

Monthly Report.  
March 1914.

Albuquerque, N. M., April 10, 1914.

Mr. W. M. Reed,  
Chief Engineer,  
Washington, D. C.

Sir:

I herewith submit progress report for the month of March 1914, of the work done in District No. 5.

PERSONAL MOVEMENTS.

From the 1st to the 12th inclusive I was on a trip to The Pine River Project, Ignacio, Colorado, and the Hogback Canal, San Juan Project, N. M. and from the 29th to the 31st inclusive, on a trip to the Canada Project, Arizona and on to the Hopi Country.

The balance of the month I was in the office on miscellaneous routine work.

NAVAJO. Canada Project.

Work was continued on the reservoir dam with a large force, larger than anticipated in this office, and funds were running low. The engineer in charge was so notified, and the major portion of the men were laid off, and the small force remaining was put at work cleaning up all odds and ends of work to put it in the best shape. The Office was asked for more funds, and they were reported as available, but the authority had not come at the end of the month.

The additional height was completed on the crib diversion dam, and a considerable amount of earth put in the reservoir dam. The outlet works have been completed as far as possible until the dam is up to its height.

will sluice a channel through the fine sand. At present the quantity of water is so small that when it passes over the gravel bar it spreads out over the sand and deposits more sand instead of cutting through it. I have studied over the proposition quite thoroughly and am quite confident that if a sufficiently large channel were cut through this coarse gravel that there is a good chance, under present conditions, of pulling the river channel over to the headworks structure."

#### ZONE IRRIGATION PROJECT.

There has been no work in the field on this project. Engineer Ritter has been in this office part of the month at work on maps and plans for this project and the balance of the month on another assignment.

The water in the reservoir gradually rose until on the 15th it ran over the lip of the spillway. There was a small amount running through the spillway to the 21st.

The surface of the water in the observation well fluctuated in about the same proportion as in the reservoir, but gained a few tenths. It is now 3.5 lower than the reservoir level, while up to the end of January it was about ten feet lower.

If the weather conditions are favorable it is expected to start the work again between the 15th and the 20th of April.

#### TUBA. Moencopi Wash.

On the 9th of March Engineer Ritter left here for Tuba, accompanied by assistant Engineer Baker and Ridman Smith to commence work on the rebuilding of the dam in the Moencopi Wash. Mr. Ritter was instructed to examine the conditions carefully, plan what work was to be done there,

the work to be done along the general lines laid down by Acting Chief Engineer Cranville who visited the work, and after working out the details to return to this office and leave Assistant Engineer Baker in charge.

Mr. Ritter has made a special report which has been forwarded you.

The necessary supplies and equipment have been ordered and the work will be pushed to a finish as rapidly as possible.

PINE RIVER PROJECT. Southern Ute Allotted Indians.

Construction work was recommenced on the Dr. Morrison Ditch on the 9th. All construction work of the month was on this ditch with the exception of a small force of carpenters for five days on the Spring Creek placing division box and weir and repairing the flume at Sta. 209.

Early in the month it was found that a slide had occurred on the upper side of the canal at about Sta. 250, and the Robert Morrison Ditch which is above the Dr. Morrison Ditch on the side hill threatened to slide into the one below. It was decided to put in a reinforced concrete retaining wall about 100 feet long and excavation was commenced at once, and material hauled to the site that the work could be done as quickly as possible.

Work was done on the canal between Stations 150 and 185; 276 to 293, and 327 to 345. Finishing of the banks was done between 273 and 293, and clearing of the right of way from 273 to 400.

Direction was given by the Indian Office to work up data of all lands taking water from Pine River, both that of the Indians and whites to be used in a suit to be brought for the adjudication of the water of Pine River. This was placed in the hands of Assistant Engineer Landers to be done as rapidly as possible and Rodran Hunter was detailed to the work.

Blank forms were prepared and printed on which the information was to

placed as secured, and copies of the finished records will be made for the Indian Office, the Department of Justice, this office and the Superintendent in charge of the Southern Utes.

#### UNDERGROUND WATER DEVELOPMENT.

Well Rigs No. 1 and 2. It appearing that the funds allotted to the Navajo Reservation would permit working one of the above rigs in addition to Nos 3 and 4, Driller Olson was directed to proceed to Fears Canyon, to put both of the above rigs in good shape, store No. 2 at that point, and move No. 1 to a point in the Choiska Valley in New Mexico south east of Tohatchi and commence another well to explore for artesian water. This is the point indicated by Prof. Gregory, and is about 25 miles west of where flowing water has been developed at a depth of about 1000 feet.

The repair work was completed and the outfit started to move on the 25th and was on the road the balance of the month.

#### Rig No. 3.

This rig worked on a well in Beautiful Valley about 7 miles south west of the Noslini trading store, in a region where water was badly needed. The well was driven to a depth of 124 feet without finding water and was then abandoned.

This exhausts the possibilities in this valley and the rig will move to a valley west of the Chin Lee Valley and South of Black Mountain, where water is badly needed and the chances are good for finding it.

#### Rig No. 4.

Well 423 was drilled about 16 miles north of Chin Lee in the Chin Lee Valley. This well was 30 feet deep, but on account of the fine sand encountered would not make a good well although there seemed to

considerable water. The well was abandoned after trying for a week to pump out the fine sand, and another well started nearby. This well was not completed by the end of the month.

Rig No. 5.

This rig was moved back to some of the Laguna wells to erect windmills and tanks and repair some of the wells where sand had run in.

At Well 513 the driller reports: "Erected drilling rig and removed hand pump. Found well had caved closing perforations in casing with silt or slime closing off all water. Drew casing back 20' and drilled and cased to 60'. After putting down pump eleven times succeeded in getting enough water to mix with sand and mud to start pump. Pumped sand for four days with drilling rig, when water became clear."

A 10 foot Aero-motor windmill was erected, and an iron tank 7' x 8' set on a rock base 5 feet high, and well left in good working order.

A windmill and tank was then erected at well No. 514, and was doing the same at No. 511 at the end of the month.

Hopi Spring and well work.

During the month no new work was attempted as the fund is getting low. The foreman with indian help overhauled all of the mills, and worked in the shop on trough building etc. He now has seven tanks erected ready to place and about fifty troughs completed ready to set.

If additional funds asked for are not given will have to closed down this work.

Cost Data sheets etc. are herewith attached as a part of this report.

Very truly,



Superintendent of Irrigation.

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

Tuba, Arizona, March 31, 1914.

Mr. H. F. Robinson,  
Supt. of Irrigation,  
Albuquerque, N.M.,

Dear Sir,

I herewith submit my report for the month of  
March, 1914.

I left Albuquerque, N.M., on the night of Mar. 9  
and arrived at Tuba, Arizona, on March 11.

We found that the farmer at the school had stopped  
the opening in the old dam in the wash with bundles of brush  
woven together with wire, and it was a very difficult job to  
clean this away. In front of the dam there was a lot of mud,  
silt, broken rock and pieces of concrete which had been washed out  
out of the dam.

The opening in the dam was about 40' long, and the  
water has cut this opening down a couple of feet below the  
level of bedrock in the stream bed.

I have cleaned out the debris in the front of the  
dam, and obtained enough rock for the repair of the dam, accord-  
ing to the ~~present~~ present plan.

There is a good deposit of sand and gravel on top  
of a mesa about 2000' from the damsite. This bed will have to  
be stripped to a depth of one foot, and when screened will  
furnish a good supply.

The Indiaas seem very willing to work, and I have been working a fairly large force. I am hauling the gravel now as there will probably be a scarcity of teams when the freighting of supplies for the dam is commenced.

Respectfully yours,

*Donald M. Baker.*

Assistant Engineer,