



WATER-RIGHT DOCKET

Hawaii Volcanoes National Park

Docket No: 1

PRECIPITATION. KILAUEA SECTION

Other Supporting Information

07-07-1975: water right/source docket information

WATER RESOURCES/WATER RIGHTS

DATE: July 7, 1975

WATER RIGHT/SOURCE DOCKET INFORMATION

REGION Western AREA Hawaii Volcanoes National Park

SITE Kilauea Section

STATE Hawaii COUNTY _____ DOCKET NO WR #1

LOCATION _____

REGIONAL BASIN _____ LOCAL BASIN _____

ACQUIRED BY _____

APPLICATION _____ PERMIT _____ CERTIFICATE _____

ACTION DUE _____ PRIORITY _____ RESERVATION August 1, 1916

QUANTITY _____ USE _____

STATUS _____ SOURCE Precipitation

REMARKS _____

NARRATIVE:

On March 21, 1957, a water system improvement project was begun in the Kilauea Section of Hawaii Volcanoes National Park. The new system depends upon the collection and treatment of precipitation (as did the old). The system consists of storage tanks with 1,500,000 gallons of capacity, a 23,500 gallon steel filter tank which is chlorinated by a hypochlorinator unit, and collections surfaces in the rainshed area and on the roofs of the storage tanks. The work was completed on Nov. 2, 1957 and went into operation on that date.

Compiled by M. Ackerman

Approved by W. Werrell

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NARRATIVE STATEMENT

Work commenced on this project on March 26, 1962 when the contractor excavated the site for the pumphouse. Concrete footings and piers were poured. In the following two days the cement block walls were laid up and after a week the concrete deck was framed and poured.

Shipment on piping, pump, and fittings, ordered from the mainland was held up for over a month due to a shipping strike. These items were received on June 1, 1962 and stockpiled under the rainshed at the park. Harada poured the pump base, set the pump, and laid 350 feet of 2 inch galvanized steel line from the pumphouse to the Sulphur Banks road crossing, and made the hookup from the 8 inch water main to the pump and pumphouse on June 4, 1962.

Three thousand six hundred linear feet of line had been laid and was tested on June 8, 1962. The pressure test was set at 160 pounds for two hours but minor leaks were discovered in two swing joints close to the pumphouse. The pipe was disconnected, new joints made and retested. The second test turned out with no leaking.

Three thousand linear feet of pipe was laid in the next three days and the same pressure test from Station 0+00 to Station 66+00 was made on June 11, with no leaking detected.

From June 15 through June 21, our Building Repairman, who is a top electrical man, installed underground electric cable from the transformer pole to the switch box in the pumphouse. This job was completed except for a junction box which had to be installed outside the building. This was mainland ordered which caused another 30-day delay in completing this portion of the project.

From June 11 to June 25, the laying of the water line was completed and tested from Station 66+00 to 127+50 at the valve and meter box location next to the Uwekahuna water storage tank. The valve box was then constructed and the final hookup was made.

The entire water line was filled with a heavy chlorine solution 100 PPM which was held in the line for a 24-hour period and then flushed with the regular system water containing 5 PPM of chlorine.

A final inspection of the completed system was made on July 6 by the Contracting Officer and Park Superintendent Fred T. Johnston, Assistant Superintendent Aubuchon, Park Engineer Smith and Mr. Hajime Harada, Construction Foreman and brother of the contractor. The job was accepted as completed in accordance with the plans, specifications, and change orders involved.

Estimate No. 1 was also the final and covered the entire installation by the contractor.

Day labor portion included the building of redwood boxes for the dresser couplings, air relief valves, and the redwood cover for the valve and meter box at Uwekahuna, and the electrical connections from the transformer pole to the pumphouse.

It was decided not to make the proposed water line hookup to the Kilauea picnic area shelter at this time since the area only receives minor use. This can be done for a very nominal sum at any time the use pattern warrants such action.

The enclosed photographs show portions of the project during and after construction.

Enclosures

Completion Report
Water System Improvement Project (PCP U-35-2 (Por.))
Hawaii National Park
Kilauea Section

GENERAL STATEMENT

The 1957 portion of the water system improvement project at the Kilauea Section, Hawaii National Park, consisted of new facilities for the collection and treatment of rain water and the storage of filtered and chlorinated water for use by the park and concessioner.

The previous collection system, utilizing the roofs of all buildings and the old rainshed, did not produce a sufficient quantity of water and the existing fourteen wood tanks lacked storage capacity for the present and predicted future water consumption. The additional collection surface of the new rainshed, coupled with the area of the old rainshed and the roofs of the new steel storage tanks, should furnish an adequate water supply. Supplemental water may be pumped from the collection sump and wood tanks located in the utility area.

The three steel tanks provide a working storage capacity of 1,500,000 gallons of filtered and chlorinated water. The inter-connected pipelines will permit circulation of water between tanks as well as direct release to the distribution system.

The location of the 23,500-gallon steel filter tank was revised to obtain gravity flow of the collected rainwater from the existing fourteen 100,000-gallon rehabilitated wood tanks used for settlement of raw water. The filtered water is chlorinated by the hypochlorinator unit and pumped to the new steel storage tanks.

Plans and specifications were prepared by the Western Office, Division of Design and Construction. Extra work orders were issued by the Contracting Officer to accomplish the desired minor changes of the contract work.

Bid openings were held at the Superintendent's Office, Hawaii National Park, and contracts awarded as follows:

- (1) Construction of two 500,000-gallon steel tanks and one 23,500-gallon steel filter tank.

Bids opened February 26, 1957

Contract No. 14-10-418-14 awarded to Terminal Steel Co., Ltd., 789 Mapunapuna Street, Honolulu, Hawaii, on March 7, 1957.

H.H.P.

- (2) Construction of rainshed and trestle.

Bids opened February 26, 1957.
Contract No. 14-10-418-15 awarded to M. Sonomura, General Contractor, P. O. Box 1185, Hilo, Hawaii, on March 7, 1957.

- (3) Construction of one additional 500,000-gallon steel tank.

Bids opened April 26, 1957.
Contract No. 14-10-418-16 awarded to Terminal Steel Co., Ltd., 789 Mapunapuna Street, Honolulu, Hawaii, on May 8, 1957.

PROJECT DETAILS

The day labor portion of the project was divided into several categories because of the different types of work and the timing requirements. The main divisions of the work accomplished on a day-labor basis were: clearing the sites; grading tank and rainshed sites; construction of tank bases, installation of tank, filter and water line connections; and installation of a portion of the water mains. The work was assisted and supervised by employees of the park's maintenance and construction division.

The general area for the sites of the rainshed, steel water storage tanks, and the steel filter tank was cleared of a heavy cover of trees and brush. Additional clearing was made beyond the site requirements to provide an operating area for the contractors and for future service roads.

The grading of sites for the rainshed and tanks consisted of removing vegetation and rocks, transferring excess fill material to low areas, and providing a uniform surface with adequate drainage. Bedrock was encountered in several areas and a few large cracks uncovered that were later developed into drains for surface and service road drainage ditches. Service roads were lightly surfaced with gravel after completion of the construction work.

Construction of tank foundations for the three 500,000-gallon and one 23,500-gallon steel tanks consisted of excavation within the perimeter of the retaining rings, erection of forms, placement of ready-mix concrete for the steel reinforced retaining rings, and placement of compacted backfill of select materials within the rings. The excavating for the three large tank foundations was not continued to bedrock as the additional depth required would make an excessive yardage of backfill material and concrete. Bedrock was encountered in excavating for the filter tank foundation, providing excellent foundation conditions. The compacted backfill within the rings consisted of 24 inches of crushed aa lava and other select materials and 4 inches of crushed chips. After construction of the steel tanks the space between the bottom of the tank and the top of the concrete ring was filled with additional layers of crushed chips and hot mix and sealed with bitumuls.

H.N.D

Construction of the rainshed and the trestle-supported conduit by contract was successfully accomplished in accordance with the plans and specifications and minor revisions were made by negotiations with the contractor or extra work orders. The contract was completed within the allotted time and after a final inspection the work was accepted on November 2, 1957.

Construction of three 500,000-gallon steel tanks and one 23,500-gallon steel tank with all the required appurtenances was satisfactorily accomplished by two contracts in accordance with plans and specifications. Two extra work orders were issued for the addition of a metal roof on the filter tank and water depth indicators on the three large tanks. The badly scraped and gouged condition of the shop-applied prime coat of the pre-cut steel plates after erection necessitated the cleaning and sanding of the rusted and rough surface and a complete new prime coat before application of the finish coat. The additional work and material was obtained without extra cost to the Government. It is suggested that future specifications for steel tank construction be revised to correct a similar condition. The two contracts were completed within the allotted time and after a final inspection the work was accepted on November 6, 1957.

The installation of tank, filter, and water line connections consisted of the piping, fittings, all equipment and accessories for the conveyance, control and treatment of the collected rainwater, and final storage of treated water in three large steel tanks. A satisfactory operating system, in general accordance with the construction drawings, was installed and put into operation on November 22, 1957. The system was operated continuously for one month without difficulty and produced 1,500,000 gallons of treated water which filled the three new steel storage tanks.

The installation of a portion of the water mains will provide a separate supply line from the three new steel tanks with a connection to the present distribution system and will be usable in the new distribution system. The original supply line from the wood storage tanks to the distribution system was disconnected to avoid entrance of raw water into the system. The remaining inter-connected portion will serve to circulate water between the wood tanks, feed the supply line to the new treatment plant, and regulate the pump line from the utility area.

H N P

Summary of pertinent data on the three contracts are as follows:

Terminal Steel Company, Ltd. -- Contract No. 14-10-418-14.

Construction of two 500,000-gallon storage tanks and one 23,500-gallon filter tank.

Bids opened February 26, 1957; Contract awarded March 7, 1957.

Base Contract	\$54,096	240 days contract time
Change Order No. 1, 6/3/57 (steel roof on filter tank)	1,065	10 days additional
Change Order No. 2, 6/20/57 (water depth indicators on three storage tanks)	450	11 days additional
Totals	\$55,611	261 days

Contract time started: March 16, 1957

Contract completed and accepted: November 6, 1957

Total time used: 236 days

Terminal Steel Company, Ltd. -- Contract No. 14-10-418-16.

Construction of one additional 500,000-gallon storage tank.

Bids opened April 26, 1957; Contract awarded May 8, 1957.

Base Contract	\$25,915	240 days contract time
No Change Orders		
Totals	\$25,915	240 days

Contract time started: May 21, 1957

Contract completed and accepted: November 6, 1957

Total time used: 170 days

M. Sonomura, General Contractor -- Contract No. 14-10-418-15.

Construction of rainshed and trestle with conduit.

Bids opened February 26, 1957; Contract awarded March 7, 1957.

HWP

Base Contract	\$43,809	240 days contract time
Change Order No. 1, 7/15/57 (revised roof anchorage to purlins)	318	3 days additional
Change Order No. 2, 8/22/57 (added flashing on gutter)	226	0 days
Change Order No. 3, 9/16/57 (added drain connections from tank roofs to conduit)	75	0 days
	_____	_____
Totals	\$44,428	243 days

Contract time started: March 21, 1957
 Contract completed and accepted: November 2, 1957
 Total time used: 227 days

Docket Information

Number of Documents in Docket 9
 Documents Dated from 7/7/1975 to 7/7/1975
 Docket Compiled: 4/11/2011