

OREGON SURVEYS

The Federal government, through the reclamation service, has been pursuing investigations during the past season as to 200,000 acres now valueless land in Umatilla and Morrow counties, in Malheur county and in Harney county. In all these projects the summer flow of the streams has been practically all appropriated and any further reclamation will involve the construction of more or less costly dams for retaining the flood waters of winter and early spring.

An idea of the cost of these dams is best illustrated by the estimates on the big dam proposed for the Nicaragua canal. Including controlling works and spillway, these were for \$3,000,000 to \$5,000,000 according to design, the final estimates adopted being for \$4,500,000.

The best interests of the country demand, and the reclamation service itself requires, that the cost of construction must not exceed the value of the enterprise when completed.

The largest project under consideration may not exceed 50,000 acres of land. When the value of such land, with water, but otherwise unimproved, is considered, it is readily seen that much study and the most thorough investigation is required of the reclamation service.

The irrigable land, as well as all reservoir sites and canal lines, are being gone over and carefully mapped, showing all differences of elevation of at most ten feet, and in some, where the ground is very flat, of as little as two and one-half feet.

This is generally done with a plane table, an instrument especially adapted to developing topography of large areas, and for this reason not generally used except by the government. In very flat countries it is often very difficult to see long distances over the sage brush, and illustrations are shown of instrument men climbing tops of houses and wind pump towers to obtain clear sights.

Probably the most important of all the investigations is that to obtain the amount of water available, the discharge of the various streams during the different months of the year.

The absolute necessity for such information is nicely illustrated by a well known irrigation system in southern California. A costly dam was constructed, canals excavated and much money invested in improving lands and setting fruit trees.

The data of stream flow, on which this enterprise was based, was thought then to have been derived from a period of time sufficiently ample to justify construction. There has been no water at all in this reservoir for the past three years, and valuable improvements, such as orange orchards, have been utterly ruined, probably to the value of several times the cost of the enterprise in the beginning.

Appropriations by congress in previous years have not permitted measurements in any streams. This is now being taken up and pushed vigorously under the funds provided by the reclamation act. Except where earlier work has been done, sufficiently reliable data upon which to base estimates can hardly be ex-

pected with less than two or three years' measurements.

The method of obtaining the discharge of a stream throughout the year is as follows. A gage rod is fixed at some convenient point in the river and an observer employed to read and record the daily variations of the water. The amount of water passing at different stages indicated on the gage rod is determined by the use of a current meter. Cables are erected across the stream, and the hydrographer moves across in a suspended car, holding the current meter at various measured positions in the water.

The instrument automatically indicates the velocity of the water, and from this the discharge is estimated. Some twenty of these stations are being maintained at present. An illustration is shown of a station across the Umatilla river near its mouth, with the hydrographer in the car.—John T. Whistler, Engineer United States Geological Survey.

DEVELOPMENT AT THE CAMP KETTLE

Roy Wenceslaw and Dave Goodfellow came in this morning from their Camp Kettle claims in the Deer Creek district, where they have been doing development work. They have completed assessment work and will continue the drift on the vein for some forty or fifty feet further, they state.

The ledge shows a width of seven feet, with average values of about \$14. The property is located near the Golden Wizard.

PRACTICAL IDEA OF WHAT A MILLION DOLLARS MEANS

A practical idea of what a million dollars means was given a few days ago, when one of Chicago's big banks moved into its new building, adjacent to the old one. There was a little matter of \$12,000,000 in cash among the moveables. About half of the cash was in gold coin and the rest in silver and bank notes. How should the cash be moved?

At first thought, one might say—put it in sacks and carry it to the new buildings. But that is not the way the transfer was accomplished. As the first step in the removal of cash from the old vaults to the new ones, a tunnel was cut connecting the buildings by a passage far below the ground surface. Five hundred bank employes, detectives and policemen guarded the operation of removal.

The money was incased in iron-bound trunks from the moment they left the old vaults until they were deposited in the new ones.

What was the weight of all these trunks? The \$6,000,000 in gold—\$5, \$10 and \$20 pieces—weighed fifteen tons, and the bank notes filled a large number of trunks. One million dollars in the form of gold coin would weigh well over two tons.—Seattle Times.

Shareholders Meeting.

Notice is hereby given that there will be a meeting of the shareholders of the First National Bank, of Sumpter, Tuesday, February 16, 1904, at their banking house at 11 a. m.

R. H. MILLER, Cashier.
Dated Jan. 11, 1904.

GOLD AND COPPER ORE IN THE GRIZZLY

P. D. Healy is in town today and is exhibiting some excellent looking rock from the Grizzly. It is from what is called the "small" vein on that property, though why it is so designated is not apparent, until Mr. Healy explains the situation, for the vein is full eight feet wide. It is stated that it assays \$14.50 in gold and carries four per cent copper, clear across the eight feet.

Now, as to its being called the small vein, that is merely in comparison with the other, which is forty feet wide, declares Mr. Healy, and he is a man whose word is always worth a premium on its face value in these parts. The trouble with this Jumbo ledge is that it hasn't yet been found in place. The work now being done is for the purpose of locating it and when this is done, the Grizzly will be a bonanza.

There is nothing the matter with it as it is, having eight feet of twenty dollar rock, in gold and copper.

CUSTOMS MILLS MEAN MUCH FOR THE IMPERIAL.

Captain Paul was in from the Imperial last night. He says that mine will resume work as soon as the title is cleared up on the claims which were jumped a year or so ago, which will not be a great while now.

The Imperial people are very much interested in the custom mills which Mr. Lilley, of the Baby McKee, and his Cincinnati associates will erect in the Cable Cove district this year, as they have over 3,000 tons of ore on the dump that will average about fifteen dollars. Last year he put 500 tons of eighteen dollar rock on the dump.

This is ore from which the high grade has been sorted for shipment. Anything less than forty dollar values can not be handled at a profit, owing to transportation charges.

When the custom mills go in, ore carrying ten dollars can be profitably treated.

UNEQUALLED OPPORTUNITY TO SECURE A PIANO FREE.

In another column of The Miner is published a most attractive subscription offer. Arrangements have been made with The Twice-a-Week Spokesman-Review, the most popular family newspaper in the Northwest, to club with it and permit Miner readers to participate in the contest for a handsome piano and numerous cash prizes which it offers.

Such an expensive contest can be conducted only by a paper of large circulation, one that no country paper could afford itself, unaided, to inaugurate and Miner readers are fortunate in securing this opportunity to participate in this one.

This is no guessing contest, but purely a trial of skill. Read the advertisement; it explains the system fully, and you will surely try to count the diamonds.

More Water at Scandia.

W. Wade, superintendent of the Scandia Tunnel returned last night from the property. He says that more water than usual is being encountered in the face of the crosscut.

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