

JULY 7 1909
U. S. DEPARTMENT OF AGRICULTURE
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ANNUAL REPORT

Fiscal Year 1909

H. F. Robinson

Superintendent of Irrigation

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RG 75

Entry 655

Irrigation Division, Annual District & Project Reports, 1908-40

Box 41

Annual Report,
Fiscal year 1909.

DEPARTMENT OF THE INTERIOR,

UNITED STATES INDIAN SERVICE,

Albuquerque, N. M., July 9, 1909.

Mr. W. H. Code, Chief Engineer,
522 Bumiller Building,
Los Angeles, Cal.

Sir:

Herewith find my Annual Report, covering the Fiscal
Year 1909.

HEADQUARTERS.

My headquarters were at Zuni from the first of
the year until the work shut down there in September. I
then asked authority to rent offices in Albuquerque, and es-
tablish permanent headquarters there. The authority being
granted, office rooms were rented in the Strickler Building,
and, later on, receiving the proper authority, office furni-
ture was purchased.

I have installed vertical filing cases for all correspon-
dence and reports, and also the vertical system for the fil-
ing of maps and plats, which I find very effective, giving
the maximum of convenience, and taking up a minimum of space
in the office.

My office force consists of Mr. James T. Newhall, Chief
Clerk.

FIELD FORCE.

July 1st 1908, the engineers at work under my
supervision were Assistant Engineers Rollin Ritter and R. G.
Bush, and Junior Engineer Don T. Hover.

In August Mr. E. G. Hamilton was put on as an assistant
engineer, temporarily, and remained through September, in

side of the stream where the Indians have been cultivating about 150 acres of land. There is an additional 400 acres of good land and the new dam will enable at least a part of this to be cultivated, the area depending on the water supply and the care in using the water and irrigating.

The cost of this dam was \$1614.04. of which \$ 1127.54 was for Indian labor.

Miscellaneous.

Other investigations were made during the year at a cost of \$346.60, but no other construction was done. No estimates have been made for any work at any of the pueblos during the next fiscal year, though some minor work will probably be necessary.

NAVAJO AND MOKI.

Work has been done on these reservations at several points during the year.

Wheatfields.

This project, which was commenced under Superintendent of Irrigation Butler, was completed during last fall excepting the controlling gates. These gates were ordered but did not arrive in time to be placed before winter. This spring I have had no one at liberty who could put them in, but will have the work completed this summer.

There has been expended on the completion of this work \$1667.82 of which \$1262.04 was for Indian labor.

Leupp.

The surveys for the storage reservoir at Leupp were com-

July, and a full report was rendered the Office, and it was determined that owing to the cost of the project nothing was done with it, at least for a time.

At this point some help was given the Indians to put the ditch in shape. \$78.99 was expended, of which \$60.66 went to the Indians for labor.

1912. This ditch system was put in shape this year on the suggestion of Superintendent Paquette that he would put a dam at this point and make use of the water. The cost of the work was \$730.31, the Indians receiving for labor \$495.08.

1913. Lakes. This little project, to store water for the Navajos, was not completed last fall on account of heavy snows early in the season. As there was some water stored this last winter, it was not practicable to complete the project until after the water could be used this spring. The work will be completed this fall. The cost to date has been \$728.83, of which \$497.96 was for Indian labor. It will cost about \$300 to complete the work, and it will bring in 100 or more acres of new land.

1914. The work at Tuba has been divided into two parts; that at Reservoir Canyon and that in the Moencopi Wash.

The former consisted of raising the earth dam of what is known as the lower reservoir, about four feet, and putting in gates and spillway, and the building of a stone culvert between the upper and middle reservoirs to prevent the drifting sands filling up the channel.

This culvert is over 500 feet long, and is working admirably, as the winds this spring and summer have drifted the sands into the canyon, and it lies 12 feet deep on top of the culvert in places. It was not completed a day too soon to save the water supply for the Hopis at Moencopi villiage. The cost of this work (reservoir improvements and culvert), was \$3780.88 of which \$3072.71 was paid for Indian labor.

The work in the Moencopi Wash consists of constructing a new heading for the ditch which covers the land occupied by the Agency and School farms and the land below. The work has not yet been completed, and it will take two or three months to do so. Concrete headgates will be built, and the system put in the best possible condition. The Indians have put in at least 100 acres of land more this year, on the strength of the new head works, so I am informed.

To July 1st there was spent on this work \$4596.80 of which \$3292.86 was for Indian labor.

It will probably take \$2500. to complete this work.

San Juan River Repairs.

In November 1908, the Indian Office wired that the San Juan River was encroaching on the old Hogback Ditch, and instructed that it be investigated, and if necessary, make repairs. It was found that while there was no immediate danger, that the next high water would probably do considerable damage, consequently Assistant Engineer Ritter made the necessary repairs which cost \$1000.33; \$609.45 of which was for Indian labor. In June of this year it was again

entened, and Assistant Engineer Bush expended \$69.07 in the
airs, all of which was Indian labor.

Juan Pump Ditch Survey.

Investigations and surveys were
to ascertain the feasibility of establishing a pumping
at a point on the river where a 20 foot vein of coal
was exposed, and using the water on the mesas on the south
side of the river. Mr. Ritter made a full report of the mat-
ter, but it was considered that the cost would not warrant the
project.

These examinations cost \$212.90, none of which went to the
Indians.

Hogback Canal Project.

Final location surveys consumed several
months of this year, and authority was finally given to com-
mence work on the project. Consulting Engineer J. H. Quin-
ton went over the entire project, and gave it his unqualified
approval.

The ditch will be about 12½ miles long, and will have a ca-
pacity at the head of 100 second feet. The first estimate
of cost was \$101,577. but modifications which have been made
in the plans for the head section will probably increase this
cost. There will be under the ditch some 3900 acres of land,
with a possibility of extensions which will add to this.

A full report on this project was rendered April 10, and under
date of March 31, Mr. Quinton made his report. For full de-
tails, I would refer you to these reports.

To the end of the fiscal year no construction work had been

commenced; the time since Mr. Bush took charge of the work has been used in completing surveys, establishing a permanent camp, building quarters and freighting supplies, tools etc. to the work. In order to make available the balance of money for Navajos during the fiscal year, material was purchased for the work, including steel flume material, about 118,000 feet BM of lumber, three cars of cement, steel lateral headgates. etc. As this all has to be hauled from 28 to 35 miles, it took all the available teams and the funds unexpended for other purposes. Work will begin in moving dirt as soon as authorities for the new fiscal year have been received.

The expenditures on surveys, purchase and hauling of material and of tools have been \$15,639.21. Of this the Indians have received \$861.80, and the subdivision of the balance is shown on the Cost Data sheet annexed.

MOKI or HOPI.

Nothing has been done on this reservation. It is proposed to improve some of their springs; cleaning them out, walling them up, and perhaps covering them over, conveying the water through iron pipes to a stone or cement tank, and the overflow to troughs for the watering of stock. At present the springs are in an extremely unsanitary condition.

Any further work for these Indians will be postponed until the report of Prof. H. E. Gregory relative to the underground water possibilities has been received.

Underground Waters.

Sometime since arrangements were made with the Geological Survey, by which the Indian Service was to secure the service of one of their underground water experts.

Professor Herbert E. Gregory was detailed for the service, and he entered on his work early in June. I accompanied Prof. Gregory and party on a flying trip over a considerable portion of the Navajo and Moki Reservations, being out 15 days, during which time we covered about 500 miles by wagon. Prof. Gregory is cooperating with this office in every way, and has promised a partial report at an early date covering certain sections in which we are most interested, and a complete report of his work in the fall.

Miscellaneous Investigations.

During the year miscellaneous investigations have been made on the Navajo reservation, visiting various points where it was thought something might be done for the Indians in the way of developing water. Some of these investigations will be followed up, and others, it was found were of no value. The cost of these have amounted to \$858.74, of which \$72.76 went for Indian labor.

PAPAGO.

A plane table survey was made of a portion of this reservation to see what could be done to control the destruction of the land by floods of the Santa Cruz. The maps were turned into your office and further investigations were carried on from there. The cost was \$796.92, Indian labor amounting to \$78.13.

PIMA.

As directed, a plane table survey was made at the Sacaton Agency on the Gila River Reservation, of the farm. Its