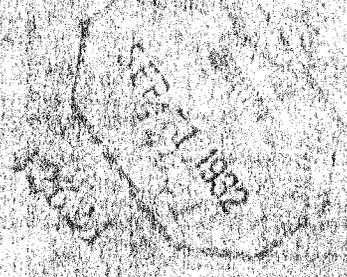


Department of the Interior
U. S. Indian Irrigation Service

ANNUAL REPORT
Fiscal Year 1952

Volume I

District No. 5
H. C. Nauffier, Supervising Engineer
Albuquerque, N. M.



Approved to Commissions

Date *8/14/52*

H. C. Nauffier
Asst. U. S. Irrigation

U. S. IRRIGATION SERVICE
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DIRECTOR OF IRRIGATION
FIELD OFFICE

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Ganado Project

Employee in Charge: Neil Campbell, Foreman.

This project is located on the Navajo Reservation. Water is diverted from the Rio Pueblo Colorado and impounded in a reservoir which has a present capacity of approximately 2,600 acre feet. There are 9.69 miles of main canal and 3 miles of laterals. The gross irrigable area of the project is 1,200 acres of which 800 acres are under constructed canals and can be served with the present capacity of the reservoir. During the past irrigation season the Indians irrigated 494 acres and in addition to this 156 acres were irrigated by J. L. Hubbell and the Presbyterian Mission. Crops produced by the Indians were valued at \$19,019.74.

On the afternoon of July 28, 1931 a rain storm of cloudburst proportions, followed by hail, wind, and a flood, swept the vicinity of the project and wrought serious damage to the system and some of the farm crops. The diversion dam, a rock-filled crib, was carried out in its entirety. A section of the main canal near its head was washed out and a flume structure across the Rio Pueblo Colorado was destroyed. Several other flumes across smaller arroyos were also damaged. The hail did not cover the entire area but damaged only a

strip near the upper end of the project.

The reservoir was not damaged and gained three feet of water during the storm.

A survey of the damage was made and plans submitted for the rehabilitation of the irrigation system. The area under the south side canal was without irrigation water for the balance of the season but intermittent showers helped to produce an average crop. Delivery of water was made on the north side for the balance of the season.

The earth work for the repair of the section of the main canal which was washed out was contracted to the Indians farming on the project. Work was commenced in November but was not completed until March on account of the severity of the winter.

All Indian livestock suffered to a great extent during the winter because of the deep snows, but the Indians on the Ganado Project were in a position to provide some feed, while in other sections it was necessary to haul it in from the railroad.

This year the Indians farming under the project have paid \$1.00 per acre operation and maintenance charges.

Moencopi Wash ProjectComments on Items of Work, Operation & Maintenance

This project is near Tuba City on the Navajo Reservation in Arizona. The water supply is from an ephemeral stream of the same name and the system consists of a diversion dam and three miles of main canal, of which 2,300 feet are concrete lined.

The general maintenance work necessary on the project this year was the raising of the head gate structure as it had been topped by floods several times in the last two years, filling the canal below with great quantities of debris and silt.

The canal lining is in a bad state of repair and the 1933 program provides for its repair and extension.

Red Lake ProjectComments on Items of Work, Construction

This project is located 15 miles north of Fort Defiance on the Navajo Reservation in Arizona. The system consists of a diversion dam, feeder canal, a storage reservoir having a capacity of approximately 4,500 acre feet, and 3 miles of main canal. There are 700 acres of irrigable land with only 98 acres reported under cultivation during the past season.

To properly develop the project the completion of the main canal and principal laterals with proper turnout gates was undertaken because it has been found that very little can be left for the Indians to do without proper supervision and aid. Excavation of the canals was contracted to the Indians living in the vicinity. This work was started in November under the supervision of Foreman Campbell but because of the severe winter was not completed until spring. Betterments were made to the outlet structure of the reservoir as immediate repairs were necessary to insure service for the present season.

Water Supply, Navajo and Hopi

Employee in Charge: A. H. Womack, General Foreman.

The Navajo and Hopi Reservations which lie in extremely arid parts of New Mexico and Arizona have a combined area of 14,360,000 acres. Very little live water is found in this area making it necessary to develop springs, drill wells and equip them with windmills, tanks, and troughs, and construct earthen reservoirs for the development of stock and domestic water. The Navajo tribe is one of the few in the Southwest which has increased rapidly in population and in turn has increased its herds until all of the areas adjacent to water supplies have been overgrazed and present at this time a very difficult problem. This must be met by either reducing their herds or increasing the amount of funds for water development in order to supply forage for stock in areas heretofore unused due to the fact that there has been no water available for livestock or domestic use. This area comprises at least 30% of the reservation and approximately 50% of the area is only partially developed.

During the past year contracts were made with the Indians to construct earthen dams to impound water for stock purposes. The Indians were paid at the rate of 20¢ per cubic yard and very satisfactory results were obtained by this method of construction.

COMPARISON CONSTRUCTION PROGRAM AND PROGRESS

Water Supply, Navajo & Hopi
 Domestic & Stock Water Development Project F. Y. 1932

Source and Disposition of Funds:

	Estimates F. Y. 1933 (Work Program)	Fiscal Year to Date
<u>From Appropriations:</u>		
F. Y. 1931 unobligated balance 7-1-31		
F. Y. 1932, available 7-1-31	\$90,325.00	
Expenditures and obligations forward to F. Y. 1933	90,325.00	
	None	
<u>From Collections:</u>		
	None	

Summary: Programs of Work and Progress to Date

	Estimated Cost F. Y. Work Program	Actual Cost	% of Estimate
<u>Project Features</u>			
Reservoirs	\$32,112.00	\$20,438.58	63%
Wells, Drilled	12,110.00	19,981.39	164%
Wells, dug wells and concrete troughs	46,103.00	44,317.50	96%
Totals	\$90,325.00	\$84,737.47	

Comments on Items of Work, Construction

During the past year the Indians built under contract six earthen reservoirs in the Northern Navajo Jurisdiction, six on Southern Navajo, one in Western Navajo, one in Eastern Navajo, and six in Hopi. In addition to this, six were constructed in Western Navajo Jurisdiction by machinery, making a total of twenty-six of this type of development.

The approved program of work for the year provided for two drilled wells in the Eastern Navajo Jurisdiction, one in Leupp, and one in Southern Navajo. All of these wells were drilled by contract.

In addition to the foregoing activities, sixteen springs and forty-three dug wells were completed by Government forces.

Water Development, Navajo & Hopi Reservations, F. Y. 1932

	Northern Navajo	Eastern Navajo	Southern Navajo	Western Navajo	Leupp	Hopi	Totals
Reservoirs	6	1	6	7	0	6	26
Springs	4	3	3	1	4	1	16
Dug Wells	21	0	11	4	7	0	43
Drilled Wells	0	2	1	0	1	0	4
Totals	31	6	21	12	12	7	89
Concrete troughs	22	12	13	5	6	4	62

Water Development, Navajo & Hopi Reservations, to June 30, 1932

	Northern Navajo	Eastern Navajo	Southern Navajo	Western Navajo	Leupp	Hopi	Totals
Reservoirs	6	20	6	30	4	6	72
Springs	109	7	57	55	24	80	332
Dug Wells	80	4	61	32	15	16	208
Drilled Wells	6	2	33	3	5	27	76
Drilled Wells Art. 5	5	12	5	1	0	4	27
Totals	206	45	162	121	48	133	715
Concrete troughs	187	29	146	66	34	84	546

Comments on Items of Work, Operation & Maintenance

Regular maintenance of all windmills, tanks, and troughs in the Northern, Southern, Leupp, Western, and Hopi Jurisdictions was carried on by two crews throughout the year, one crew operating from Chin Lee, Arizona and the other from Polacca, Arizona.