp and water surface of 88,330 acres. If the outlet from the

lake at Keno can be lowered, as previously suggested, the greater portion of this swamp land can be drained, and probably a large portion of the lake bed itself. The swamp lands are all in private ownership, title having been conveyed by the state.

"LAND WITHDRAWALS.—It was deemed advisable to withdraw, at least temporarily, all public lands in the Clear Lake and Horse Fly reservoir sites, the public lands along Klamath River, and such townships as contained public irrigable lands. If the beds of these navigable lakes are public lands, as is believed to be the case, it will probably be possible to reclaim 100,000 acres of public land in addition to over 150,000 acres of private land under this project.

"SECURITIES.—The following is a very rough estimate of the gross irrigable areas:

Irrigable from Clear Lake and Horse Fly Reservoirs.

	Acres. Acres.
Langells Valley	12,000
Poe Valley	10,000
Swan Lake Valley	30,000



O. A. STEARNS,
Director.

Yonna Valley	20,000
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Total.....72,000

Irrigable from Klamath River.

Between Klamath and Merrill	60,000
From Merrill to Carrs	10,000
Bed of Tule Lake	50,000
Bed of the Lower Klamath Lake	20,000

Total	140,000
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Butte Valley, irrigable by pumping	100,000
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Total	312,000
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The water supply is believed to be adequate for this irrigation.

Property Acquired.

The most difficult obstacle that governs

Continued on page 4.



T. H. HUMPHREY,
Project Engineer.

near the Southern Pacific crossing at Klamath, according to the topographic sheets of the Geological survey, is less than 2,300 feet. The elevation of the river at Keno is 4,980 feet, as determined by levels run from Klamath, which indicated a fall of about 1,900 feet in a distance of 40 miles. Near the mouth of Falls Creek there is a drop in the river of 40 feet in 2 miles, as indicated by the topographic map on the Shasta quadrangle. With a low-water flow of 2,000 second-feet, this 40-foot drop would develop 91,000 theoretical horsepower. Beginning at a point about six miles below Keno the map indicates a drop in the river of 800 feet in a distance of 10 miles—sufficient to produce 181,000 theoretical horsepower, with a flow of 2,000 second-feet. From this it will be seen that the opportunities for power

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