

The Ganado
Reservoir.

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Discharge and
silt bearing
of stream.

DEPARTMENT OF THE INTERIOR
UNITED STATES INDIAN IRRIGATION SERVICES
SUPERINTENDENT OF IRRIGATION

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Albuquerque, N. M., January 20, 1912.

The Commissioner of Indian Affairs,
Washington, D. C.

Sir:

On my return this morning from the field I find your telegram of the
25th instant as follows:

"Send report on silt contents of river water, and quantity of
water available for Ganado reservoir".

My absence will explain the delay in answering it.

A guaging station was established in the Rio Pueblo Colorado at Ganado
in November 1910, but the sandy nature of the river caused a complete change
in the channel after every high water period. Since then the guage has been
replaced three times, but the records are incomplete for the reason that
after every change either the guage was washed out completely or the channel
changed so materially that the readings are valueless as to exact quantity.

From the readings secured I can give the following figures:

		Discharge in acre Ft.
November 1910.	13th to 30th only,	14,736
December 1910.		28,931
January 1911.	9th to 31st only,	161,930
February 1911.	1st to 5th only,	3,916

The guage was washed out on the 6th, and for some days subsequent there
was very high water in the stream, estimated by me to be from 2,000 to a
maximum of 5,000 acre feet per day.

The guage was replaced the following month, but the first water that came
down so altered the channel that any readings would have been of no value.

During the summer of 1911 there were many days when there was a large
discharge of the stream, and twice the guage was noted to have the next raise

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render it of no avail. Several times the river ran a large flood, estimated at 2,000 to 4,000 acre feet in a day, and at one time I estimated that between six and eight thousand acre feet passed down the stream in one day.

Owing to the fact that Ganado is over 200 miles from Albuquerque, and 60 miles from the railroad it was almost impossible to get a man in there as often as I should have liked to secure fresh data and a replacement of or rerating of the guage, and I did not think that the value of the accurate data would justify taking a man from other, and perhaps more important work and sending him out there.

But the data secured, and the estimated made therefrom, show that during one year there was sufficient water passed down the river channel to fill the proposed reservoir, which has a capacity of 4438 acre feet, not less than fifty times and perhaps more.

With the possibility of filling the reservoir several times in the course of a year, the area which can be irrigated under the project will be materially increased, and the per acre costs thereby reduced.

The silt carried by the water varied from a trace, when the channel was carrying its normal flow of a couple of second feet to $2\frac{1}{2}$ by volume after standing 30 days when the discharge was about 15 second feet to a maximum of $6\frac{1}{2}$ when the flow was 1940 second feet.

The amount of silt varies at various capacities, depending on the particular part of the water shed the precipitation occurred, as some sections are much more easily eroded by the water.

Very respectfully,



Superintendent of Irrigation.