

HICKAM AFB, HI UTILITY SYSTEM DESCRIPTIONS

SYSTEM DESCRIPTIONS: The following information provided is only an estimate and is subject to change.

Hickam AFB, Hawaii:

Electric: Power is supplied from two Hawaiian Electric Company (HECO) sources at 46 kV. The HECO sources are overhead to near the Base's "Front Station" where HECO-owned transformers step the voltage down to 12.47/7.2 kV for distribution throughout the Base. Base power distribution lines are both overhead and underground and serve a combination of Base housing units, office-type facilities, and mission support facilities. In addition to the Front Station switchgear, there is the "Back Station" which includes switchgear for distribution to the southern portion of the Base. Two underground express feeders connect the Front Station to the Back Station. Additional feeders provide a loop between the two stations. There are approximately 20 miles of overhead primary distribution, 26 miles of underground distribution, and approximately 500 building service step-down transformers. The 1998 consumption for the entire facility was 77.2 million kWh with a peak demand of 23,700 kW.

Potable Water: Potable water is supplied to Hickam AFB by the U.S. Navy. There are six metered connections to the Navy potable water system that supply water to the Hickam AFB potable water distribution system. Three of the meters are an 18-inch turbine meter with a telescopic register and totalizer, installed in below-grade concrete vaults. The other three meters are 12-inch Hershey compound meters that have low-, medium-, and high-flow registers also installed in below-grade concrete vaults. The U.S. Navy is currently servicing these compound meters. A 12-inch connection to the Board of Water Supply water system that is located near the Honolulu International Airport side of the installation has been valved off from the system and is not currently used. The distribution system at Hickam AFB includes piping, valves, backflow preventers, meters, and associated appurtenances. Distribution network main pipelines range in size from 4 to 18 inches in diameter and are constructed of cast iron, asbestos cement, ductile iron, and PVC pipe. Service laterals are typically 1- to 3-inch copper pipe. There are approximately 463,700 linear feet of piping. Water usage by the Base averages approximately 6.5 mgd. Hickam AFB is currently regulated by the State of Hawaii Safe Drinking Water Branch and is classified as a consecutive distribution system coupled to the Navy's potable water system.

Sanitary Wastewater: Wastewater from Hickam AFB is treated at the Fort Kamehameha Sewage Treatment Plant (STP), which is under U.S. Navy jurisdiction and ownership and is located in the western portion of the Base. Wastewater is collected at Hickam AFB in several wastewater collection systems consisting of approximately 406,455 linear feet of vitrified clay, reinforced concrete, PVC, ACP, VP, and cast-iron piping ranging in size from 4 to 24 inches in diameter. Wastewater collection piping at Hickam AFB includes both gravity and pressure piping systems. The wastewater collection system includes 33 sewage pump and lift stations, ranging in size from approximately 100 to 1,000 gpm. Wastewater flows are estimated to average 2.2 mgd. Effluent from the Fort Kamehameha STP discharges into Pearl Harbor from an 18-inch outfall under the Navy's NPDES permit for the STP.

Off-Base Sites:

Bellows Air Force Station, Waimanalo, Hawaii:

Electric: Power is supplied from two separate HECO sources at 4.16/2.7 kV. The northern portion of the system is approximately 2 miles of overhead primary with 30 customer service

transformers representing about 940 kVA of capacity. The southern portion of the system is approximately 1.2 miles of overhead primary and 0.6 miles of underground primary with 14 customer service transformers representing 320 kVA of capacity. The 1998 consumption for the entire facility was 2.4 million kWh with a peak demand of 527 kW.

Potable Water: Potable water is supplied to Bellows AFS by the Board of Water Supply distribution system. The Base potable water distribution system includes two metered connections to Board of Water Supply mains, fire hydrants, valves, and approximately diameter. The Base water system is currently not regulated by the State of Hawaii Safe Drinking Water Branch and is classified as a single connection to the Board of Water Supply.

Kaala Air Force Station, Hawaii:

Electric: Power is supplied from one HECO source at 12.47/7.2 kV. The HECO source is overhead until approximately 190 feet from the Base, at which point it goes underground and continues into the main building at the Base. From the main switchgear, power is provided to a main power panel from which the Air Force facility panel is served. The system potentially to be privatized consists of the outdoor cable runs from the main building to the outlying facilities. These circuits are either 480/277 volt or 120/208 volt and are underground in either duct bank or cable trough. Total duct bank length is roughly 700 feet. The 1998 consumption for the entire facility, including non-Air Force loads, was 1.1 million kWh with a peak demand of 145 kW.

Potable Water: The water system includes the non-potable water system that supplies the Base with water for sanitary uses, such as bathrooms and showers, and for fire protection. The non-potable water supply includes a concrete-lined catchment basin, which collects surface water runoff that gravity-feeds to a 5,000-gallon storage tank. The storage tank connects to a small treatment system, which consists of a high-rate sand filter, tablet-type chlorinator, and micron filter. Treated water is pumped to two above-grade steel storage tanks of 5,000 gallons capacity each. Pumps supply the water to the piping distribution system for sanitary uses and fire protection. The water supply and distribution piping includes approximately 700 feet of pipe up to 10 inches in diameter. Potable water at Kaala AFS is delivered as bottled water. Water use averages less than 1,000 gallons per day. The Base water system is currently not regulated by the State of Hawaii Safe Drinking Water Branch and is classified as a non-potable water system.

Kaena Point Satellite Tracking Station, Hawaii:

Electric: Power is supplied from two HECO sources at 12.47/7.2 kV. The HECO sources are overhead until near the Base, at which point they go underground and continue into the main switchgear at the Base's Power Plant Building. From the main switchgear, power is distributed to the other facilities at the Base. The system potentially to be privatized consists of the outdoor cable runs from the Power Plant Building to the outlying facilities and the outdoor substations and switchgear that serve the buildings. These circuits are underground in concrete encasement. Total duct bank length is roughly 2.5 miles. The 1998 consumption for the entire facility was 24.7 million kWh with a peak demand of 1,200 kW.

Potable Water: The water system includes the non-potable water supply system that supplies the Base with water for sanitary uses, such as bathrooms and showers, and for fire protection. Non-potable water is supplied from the State Department of Transportation Dillingham Airfield well. The water system includes the piping connecting the Dillingham Airfield well to the Base; the piping includes approximately 4 miles of 4-inch galvanized steel piping and three booster pump stations. On-Base water is stored in two above-ground steel tanks of 25,000 gallons and 50,000 gallons storage capacity that provide gravity feed pressure to the piping distribution system. The water distribution system within the Base consists approximately 29,600 feet of

mostly 4-inch and 6-inch-diameter pipelines. Non-potable water consumption averages approximately 2,000 gallons per day. Bottled water is currently delivered to Base for drinking. The Base water system is currently not regulated by the State of Hawaii Safe Drinking Water Branch and is classified as a non-potable water system.

Kokee Air Force Station, Kauai, Hawaii:

Electric: Power is supplied from one Kauai Electric Company source at 12.47/7.2 kV. The source is overhead into the Base where it goes underground to a pad-mount transformer rated 500 kVA, 12.47/7.2 kV – 480-277 volt. From the transformer, the incoming circuit goes underground to a small power plant building where the Base's electrical switchgear resides. From the switchgear, power is distributed to a number of buildings. The system potentially to be privatized consists of the outdoor cable runs from the main building to the outlying facilities. These circuits are either 480/277 volt or 120/208 volt and are underground in either duct bank or cable trough. Total duct bank length is roughly 700 feet. The 1998 consumption for the entire facility was 0.9 million kWh with a peak demand of 127 kW.

Potable Water: The water system includes the non-potable water system that supplies the Base with water for sanitary uses, such as bathrooms and showers, and for fire protection. The water system consists of a water supply well, water treatment and storage facility, and piping distribution system. The water well is 20 feet deep and includes a manually controlled submersible pump. Well water is stored in a 50,000-gallon water tank, and water in the tank is treated by a chlorination and pH adjustment system. A pump and pressure tank supplies water for sanitary uses. A manually operated fire pump that feeds a fire hydrant supplies fire protection water. Water piping includes approximately 3,000 feet of mostly 1- to 2-inch PVC and copper pipe. Water use averages less than 1,000 gallons per day. Bottled water is currently delivered to the Base for drinking. The Base water system is currently not regulated by the State of Hawaii Safe Drinking Water Branch and is classified as a non-potable water system.

Point of contact is Dana Voight (dana.voight@tyndall.af.mil), FAX 850-283-6336