

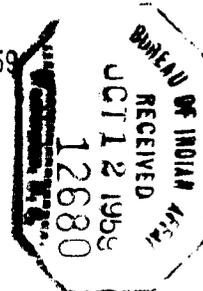


IN REPLY REFER TO:  
Administration

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF INDIAN AFFAIRS

PHOENIX AREA OFFICE  
P. O. BOX 7007  
PHOENIX, ARIZONA

OCT 8 1959



Commissioner, Bureau of Indian Affairs

Washington 25, D. C.

Attention: Land Operations

Dear Sir:

This is a request for cancellation of certain reimbursable construction and operation and maintenance charges and non-reimbursable charges against the Hopi Miscellaneous Irrigation Projects representing items which we do not consider chargeable against the Hopi Indians.

I. The following items are proposed for cancellation:

G.L. Account 213.1 Irrigation construction, reimbursables, \$95,949.00  
Appropriation 14X2301 Construction, Indian Affairs, Hopi Projects 465-54.

G.L. Account 213.2 Operation and Maintenance, reimbursables, \$40,117.51  
Appropriation 14-2201 Resources Management, Indian Affairs, Hopi Projects 465-54

The construction covers the following projects as carried in our Hopi Plant Accounts:

Hardrocks Project (Oraibi Wash)  
✓ Jeddito Project  
Phillips Farms Project (Polacca Wash)  
Bluebird Canyon Irrigation Project  
Keams Canyon Garden Plots  
Talahogan Springs  
Wepo Village Springs  
Hotevilla Terrace Gardens  
Bacabi Terrace Gardens

II. History of Projects

Farming on the Hopi Reservation is, at its best, a

difficult and risky undertaking. Annual precipitation on the reservation is only 10 to 13 inches and falls mainly in the form of summer torrential downpours which suddenly flood the washes and frequently sweep away the crops. Since the water supply is extremely limited and unreliable, it can be expected that every third or fourth year crops fail to fully mature because of lack of water. In some years there is little or no rain and springs dry up. The drouth of 1943 was a good example of such a cycle. In addition, the Hopi farmer has to contend with strong winds which blow almost constantly and often with such force as to stir up sandstorms which bury, injure or kill crops.

There are small seepage areas at the bases of various mesas and these areas are cultivated primarily for orchards. In addition, adjacent to or near various mesas are springs and the land around the springs has been terraced, irrigated from the springs and planted with vegetables.

Thus, the irrigation projects were submarginal developments to assist the Hopi farmer with arroyo flood farming for small crops, or developing of springs for subsistence gardening. They were primarily subsistence projects on which the Indians raised a few vegetable crops for home consumption. The total acreage under cultivation did not exceed 160 acres.

When the Hardrocks, Jeddito and Phillips Farms projects were planned and built, they were constructed as diversions of almost perennial streams and maintenance work was relatively simple. Now the streams flow only during the rainy season and then as raging torrents known as "flash floods" which have all but obliterated the projects.

(a) Hardrocks Project

This project is located seven miles north of Oraibi and work on it was started in March 1934. Based on a seasonal limitation of available water supply, the potential irrigable area was 300 acres but at a prohibitive cost due to the uncertainty of the water supply and the terrific silt content of the water which averaged close to sixty per cent.

The constructed works consisted of a rock masonry

and earth fill diversion dam 104 feet long, maximum height 9 feet, and headworks on sandstone, silt trap, 11,200 feet of main canal and distributary system included a trussed flume, three drops, two turnouts, and one check.

Seventy acres were rough leveled and fenced in 1936 and since no use was made of the project by Navajos, it was turned over to the Hopis in 1942. The Hopis tried hard for several years to farm the project and succeeded in raising small garden crops and corn. However, the hard struggle against the silt was too much as floods filled the diversion dam with debris and when the Oraibi Wash overflowed its channel, it cut up the project so that it was useless. Ditches filled with sand and at the present time, this project is practically idle.

(b) Jeddito Project

This project, located twenty miles southwest of Keams Canyon on the lower Jeddito Wash was constructed by the Navajo Service in 1939. The Jeddito Wash is the dividing line at this point between Districts 6 and 7 and the Hopis farmed the west side of the project and the Navajos the east side.

The project works consisted of a diversion dam of reinforced concrete 95 feet long and  $7\frac{1}{2}$  feet high with radial sluice gate and turnout at each end. The Hopi main canal was one-half mile long with two main branches five-eighths of a mile in length. The land had been subjugated, bordered, fenced and divided into 28 plots with tree windbreaks planted across the prevailing winds. A three-fourths mile flood protection dike was built in 1941.

There were 57 irrigable acres of land on the Hopi side in 1948 which were farmed regularly by four Hopi families. Water was obtained from a small flow from springs and occasional floods. The original irrigable area of this project has since been reduced by more than 50% and the principal reason for this reduction is depositing of blow sand, mutilation of borders by wind erosion and lack of water when water is needed.

Because of the irregularity of flow in the Jeddito Wash, this acreage is only used periodically by the farmers for subsistence farming.

Since the farmers do not have a reliable source of water, they are reluctant to plant more acreage than that needed for their sustenance. It has been many years since they have had sufficient water to mature a crop and while they may occasionally get good early spring rain and winter rain irrigation, the rest of the year they are wholly at the mercy of the irregular rain pattern that is so common to this area.

In view of the irregularity of the above conditions, the farmers do not feel that they can pay any charges although they are willing to assume the responsibility of keeping the remains of the project operating and will maintain the installation by their own means. While no authority exists for transfer of these facilities to the Hopi Tribe we believe the Tribe, as the landowners, could assume the responsibility of operating the project for their own use under Section 221.106 (b) Miscellaneous Indian Irrigation Projects, Title 25, Code of Federal Regulations.

(c) Phillips Farms Project

This project was located eighteen miles southwest of Polacca on the Polacca Wash and was constructed in 1940 as a diversion of a perennial stream. The wash is sixty feet deep at this point. The project works consisted of a masonry check dam and spillway 145 feet long by 4 feet high with three 4' x 16' radial gates. The water supply was obtained from springs at the bottom of the wash which normally furnished 0.3 or 0.4 second feet the year around. A 900 g.p.m. gasoline driven pump lifted this water fifty-eight feet through 220 feet of 8" steel pipe to a concrete discharge basin on top the left bank. The main canal was 2,200 feet long with two laterals each 1,100 feet long.

Forty-three acres of land were subjugated in 1939 and 1941. On July 15, 1948 the Superintendent reported that because of the increasing deterioration of the quality of water due to alkalinity and the decreasing supply of water, only 20 acres were being farmed by seven Hopi families. Since then floods have filled the diversion dam and canal with silt and debris. Ditches have filled with sand and fields are uneven due to wind erosion and no longer level for any type of irrigation even if water could be brought to them. This project can be written off as a total loss.

(d) Bluebird Canyon Irrigation Project

This was not an irrigation project but the development of a spring which was cleaned out and supplied water to irrigate a small garden for one of two families. Cost reports and accounting work was done at Window Rock and cost figures are not available.

(e) Keams Canyon Garden Plots

This project can no longer be identified because new building construction and general expansion of the Agency plant has completely obliterated the garden site.

(f) Talahogan Springs  
Wepo Village Springs  
Hotevilla Terrace Gardens  
Bacabi Terrace Gardens

Adjacent to the above Hopi villages on the slopes of the mesas are springs which furnish domestic water for the people and the overflow is used to irrigate small terraced gardens which are built below the springs on the steep sides of the mesa. Talahogan gardens, of about two acres, are located on the Keams Canyon Mesa; Wepo, of two acres, on the First Mesa; Hotevilla and Bacabi, of three acres, located on Third Mesa. Here the Hopis raise beans, chili, corn and melons in these terraced gardens along with small orchard of fruit trees.

III. Summary of Justification for Cancellation

1. The foregoing will indicate that when these projects

were first built, they were constructed as diversions on almost perennial streams and it was a simple matter to maintain them. The cost per acre was reasonable. Since then the Hardrocks and Phillips Farms Projects have deteriorated to the extent where they can be written off as a total loss. The spring-fed garden plots are maintained by the Hopi people and the Indian farmers on the remains of the Jeddito Project are willing to assume responsibility for maintenance of the system through their own voluntary efforts.

2. The General Accounting Office auditors reported on the advisability of cancelling these charges during the 1958 audit as follows:

"Need for disposition of unused irrigation projects and related charges

"During our review at the Hopi agency we were informed by officials that eight of the nine miscellaneous irrigation projects on the Hopi reservation are now worthless and unused and that only a portion of one project is used and this portion is maintained by the water users. It was stated that the projects have become worthless due to silt and debris deposited in system dams, deposits of blow sand, wind erosion, uncertain and decreasing water supply, and in one instance the construction of agency buildings.

"These nine miscellaneous irrigation projects have accumulated construction charges of \$114,958 and operation and maintenance charges of \$40,118, as of June 30, 1958. In addition, water users' ledgers were never established for these projects and, therefore, the accumulated charges are not identifiable to specific acreage.

"The Agency Superintendent submitted a letter dated April 29, 1957, to the Area Director justifying the cancellation of the accumulated construction and operation and maintenance charges on these projects, but no further action had been taken as of July 31, 1958.

"To provide for the removal of the Agency's responsibility for these unused and worthless projects, we recommend that the Area Director determine the proper disposition of these projects including the related charges in the plant, properties,

and equipment accounts. In addition, the absence of a water users' ledger precludes ready determination of the recipients of the projects' water. Therefore, we also recommend that the Area Director ascertain whether efforts should be directed, by other means, toward identifying the water users as a step leading to the collection of the accumulated unpaid construction and operation and maintenance assessments."

3. Since this project does not have a constant and reliable source of water, it would be unrealistic to charge the Indians with an operation and maintenance cost and it would be virtually impossible, in the absence of Water Users Ledgers, to identify the water users or determine the amount of water used by the Indians. In fact, Central Office letter of August 3, 1944 to the Superintendent of the Hopi Agency stated there had never been any authority or order issued by the Secretary of the Interior for the assessment and collection of operation and maintenance charges from the Indians of the Hopi projects.

4. There have been no cancellations on the Hopi project to date.

It is therefore recommended that the amount \$136,066.51 representing construction/charges <sup>and O&M</sup> against the Hopi Indians be cancelled under authority contained in the act of July 1, 1932, (Chapter 369, 47 Stat. 564).

Sincerely yours,



Area Director

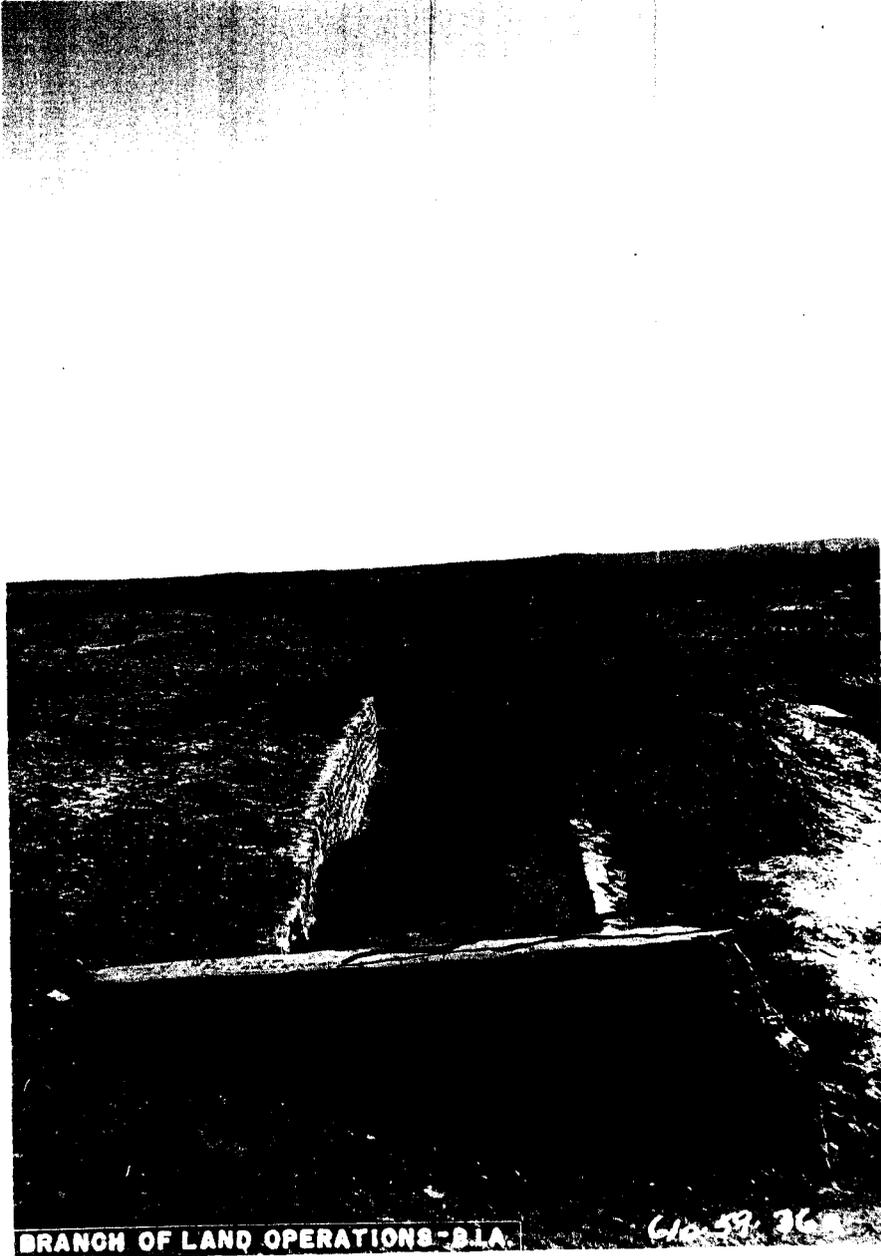
Enclosures



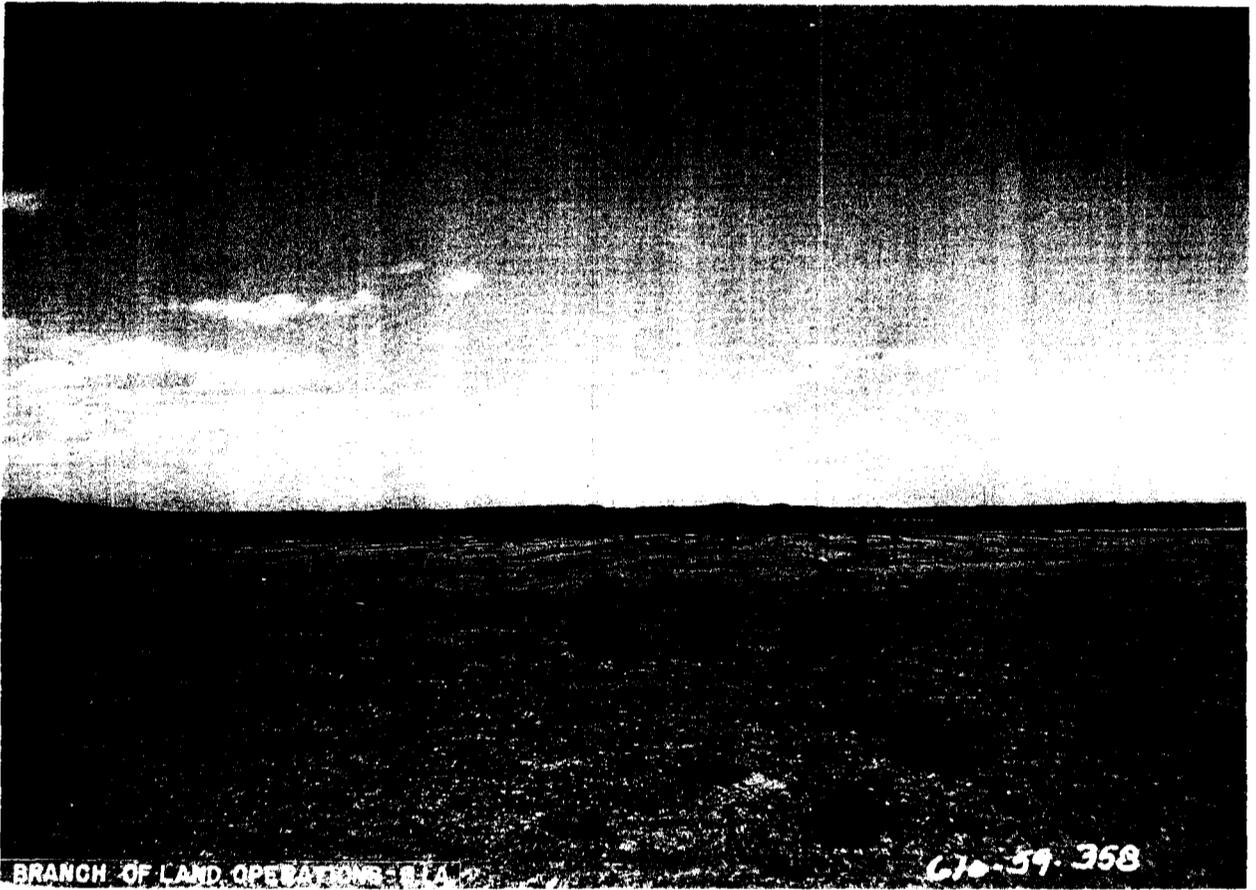
HARDROCK IRRIGATION PROJECT  
HARDROCK DIVERSION DAM. SILT LEVEL WITH UPSTREAM  
FACE OF DAM. THIS OCCURRED AFTER FIRST FLASH FLOOD.



HARDROCK IRRIGATION PROJECT  
LOWER DELIVERY DITCH AND OLD CONCRETE HEADGATE  
ABOUT 3/4 MILE FROM DIVERSION DAM.



HARDROCK IRRIGATION PROJECT  
SILT TRAP AND DELIVERY DITCH LEAVING THE DIVERSION DAM



HARDROCK IRRIGATION PROJECT  
SHOWING A PORTION OF THE 70 ACRES ORIGINALLY  
CLEARED AND LEVELED.



JEDDITO IRRIGATION PROJECT  
NAVAJO SIDE OF JEDDITO DIVERSION DAM



JEDDITO IRRIGATION PROJECT  
HOPI SIDE OF JEDDITO DIVERSION DAM



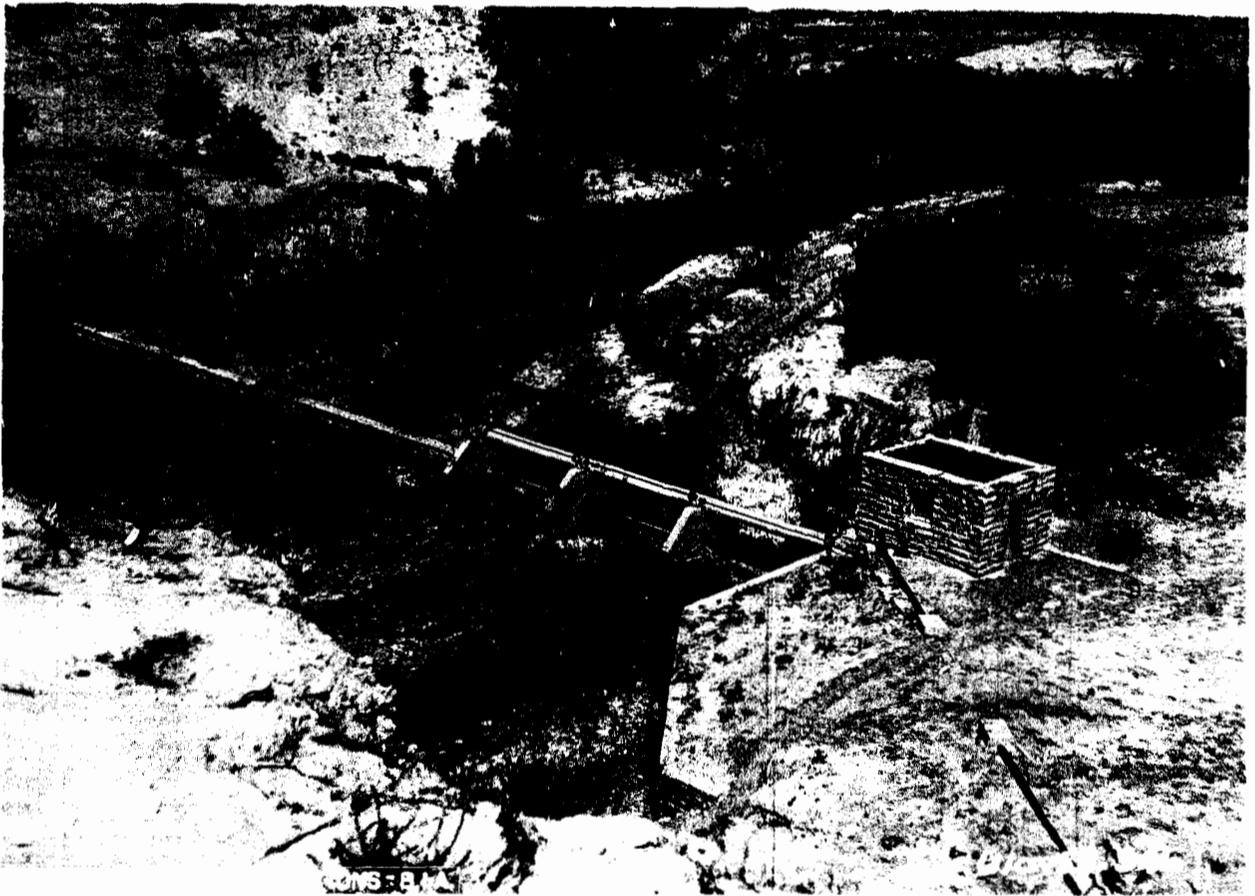
JEDITO IRRIGATION PROJECT  
SHOWING THE OLD STORAGE TANK WHICH IS IN  
POOR REPAIR AND APPARENTLY DID NOT WORK  
SATISFACTORILY.



JEDDITO IRRIGATION PROJECT  
HEADGATE ON JEDDITO IRRIGATION PROJECT  
SHOWING IT HAS NOT BEEN USED FOR YEARS.



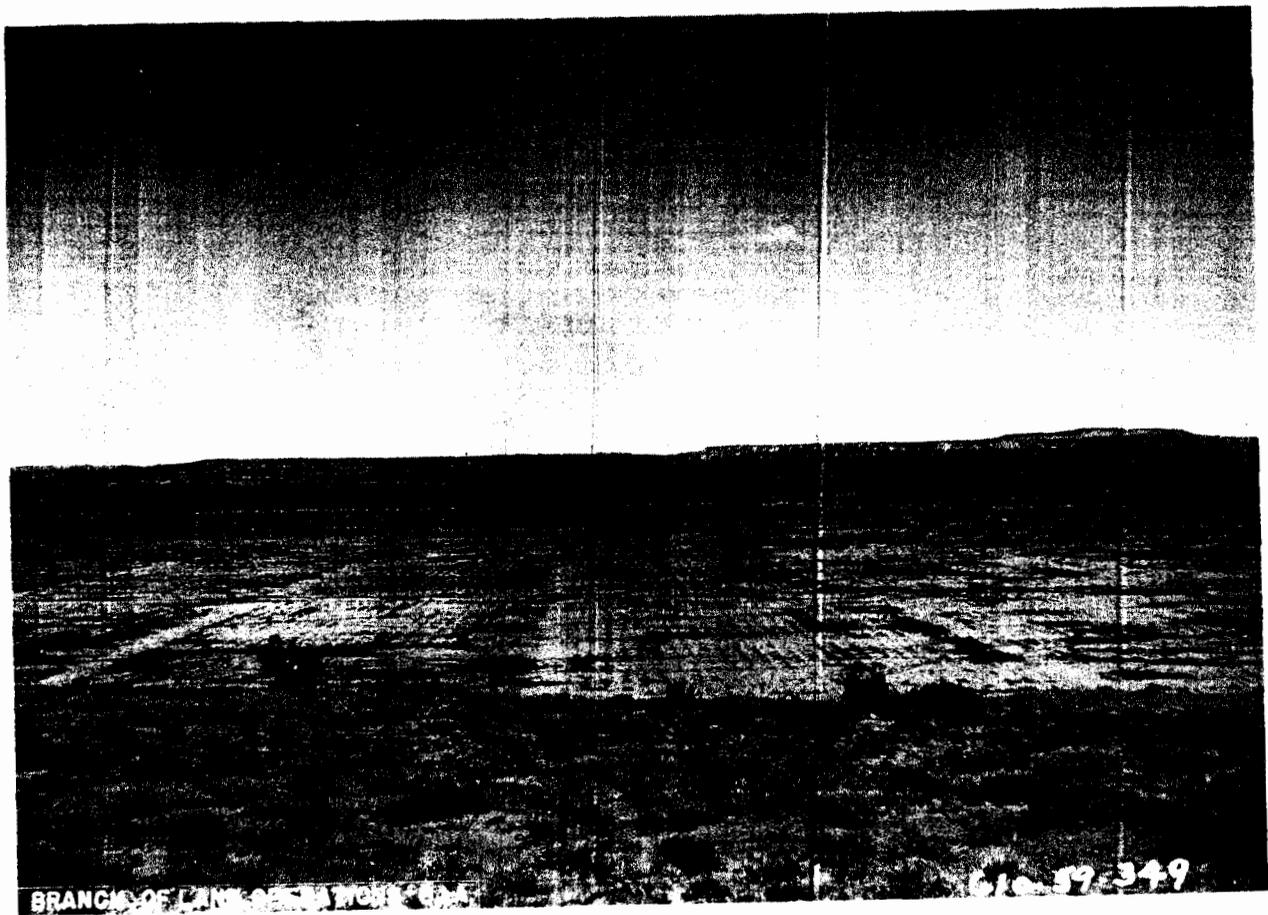
JEDDITG IRRIGATION PROJECT  
IRRIGATION GARDEN PLOT NOW DEPENDING ON SUMMER  
RAINFALL. NO CROPS PRODUCED THIS YEAR.



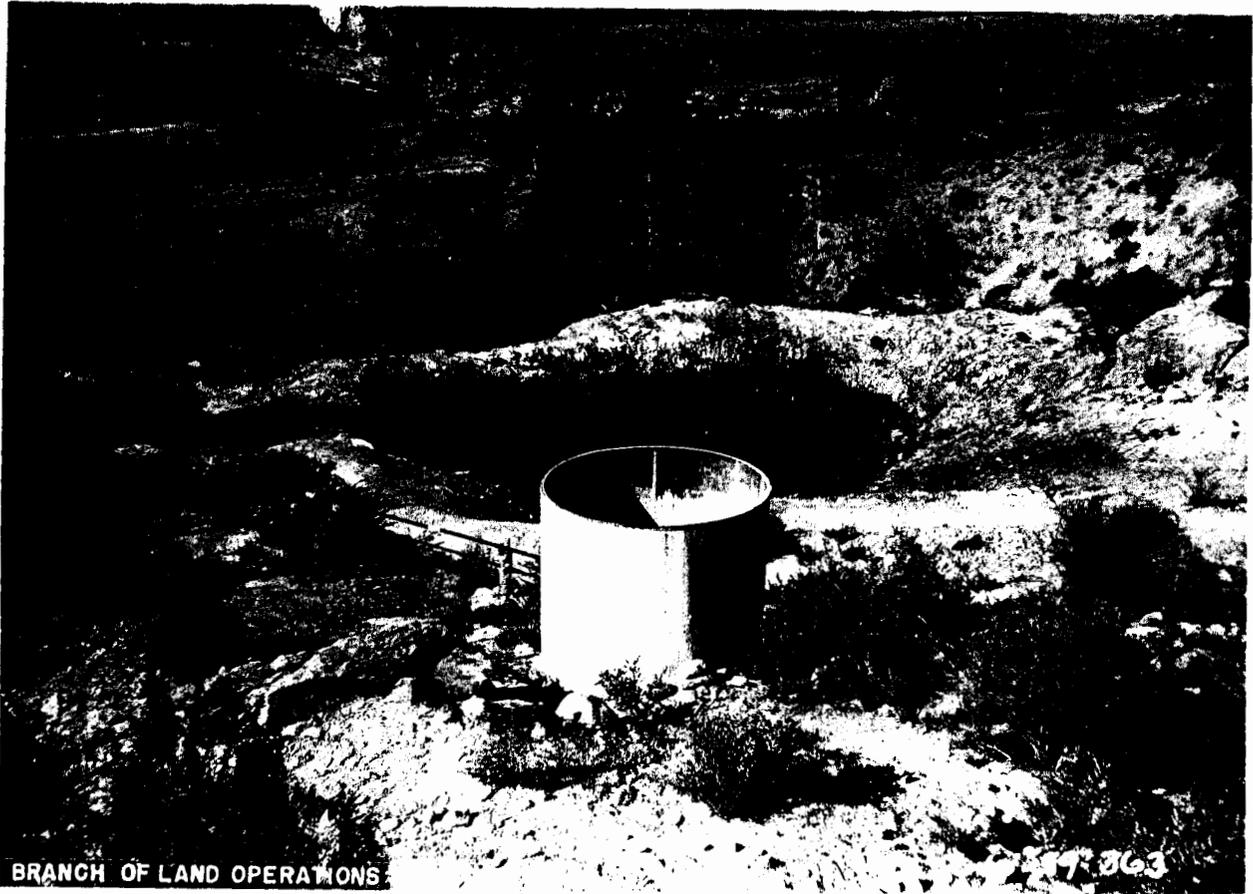
PHILLIPS FARMS PROJECT (POLACCA WASH)  
IRRIGATION DAM LOCATED ON POLACCA WASH. NO WATER  
EXCEPT SEEPAGE FROM SPRINGS UPSTREAM. DAM BADLY  
SILTED.



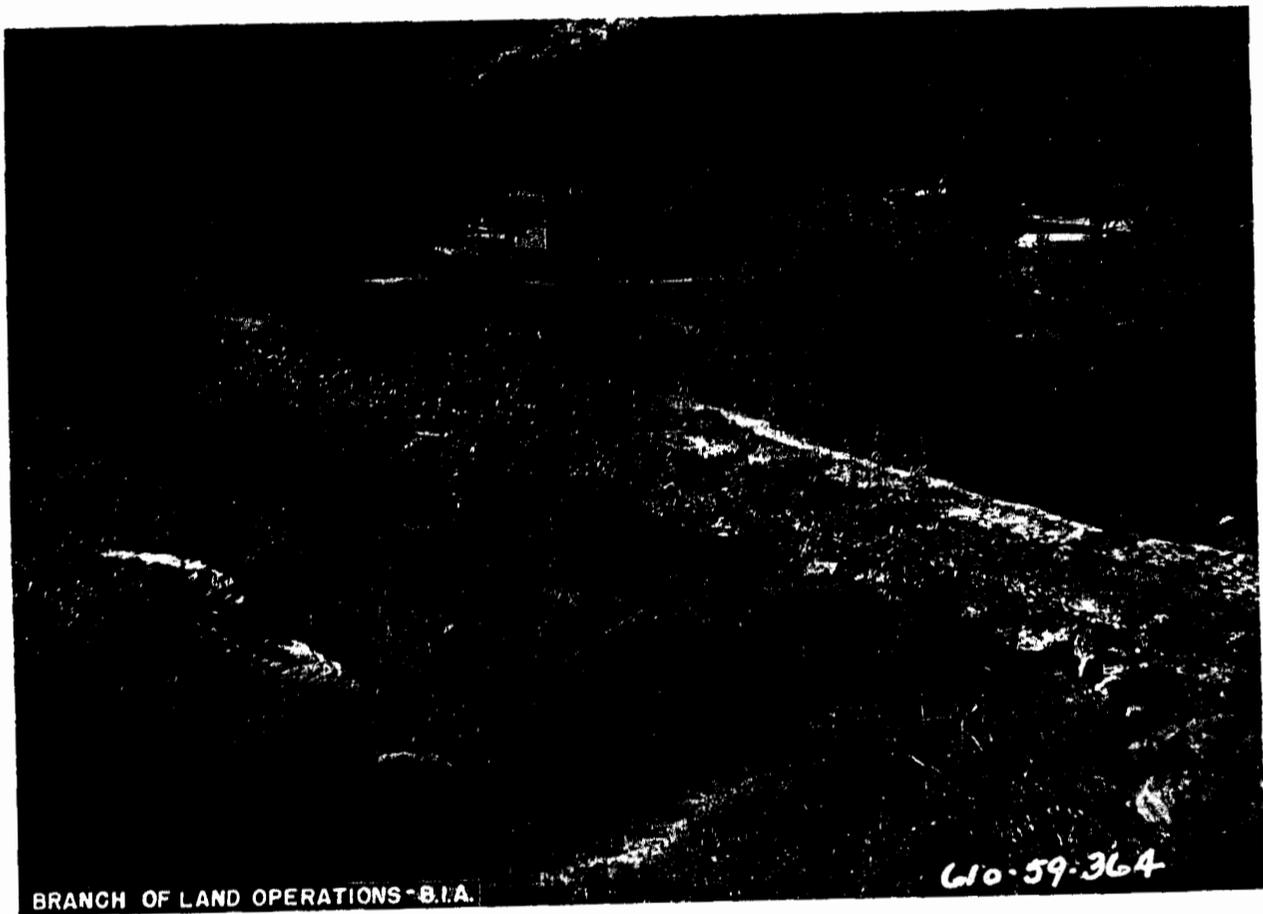
PHILLIPS FARMS PROJECT (POLACCA WASH)  
OLD DELIVERY DITCH TO CARRY WATER FROM PUMP OUTLET  
TO FARM AREA.



PHILLIPS FARMS PROJECT (POLACCA WASH)  
FARMING AREA LOOKING WEST FROM IRRIGATION WAREHOUSE.  
NOTICE OLD ROWS AND OLD HEAD GATE.



BLUEBIRD SPRING PROJECT  
STORAGE AREA FOR IRRIGATING. STEEL TANK  
NOW RUSTED AND FULL OF HOLES.



BLUEBIRD SPRING PROJECT  
SHOWING THE TERRACED GARDEN AREA.



BLUEBIRD SPRING PROJECT  
IRRIGATING THE ORCHARD FROM SPRING.

(NO PICTURE)

KEAMS CANYON GARDEN PLOTS  
FORMER SITE OF GARDEN PLOTS NOW COVERED  
BY AGENCY BUILDINGS.



TALAHOGAN GARDEN PROJECT  
SHOWING THE TERRACE AND SPRING STORAGE.



BRANCH OF LAND OPERATIONS - B.L.A.

610-59-338

TALAHOGAN GARDEN PROJECT  
SHOWING A DELIVERY DITCH FROM SPRING  
STORAGE.



WEPO GARDEN PROJECT  
WEPO WATERING TROUGH AND WEPO GARDEN  
PLOTS IN BACKGROUND.



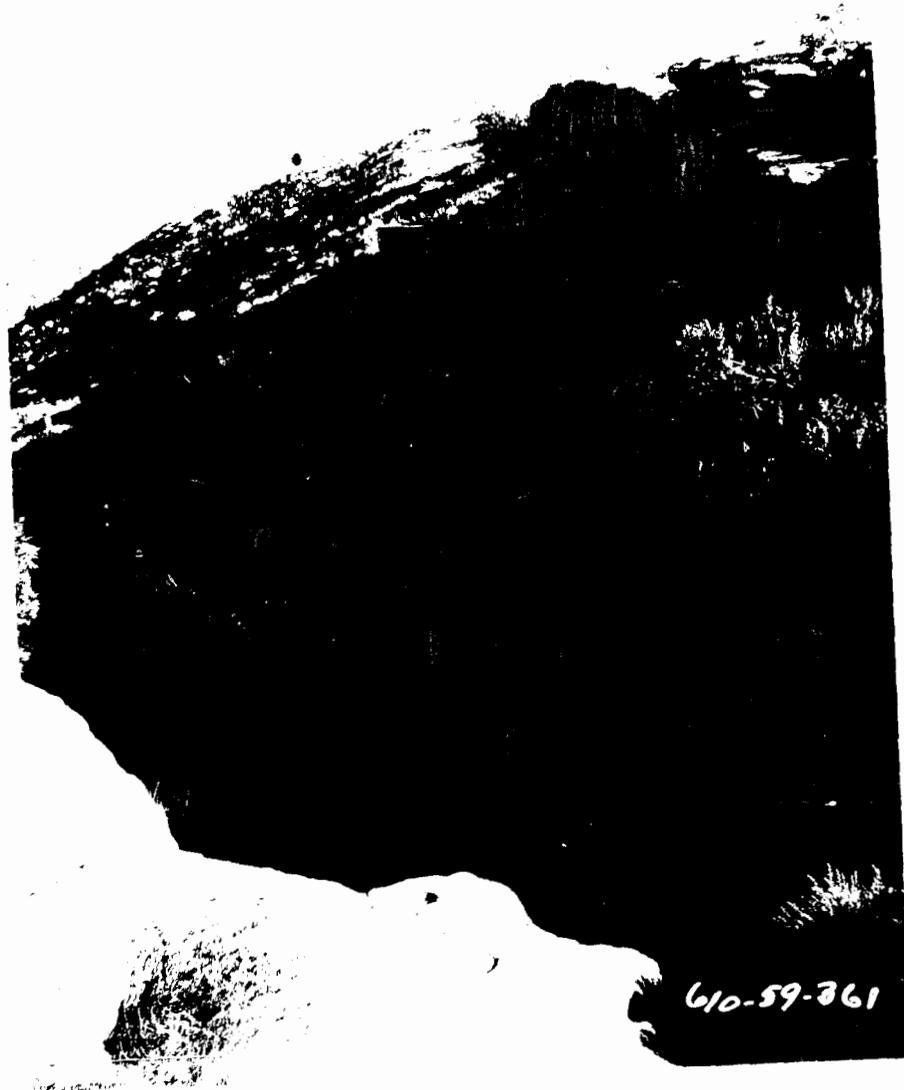
WEPO GARDEN PROJECT  
WEPO GARDENS UPPER TERRACES SHOWING PARTIAL  
PLANTING.



WEPO GARDEN PROJECT  
OLD STORAGE TANK FOR EXCESS WATER  
FROM SPRING.

(NO PICTURE)

BECAUSE OF THE FEELING OF THE TRADITIONALISTS WHO LIVE AT HOTEVILLA AGAINST PHOTOGRAPHING ANY PART OF THEIR VILLAGE NO ATTEMPTS WERE MADE TO TAKE PICTURES OF THE HOTEVILLA SPRING PROJECT. ITS CONSTRUCTION AND PRINCIPLES ARE ESSENTIALLY THE SAME AS THOSE PICTURED FOR BLUEBIRD CANYON, TALAHOGAN SPRINGS AND WEPO VILLAGE SPRINGS.



BACABI GARDEN PROJECT  
SHOWING THE PLANTED TERRACES. SINCE TERRACED  
GARDENS ARE ON WEST SLOPE OF MESA AND IN THE  
SHADE IT WAS DIFFICULT TO GET A GOOD PICTURE.