

Original forwarded.

Indian Office

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\* Navajo ~~Hopi~~  
Outline of Work



DEPARTMENT OF THE INTERIOR,  
U. S. Indian Irrigation Service  
Office of Supervising Engineer.  
Albuquerque, N. M.

July 1st, 1920.

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

(Through the Chief Engineer)

Sir:-

Last year I submitted to you a program for the water development on the Navajo and Hopi Reservations, which was approved by you. The approval of work then would carry on through much of this year, but investigations in the field, long discussion of the various points involved with Foreman Komack and other employees and the general impressions gathered from the Congressional Committee when they were in this section has led me to believe that we can work to a better advantage by modifying the present program, and I submit the following for your consideration and approval.

Owing to the very high cost of all material entering into this work, the wells and the equipment left there for pumping the water, will cost perhaps double what it would have cost three years ago.

As has been heretofore presented to you at considerable length, it is absolutely necessary to operate and maintain the wells put down as the Indian cannot do it for himself and if they are allowed to go for sixty days without attention the whole plant at any one well is liable to be a partial if not a total wreck. This work will take considerable money.

The development of water on these reservations has involved building surface lakes or ponds, development of springs and similar work in addition to the drilling equipment and maintenance of wells. Some years ago we did considerable of the former work, but of late years, because of shortage of money have neglected it in favor of the wells.

Now that the area already worked over with springs has all been covered and it is necessary to go further out with the well drilling, it seems to be necessary to precede the well rigs with the other work that the water already existant be located and made to serve the best pos-

sible use, as the location of the springs and the amount of water developed will influence to a certain extent the location of the wells.

If this work is to be done and the maintenance work continued, it will be necessary to close down on the well work in part in order to make the available funds hold out.

During the fiscal year 1920 we run out of money by May and were obliged to close down all of the work for the last seven weeks of the year. To avoid the necessity of this another year and to provide for the additional work this modified plan has been worked out.

The approved plan is for continuing the work on the San Juan Navajo by a line of wells along east of the Lukachukai Mountains. To complete a row of wells along the southern part of the Hopi reservation and then move the rig over into the Western Navajo Reservation to such localities as may be decided upon between the Irrigation Service and the Superintendent in charge.

One of the very important questions to be settled in this country is that of the encroachments of the Navajos on the Hopi country, and something is to be done to remove the pressure. There is talk of removing Navajos from a certain area, by force if necessary, and other plans to keep them back.

There is a large area of the central part of the Moqui Reservation upon which the population is several times as dense as on any other part of the Navajo-Hopi country. In addition to being over populated for the resources of the country it is overstocked and consequently is being overgrazed.

This is because there is more water there, most of it water developed by this Service. The Navajo is nomadic, and if, in the further outlying districts where there is grass additional water should be developed it is believed that these Navajos would voluntarily move out, relieving the pressure around the Hopi mesas.

The above should be a good argument for continuing the drilling in the Moqui reservation, especially in the region lying north of the present development. With the present amount of money this cannot be done if Rig No. 6 goes to the Western Navajo.

There is no question but that additional water is needed on Western Navajo but any work there is going to be much more expensive and the results for the expenditure of a given amount of water will be smaller than at other points. The geology of that section is not indicative of shallow wells or of water at reasonable depths over much of the area. I do not care to go into an extensive discussion regarding the reasons, but the principal ones are as follows: The entire formation dips to the south and all underground water would move, generally in that direction. The country has been cut through from east to west by the Moencopi Wash and all of the water bearing strata cut through to the shale so that all water movement is cut off. This would leave only the water that originates on the mesas lying south of this point and the annual average rainfall is less than six inches. Of course in this I am not including the lands lying to the North of Tuba.

The population being smaller there is greater range for a given number of cattle. I am not saying that they don't need the water development over there, for they do, and with more money they should have their share of the development, but I am saying that with a limited amount of money, the largest results in developed water, and by far the largest amount of good can be realized by working in the Moqui Reservation for at least another year, covering the lands north of the present area on which wells have been put.

The following program is recommended for the Fiscal Year 1921.

That Well Rig No. 7, now located in the extreme eastern part of the Navajo Reservation be laid off for at least a part of the year, say six months.

That Well Rig No. 6 which is now in the southwestern part of the Moqui Reservation be moved on north to cover lands indicated above.

That before No. 7 is closed down, Mr. Cravath drill the one well where it is located, and then return to take charge of Rig No. 6, and Mr. Jameson who has gone to California on leave, be given leave without pay until later in the season.

The usual maintenance be continued with the outfit located at Chin Lee for the Navajo country and at Polacca for the Hopi Country.

That for the development of springs and building of surface tanks a good man be employed for the Navajo country and another outfit for the Hopi country. Each of these outfits will consist of a good mechanic at say \$4.50 a day, with a good team and wagon, equipped with the necessary tools. He will need one or two Indian Helpers, and will try and have as much additional labor donated as possible.

We will have the sum of \$35,000. for this work this year and it will be distributed about as follows:

Running one well rig for year	5,500.
Navajo maintenance crew	5,000.
Betterment of existing well equipment	
Navajo	400.
New outfit for spring development	5,000.
Hopi Maintenance crew	6,000.
Betterment of Hopi well equipment	500.
Spring development crew	7,000.
Construction of tanks and troughs at wells developed during year	300.
	<u>\$29,700.</u>

There will be superintendence and the purchase of certain equipment that may be needed, and unexpected expenses and from any surplus run Rig No. 7 part of year.

By following this program for the balance of this calendar year it will be demonstrated whether we will have sufficient money to again put No. 7 rig into operation for the balance of the fiscal year.

Trusting this will receive your early attention and approval I am,

Sincerely yours,

*A. J. Robinson*

Supervising Engineer.

RFR:MMH

7-6-20  
Respectfully forwarded to the Commissioner  
of Indian Affairs, with the recommendation  
that it be approved  
*W. M. Reed*  
Chief Linguist Engineer