

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



March 20, 2001

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CLIFFORD S. JAMILE
Manager and Chief Engineer

'01 MAR 28 P3:54

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

Dear Ms. Salmonson:

Subject: Finding of No Significant Impact for the Board of Water Supply's Proposed
Manana Well Improvements, Ewa, Oahu, Hawaii, TMK: 9-7-24: Portion of 41

The Board of Water Supply reviewed the comments received during the public comment period which began on November 23, 2000. The environmental impacts of this project have been adequately addressed as discussed in the final environmental assessment (EA) and a finding of no significant impact will be issued. Please publish our proposed well project as a finding of no significant impact in the next Office of Environmental Quality Control (OEQC) Bulletin.

Enclosed are a completed OEQC Bulletin Form and four copies of the final EA.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Very truly yours,

FOR CLIFFORD S. JAMILE
Manager and Chief Engineer

Enclosures

cc: Glen Koyama, Belt Collins Hawaii

APR 8 2001

FILE COPY

2001-04-08-0A-FEA-Manana

FINAL ENVIRONMENTAL ASSESSMENT

PROPOSED (WELL IMPROVEMENTS)
Manana, Oahu, Hawaii



**Board of Water Supply
City and County of Honolulu**

FINAL ENVIRONMENTAL ASSESSMENT

**PROPOSED WELL IMPROVEMENTS
Manana, Oahu, Hawaii**

March 2001

Prepared for:

**Board of Water Supply
City and County of Honolulu**

Prepared by:

**Belt Collins Hawaii
Honolulu, Hawaii**

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I. SUMMARY:

PROPOSING AGENCY:

Board of Water Supply (BWS)
City and County of Honolulu

APPROVING AGENCY:

Board of Water Supply
City and County of Honolulu

**GENERAL PROJECT
DESCRIPTION:**

The BWS is proposing to outfit an existing well for permanent production and develop, in the future, a second well on the same site to serve as a backup well. Outfitting the existing well for production will provide a supplemental source of 2.0 million gallons per day (mgd) for BWS's municipal water system serving the Primary Urban Center of Oahu.

PROJECT LOCATION:

Manana, Oahu
TMK 9-7-24: Portion of 41

DETERMINATION:

Finding of No Significant Impact

**CONSULTED AGENCIES AND
PRIVATE ORGANIZATIONS:**

Federal Agencies
Natural Resources Conservation Service
U.S. Department of the Navy

State Agencies
Department of Health
Department of Land and Natural
Resources (DLNR), Land Division
State Historic Preservation Division
Office of Hawaiian Affairs

City Agencies
Department of Design and Construction
Department of Facility Maintenance
Department of Planning and Permitting
Department of Transportation Services
Fire Department
Police Department

Utility Companies
Verizon Hawaii
Hawaiian Electric Co. Inc.

II. DESCRIPTION OF THE PROPOSED ACTION

Project Objective

The BWS is proposing to develop a new Pearl Harbor area source to meet the projected increase in potable water demand from the populated Primary Urban Center (PUC) of Oahu. The new source would feed into a network of interconnected distribution systems that currently serve the Diamond Head to Pearl City area.

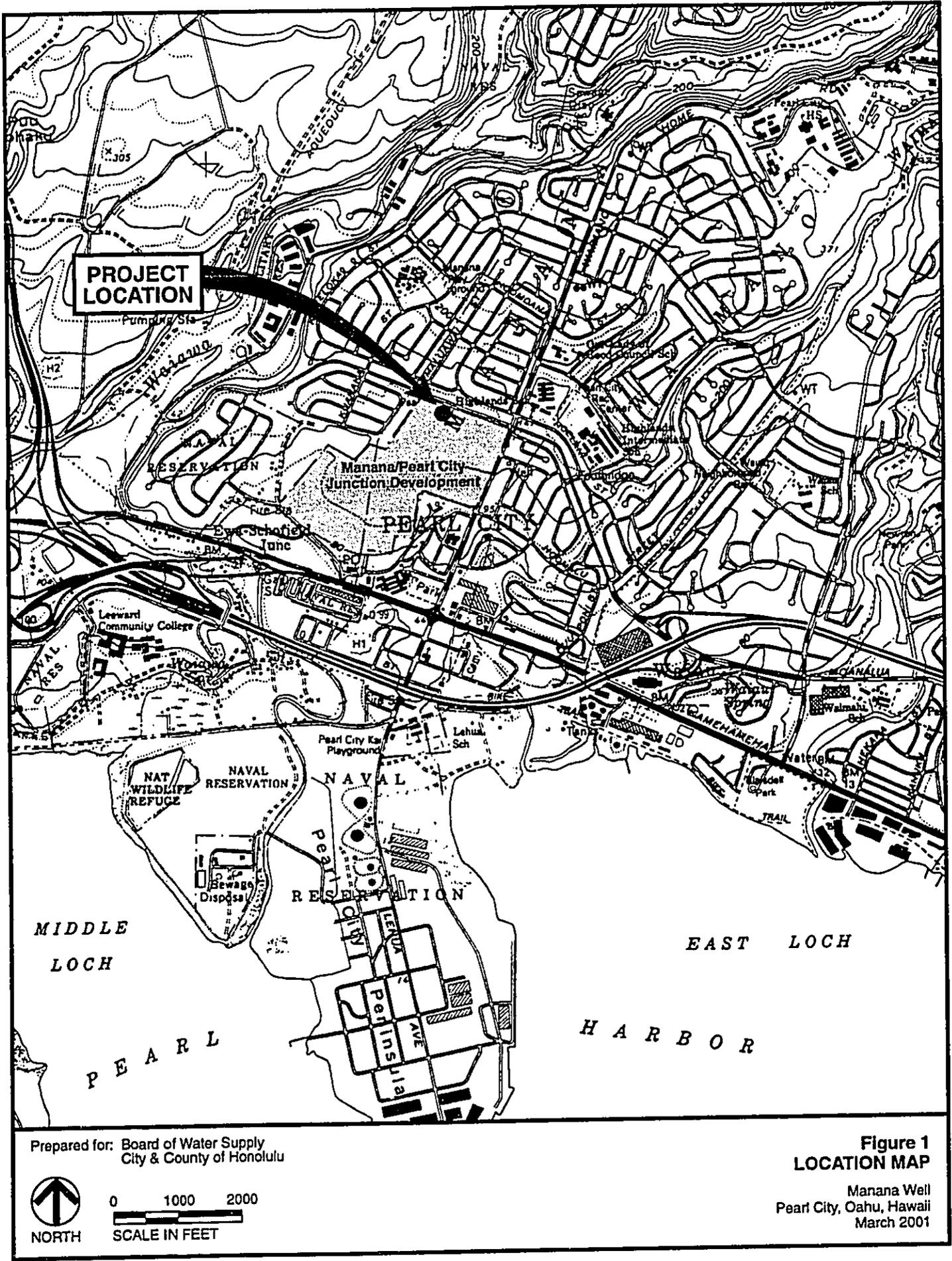
Current allocations for existing wells in the PUC are close to the overall sustainable yield for the region. New sources would have to be developed in the aquifers of the adjacent Pearl Harbor sector to supplement the sources in the PUC.

Description of the Proposed Action

The BWS Manana well site is located at the approximately 136-foot elevation, above mean sea level (msl), in a planned redevelopment area known as the Manana/Pearl City Junction Development (MPCJD) in Pearl City (see Figure 1). The well site is part of a larger parcel (see Figure 2) that was recently subdivided for the MPCJD. The Tax Map Key identification of the larger parcel is 9-7-24: 41 (TMKs for the subdivided parcels have not yet been created).

The approximately 14,700 sq. ft. site is owned by the City and County of Honolulu (City). An agreement with the City will be executed to allow BWS to proceed with planning, design and construction of the well facility. Access to the site will be via a planned "spine road" that is part of the MPCJD Master Plan (see Figure 3). The spine road will extend from the end of Moanalua Road through the MPCJD and connect with Kuala Street near Kamehameha Highway. Construction of the spine road has begun and is preliminarily scheduled to be completed in the summer of 2001. A preliminarily subdivision plan of the MPCJD is shown on Figure 4.

The BWS is proposing to outfit an existing well (Well No. 2458-05) on the Manana site, connect it to its distribution system via an adjacent 42-inch water main and place it into production to serve the PUC (see Figure 5). Testing of the well after it was first drilled in 1998 showed that the water had a chloride content that ranged between 120 and 128 parts per million (ppm), which is potable water quality. In the near future, BWS will also develop a second well on the site as a backup well. The well will be drilled, pump tested, outfitted and placed on line. A schedule for completing the second well has not yet been determined.



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City & County of Honolulu

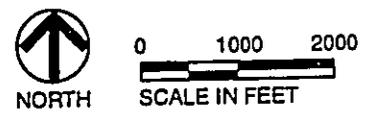
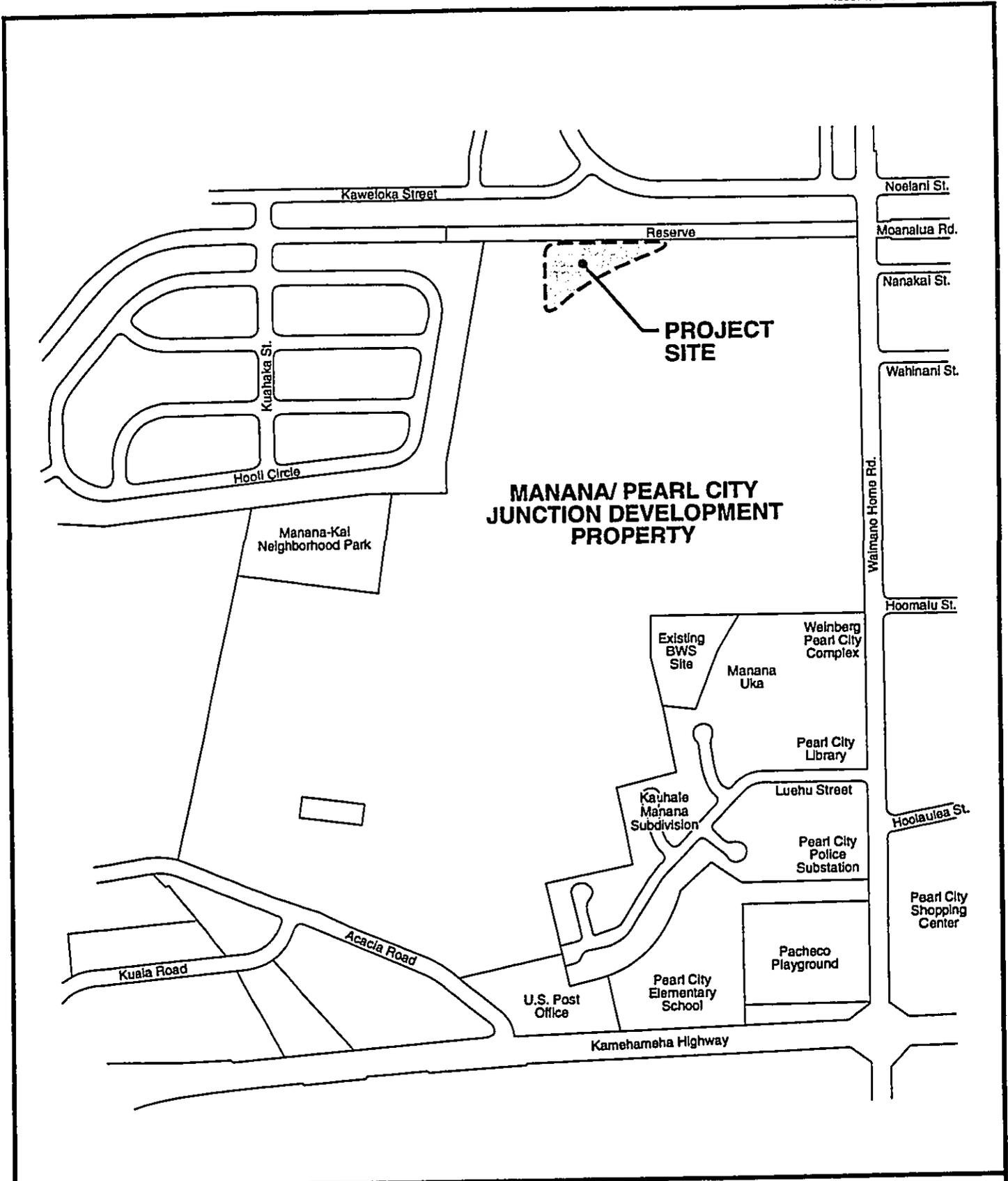


Figure 1
LOCATION MAP

Manana Well
Pearl City, Oahu, Hawaii
March 2001



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City & County of Honolulu



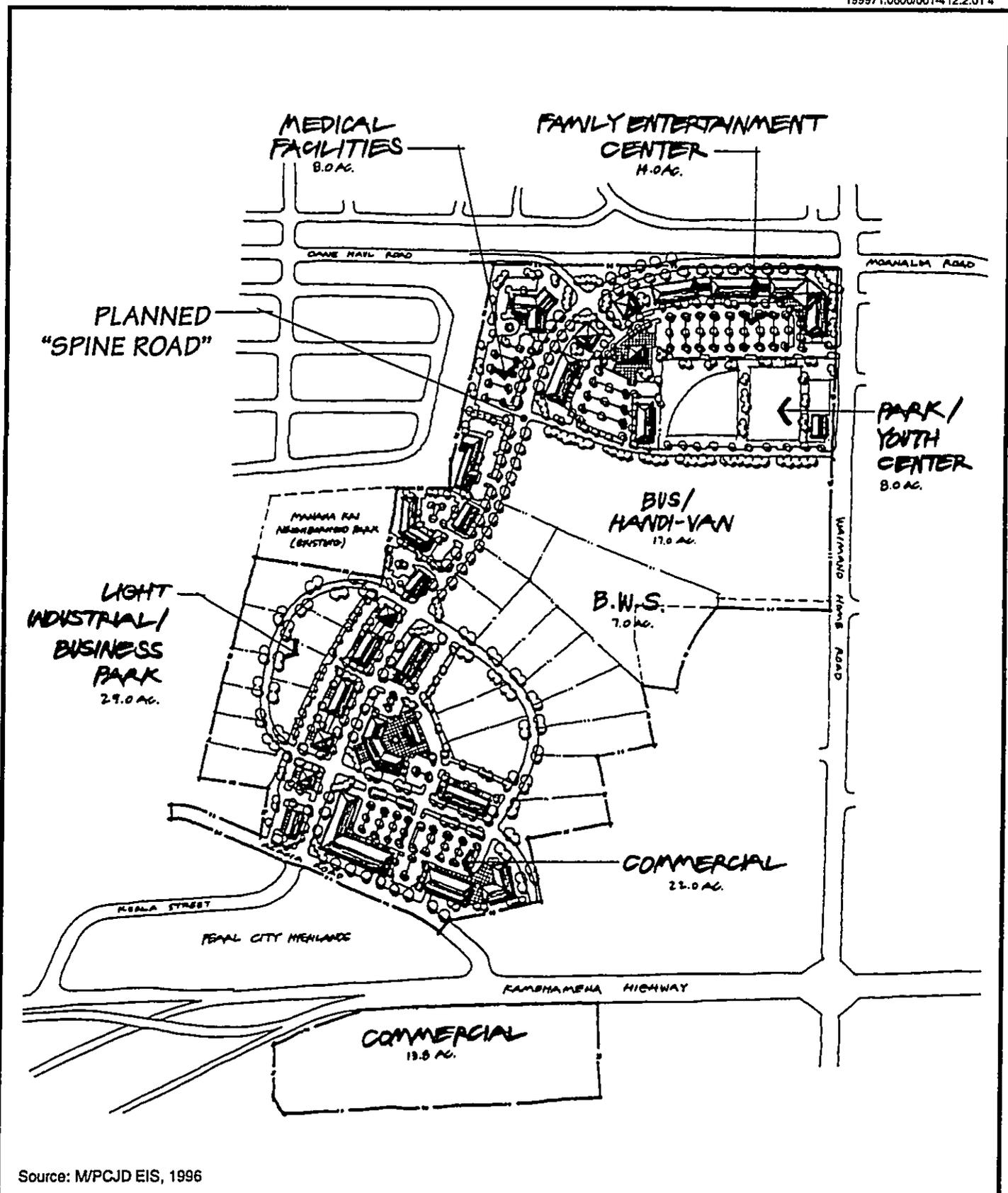
NORTH

0 250 500

SCALE IN FEET

Figure 2
SITE LOCATION

Manana Well
Pearl City, Oahu, Hawaii
March 2001



Source: M/PCJD EIS, 1996

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City & County of Honolulu

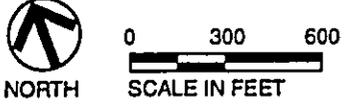
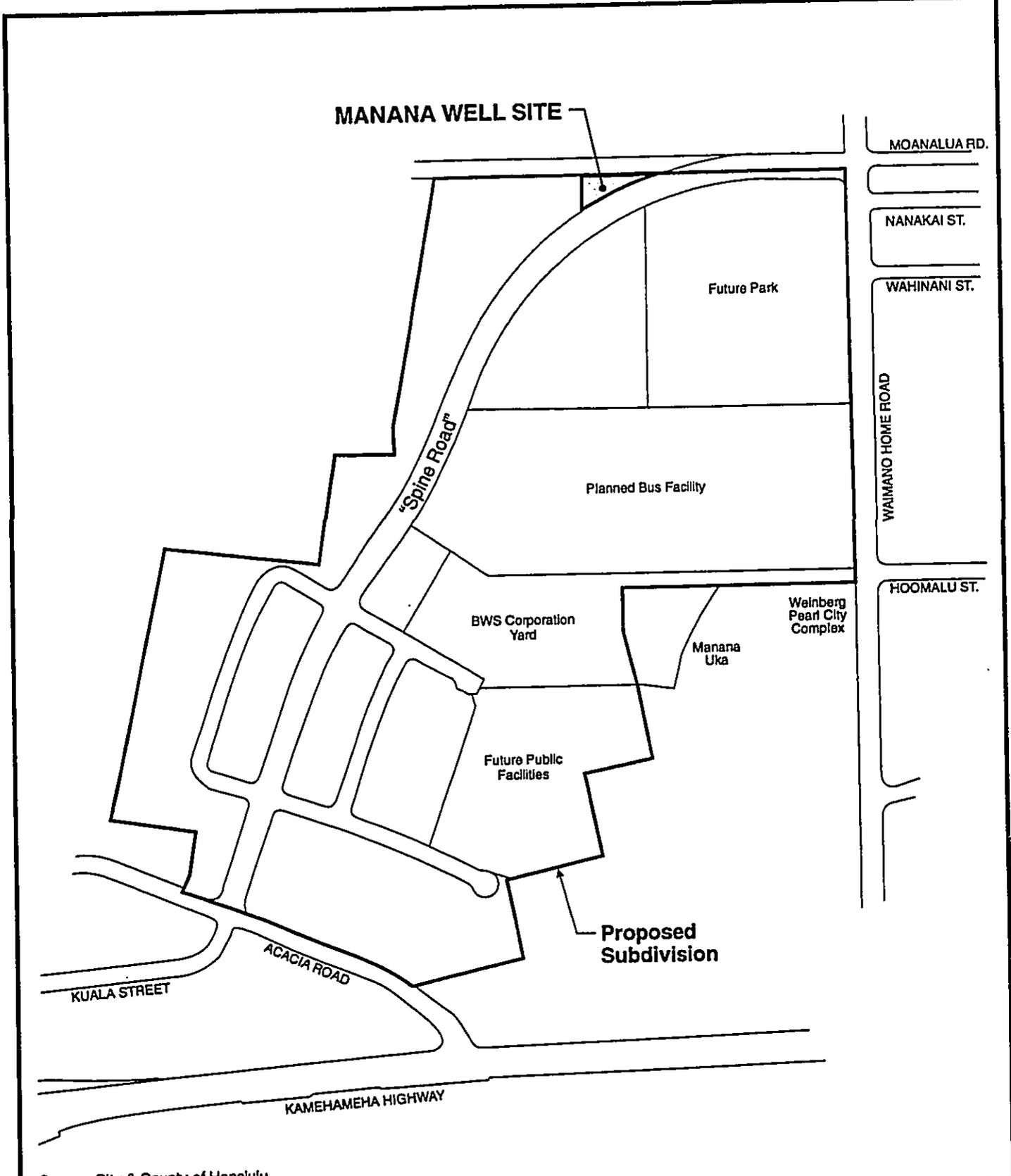


Figure 3
MANANA/PEARL CITY JUNCTION DEVELOPMENT—
1995 CONCEPTUAL MASTER PLAN
 Manana Well
 Pearl City, Oahu, Hawaii
 March 2001



Source: City & County of Honolulu

Prepared for: Board of Water Supply
City & County of Honolulu



NORTH

0 250 500



SCALE IN FEET

Figure 4
INITIAL SUBDIVISION OF MANANA/
PEARL CITY JUNCTION DEVELOPMENT PROPERTY
 Manana Well
 Pearl City, Oahu, Hawaii
 March 2001

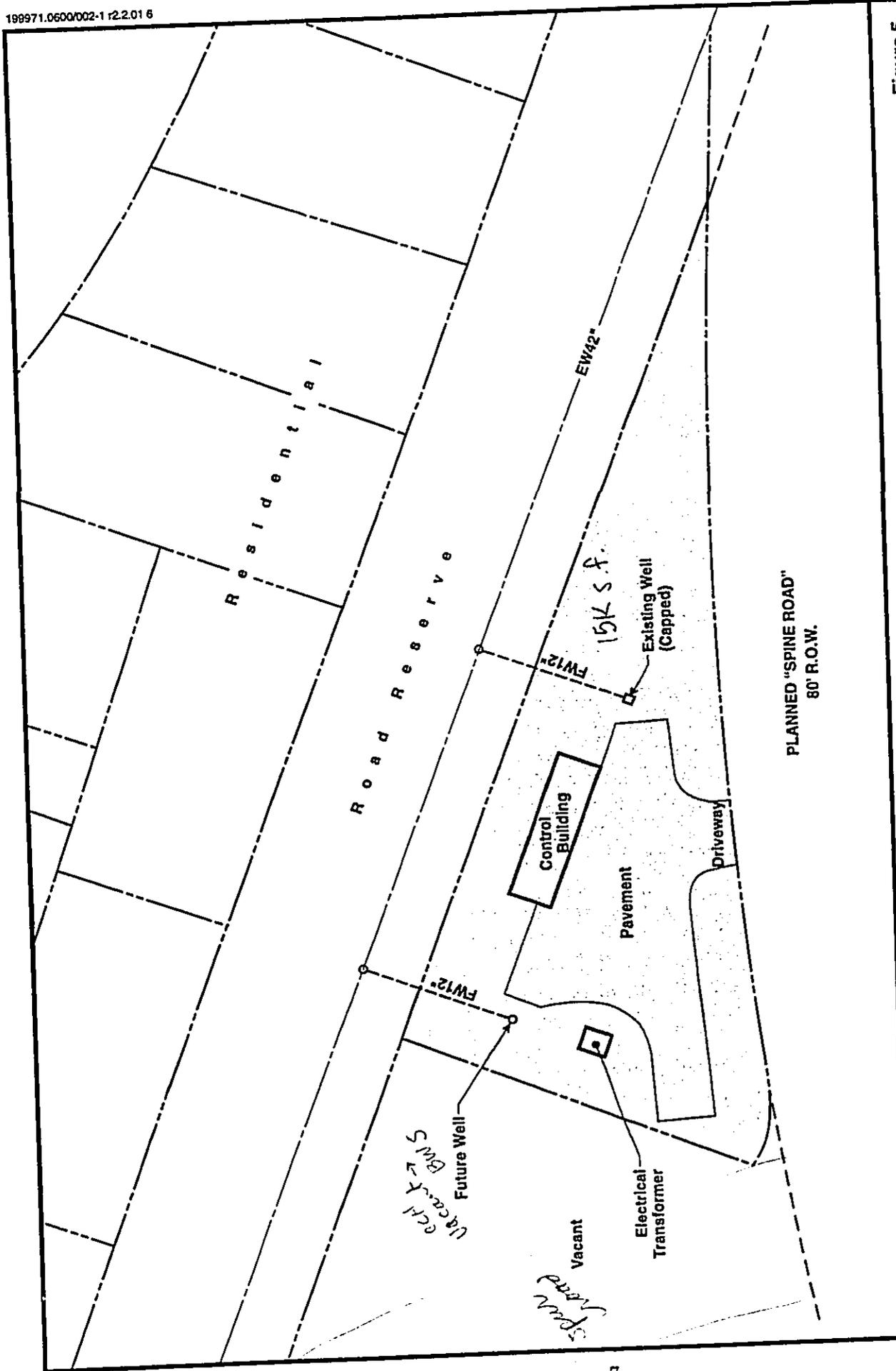
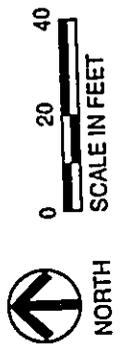


Figure 5
SITE PLAN

Manana Well
Pearl City, Oahu, Hawaii
March 2001

LEGEND

EW Existing Water Line
FW Future Water Line



An Environmental Assessment (EA) was prepared and accepted by the BWS in 1998 for two exploratory wells on the site. As described above, only one of the two wells has been drilled to date. The second well was postponed for future development. When the decision is made to move forward with the second well, it will be developed as a backup production well for the first well.

This EA will address the conversion of the two exploratory wells into production wells and update the 1998 EA on the anticipated impacts of drilling and test pumping of the second well. The acquisition of the site from the City, which is planned to occur before the well facility is placed on line to serve the community, will also be covered.

When completed, the wells will provide a supplemental source of 2.0 mgd of water to BWS's system serving the PUC of Oahu.

Well Outfitting

BWS's existing Well No. 2458-05 was originally drilled in 1998. Its ground elevation is 136.6 feet (msl), and its total depth is 277 feet. The elevation at the bottom of the solid casing is -40 feet (msl), and the elevation at the bottom of the hole is -140 feet (see Figure 6). Its static head is at elevation 13.7 feet (msl).

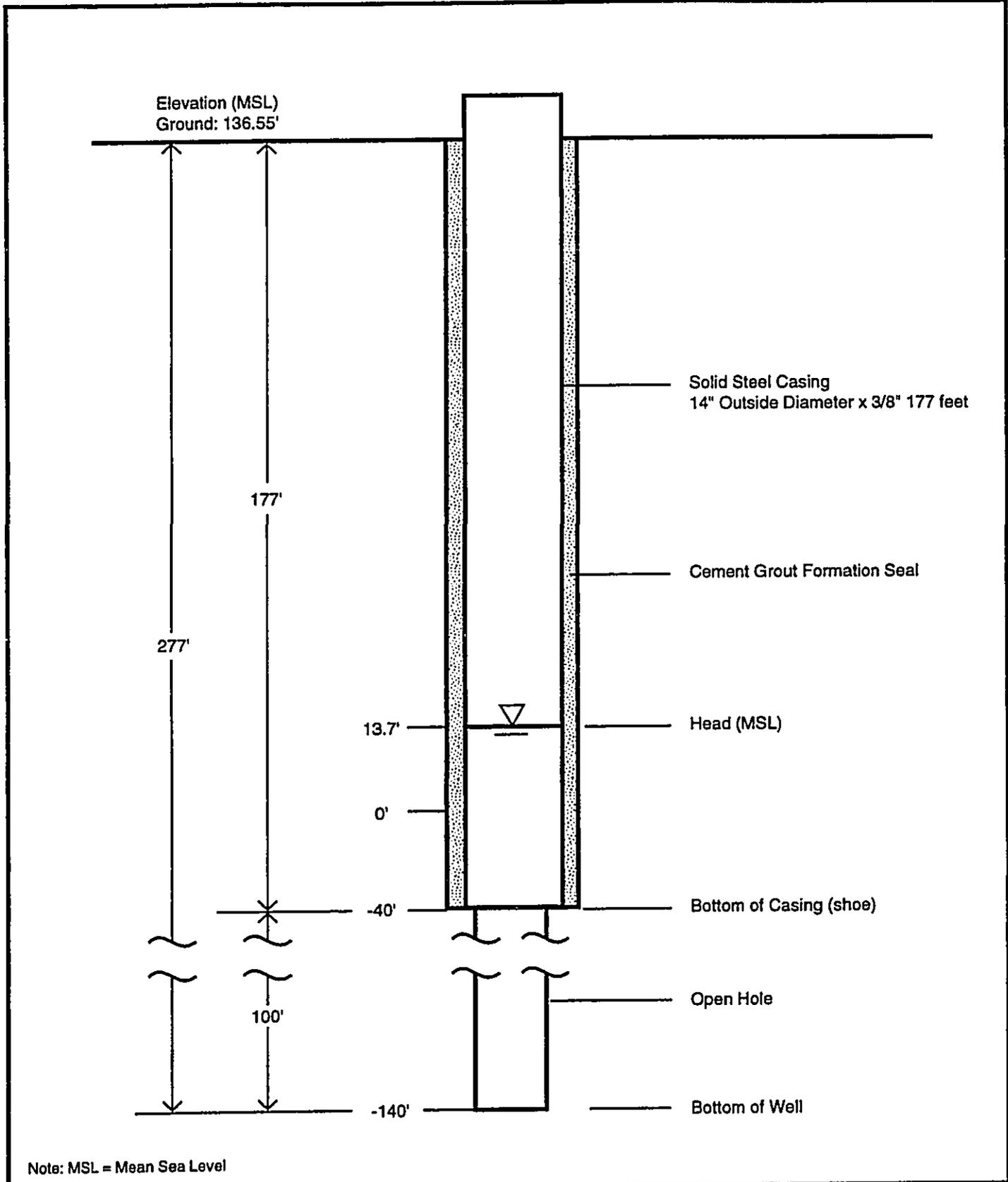
The existing well will be equipped with a submersible pump and 100 hp motor capable of delivering 2.0 mgd. The submerged pump and motor will not generate audible noise at the surface of the site. The outfitted well will be connected to BWS's existing 42-inch water main located along a road reserve on the mauka boundary of the well site. A drainage line will be installed from the well to the City's stormwater drainage system in MPCJD's new spine road.

Support facilities will include a control building within the well site. The one-story building would be of concrete construction and measure approximately 14' x 42' x 12'. It will house the motor control center, electrical equipment, alarm system and chlorination system for the two wells.

Electrical power will be provided by Hawaiian Electric Co. Inc. (Heco) through underground lines along the new spine road (see "Water, Sewer, Electricity and Telephone" section on page 32).

Second Well

The second well will be drilled approximately 100 feet from the first well within the BWS well site (see Figure 5). Initial work will require



Note: MSL = Mean Sea Level

Figure 6
EXISTING MANANA WELL

Manana Well
Pearl City, Oahu, Hawaii
March 2001

NOT TO SCALE

preparation of the site for drilling. Then, a truck or trailer-mounted drilling rig and other support equipment will be brought in to drill an approximately 17 to 18 inch diameter hole (or larger depending on the contractor) approximately 277 feet deep to an elevation of -140 feet (msl). The static head is anticipated to be the same as the first well at 13.7 feet (msl).

In drilling the hole, either a cable tool or rotary drilling method will be used. The cable tool method employs a repeated raising and dropping of a heavy bit within the hole until the desired depth has been attained. Material from the impact procedure is then bailed from the hole and placed in an adjacent disposal pit. The residual material is not expected to contain any contaminants.

The rotary method employs a drill bit that bores a hole while drilling fluid is pumped down the drill stem to the drilling bit. The drilling fluid, comprised of air and fluid (water and soap), is then forced back up the hole carrying with it drill cuttings to the surface where the material is then removed from the fluid by a screen and placed in a disposal pit.

Once drilling is completed, a 14-inch outside diameter steel casing is then installed with the annulus grouted for a depth of approximately 177 feet or to an approximate elevation of -40 feet. The depth of the well is adjusted based on actual conditions in the field.

After drilling and casing are completed, which normally takes approximately 6 to 16 weeks depending on the contractor and his drilling methodology, the test pumping phase occurs. Two tests are involved. The first test, known as the step-drawdown or yield-drawdown test, includes the pumping of water from the well at various pumping rates to estimate the well's specific capacity (quantity withdrawn per foot of drawdown). For each pumping rate, the drawdown is measured.

After the step-drawdown test is completed, a sustained test pumping is conducted. The well is continuously pumped 24 hours a day for at least five days. The test is designed to determine the sustainable capacity of the well. It also includes tests on water quality as well as monitoring of existing wells downstream of the well site.

The discharge from flushing and test pumping of the well is planned to be conveyed to the drainage system in the City's new spine road.

After the test pumping is completed, the pump will be removed and a permanent pump will be installed similar to the pump in the first well. With a deep submersible pump, the second well, as with the first well, is

not expected to generate noise levels that are audible to the adjacent residential properties.

Accessory Facilities and Access

The site will have a driveway and pavement area for maintenance vehicles and will be fenced on the property boundary with a chain link fence and locked gate.

Access to the site will be from the City's planned spine road, which is presently under construction and preliminarily scheduled for completion in the summer of 2001.

If necessary, a road reserve mauka of the well site could be used as a temporary access to the well if the spine road is not completed on schedule. The road reserve was originally planned as a connection between Moanalua Road and Waihona Street in Waiawa Gulch. A portion of this former cane haul road, however, will now be used for the new spine road. The long-term future use of the remainder of the road reserve is not certain, but is being considered by the City as a potential connector street between the spine road and Kuahaka Street.

Development Schedule

Outfitting the first well, including construction of the control building and well site infrastructure, is expected to begin in mid 2001 and be completed in early 2002. Drilling, test pumping and outfitting the second well are projected to occur some time between 2005 and 2008 or at some future date.

Development Cost

The preliminary cost for construction of the well facility is estimated to be at \$1.1 million. The source of funding for this project is the BWS. No state or federal monies are involved.

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT

Manana/Pearl City Junction Development Master Plan

The proposed well project is located in the master planned MPCJD property. The MPCJD site consists of 122.4 acres of land formerly owned U.S. Department of the Navy. Since 1994, as part of a nationwide federal lands reduction plan, the U.S. Government arranged and recently transferred title on the Manana/Pearl City property to the City and County

of Honolulu. The land was previously used by the Navy for warehouses and storage facilities.

In 1995, a planning task force was organized by the City to prepare guidelines for the development of the MPCJD property. The Pearl City Planning Task Force, as it was known, comprised of community leaders and agency officials. After several months of extensive community meetings and public review, the task force report, recommendations, and concept development plan were finalized and adopted by resolution by the Honolulu City Council.

The MPCJD concept plan currently shows a variety of land uses including commercial retail, office, public facilities, community amenities and light industrial. The proposed well site, however, is not shown. It is a utility that is normally unidentified on land use master plans.

In adopting the task force report, a "Vision Statement" was included to articulate the development criteria for the area. It stated that opportunities should be provided for area residents and surrounding communities to improve their quality of life and to establish a positive, unique and long-term identity for the project area that the community can be proud of. The task force should also strive to meet the current and future needs of the neighborhood while incorporating the requisites of the City.

In 1996, a Final Environmental Impact Statement (EIS) for the MPCJD master plan was completed and accepted by the Governor of the State of Hawaii. The project is now in its implementation stage. Construction of the MPCJD's spine road is underway and preliminarily scheduled to be completed in the summer of 2001. The branch roads on the eastern side of the spine road are expected to be constructed with the spine road. The branch roads on the western side will be constructed at a later date as market conditions determine the timing and need for the secondary rights-of-way.

Initial subdivision of the MPCJD property has been approved by the City. It includes five parcels, four of which are designated for public facilities. Subdivision of the remainder of the MPCJD property will occur as new tenants occupy the area.

BWS is currently negotiating with the City on its well site and is moving forward with its site planning and construction design. It will be one of the first tenants in the MPCJD along with the City's bus corporation yard and BWS's corporation yard.

Regional and Project Setting

The project site is located in the residential community of Manana - Pearl City. There are more than 45,000 people living in this Leeward Oahu suburb. A number of other residential communities are located adjacent to and near Pearl City, including Waipahu, Crestview, Seaview, Waipio Gentry and Waikele to the northwest and Waimalu, Newtown and Aiea to the southeast.

BWS's Manana well site is part of a 122-acre landholding previously owned by the U.S. Navy and used as an equipment and supply storage area for naval operations at Pearl Harbor. Naval housing projects still occupy lands immediately to the west and approximately one mile to the south of the former naval reservation. A naval ship and vessel storage area is located in Middle Loch of Pearl Harbor approximately two miles southwest of the BWS property.

A number of commercial and community facilities serve Manana and Pearl City. Kamehameha Highway and Waimano Home Road are the two main roadways that provide access through the community. Kamehameha Highway is the primary thoroughfare through Pearl City, Waimalu and Aiea and is abutted by commercial strip development. Waimano Home Road is the predominant mauka-makai access through Pearl City. It connects Kamehameha Highway and Komo Mai Drive which serves Pacific Palisades.

Beyond the MPCJD property, the Pearl City Shopping Center, Pearl City Power Center, Pearl City Police Substation, Pearl City Library, U.S. Post Office, Hale O Hauoli, an apartment building for elderlies, Manana-Uka townhomes and The Harry & Jeanette Weinberg Pearl City Complex are located to the south of the BWS site, while residential homes are located to the north. There are four elementary, one intermediate and one high school, as well as one community college in the general vicinity.

Existing Land Use

The boundaries of the project site are currently being finalized, and the subdivision process for officially establishing a parcel for the site will be occurring soon. The project site is presently occupied by BWS's existing Well No. 2458-05.

In and around the well site, abandoned military warehouses, which were more than 50 years old, have been demolished. Building pads and paved vehicular accesses were also removed. Some warehouses, especially in the central lower area, are being retained until those areas are ready for

redevelopment. The area immediately around the well site, however, has been cleared and rough graded in preparation for the MPCJD project.

Previously, the U.S. Navy prepared an Environmental Baseline Survey that researched past practices and tested the soils and buildings for contamination. Entitled, Comprehensive Long-Term Environmental Action Navy for Pacific Division Environmental Baseline Survey for Transfer for Manana Storage Area and Pearl City Junction, the study identified potential hazardous environmental conditions on the MPCJD property.

According to the study, there were two environmental concerns. Within 28 warehouse structures, friable and non-friable asbestos were documented in their roofing tar and floor tiles. Also, lead-based paint was assumed present throughout the property. Accordingly, appropriate mitigation measures were implemented during demolition to comply with the applicable State and Federal standards regarding the removal and disposal of asbestos and lead-based paint.

As provided in the Memorandum of Understanding with the U.S. Navy, the Navy is to "deliver the property to the City free of all surface and subsurface hazardous materials" and is "responsible for the remediation and costs thereof for any and all hazardous wastes, which were directly or indirectly related to the Navy's prior use or ownership" of the property.

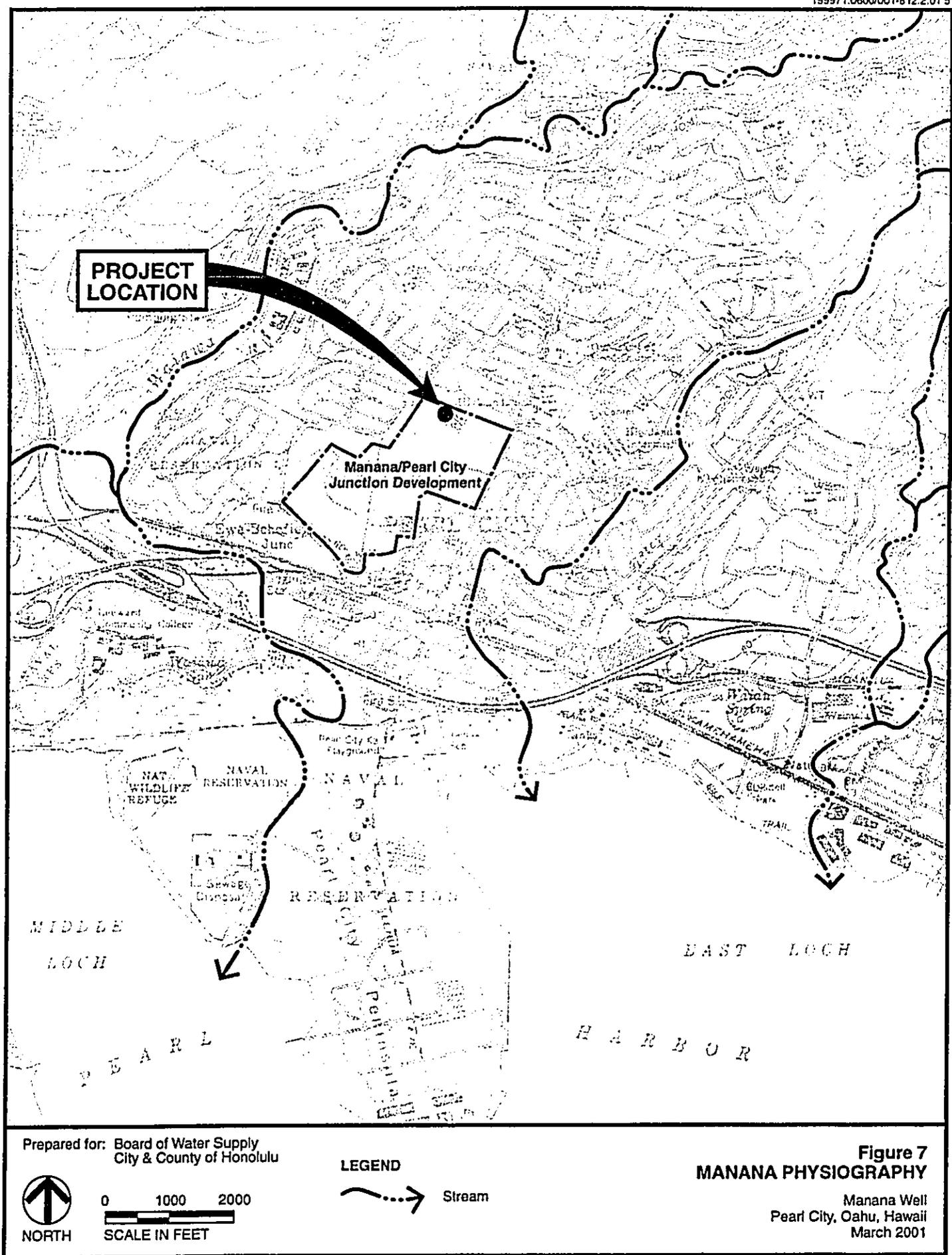
Land Tenure

The project site is part of an existing 108.7-acre parcel (TMK 9-7-24: 41) owned by the City and County of Honolulu and of the 122.4-acre property comprising the MPCJD site. BWS plans to subdivide and acquire the 14,700 sq. ft. well site from the City before it places the facility into permanent operation. Acquisition of the site, which is not ceded land according to research with the State DLNR, is expected to occur in 2001.

Physiography

The project site is located on the rise above Pearl City Peninsula in Pearl City, Oahu (see Figure 7). It is approximately 5,400 feet from Pearl Harbor and is approximately 136.6' (msl) in elevation. The former military warehouse land has an overall slope of approximately 3 to 7 percent with no distinct topographic features, such as gullies, rock promontories, etc. The land predominantly slopes from east to west.

Development of the well site will not require extensive grading. During removal of the former military warehouses, the project site was cleared and regraded to a relatively level terrain.



Geology

The project site is located on the southwestern or leeward flank of the Koolau volcanic shield. In the lowlands, the Pearl Harbor Coastal Plain was primarily developed from alluvium deposited on the highly permeable Koolau basalt formations, and on the coral reefs that formed when sea level was higher than the present level.¹

Soil

The U.S. Soil Conservation Service classifies the soil on the property as Lahaina silty clay (LaB), 3 to 7 percent slope. This soil type generally occurs on upland areas with a slight slope.

In a representative profile of the soil, the surface layer is dark reddish-brown, silty clay about 15 inches thick. The subsoil is dusky-red and dark reddish-brown subangular blocky silty clay and silty clay loam about 45 inches thick. The substratum is comprised of soft, weathered basic igneous rock.

The soils are medium acid in the surface layer and slightly acid to medium acid in the subsoil layer. Its permeability is moderate, runoff is slow and erosion hazard is slight. The available water capacity is about 1.3 inches per foot in the surface layer and about 1.4 inches per foot in the subsoil.

Climate

The mean annual rainfall for the area is less than 30 inches. Average monthly temperatures are mild ranging from about 72 degrees F in the winter to about 78 degrees F in the summer. Winds are predominantly from the northeast.

Hydrology

Surface Water

There are no surface water features on the project site. The nearest stream is Waiawa Stream which is located approximately three-quarters of a mile northwest of the BWS Manana facility (see Figure 7). The stream discharges into Pearl Harbor's Middle Loch adjacent to the Pearl City Peninsula.

Runoff from upper Waiau flows through Pearl City east of the project site in a lined and unlined drainageway. The closest it flows past the well site is

¹ Manana Exploratory Wells Final Environmental Assessment, prepared by R.M. Towill Corporation, February 1998.

approximately 2,000 feet, and it ultimately discharges into East Loch of Pearl Harbor. Further east of the project site are streams of the Punanani and Waimalu Gulches. These streams have larger flows and discharge into a lined channel that connects with East Loch.

The nearest springs are Waiawa Springs which are located on the north shore of Middle Loch (approximately 1-1/2 miles from the project site) and Waiiau Springs which are located on the north shore of East Loch (also approximately 1-1/2 miles from the project site). These springs are among several Pearl Harbor springs that are fed by overflow from the basal aquifer in the underlying basaltic rock layer. Their discharges are directly related to the basal head height and may vary with changes in the static level of adjacent wells.

Groundwater

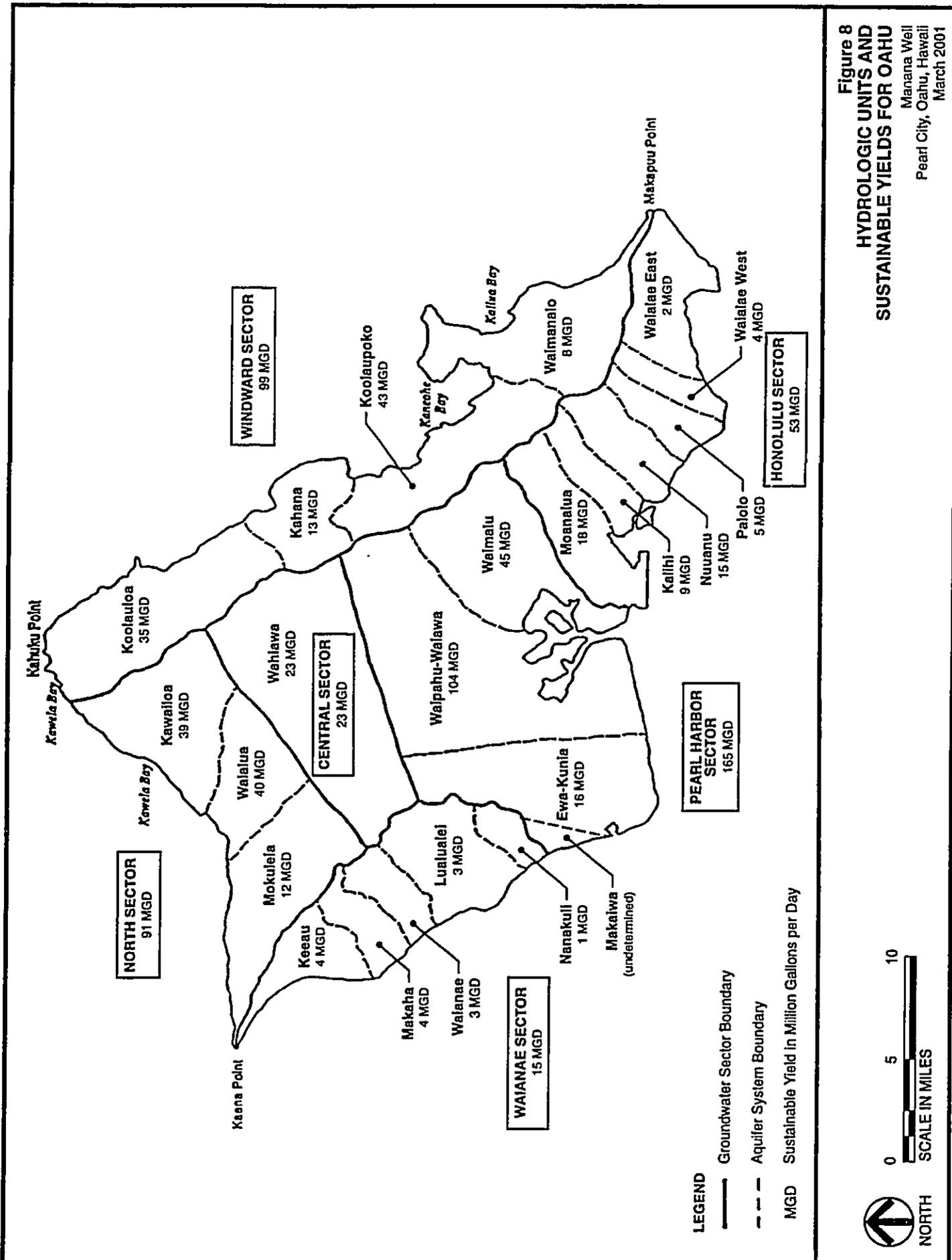
The basal aquifer is a lens-shaped body of fresh water floating upon salt water. Based on the density difference between fresh water to salt water, for every 1' that the fresh water lens extends above sea level, the lens extends 40' below sea level to the midpoint where salinity is half sea water.² Along the coast, the basal lens is hydrologically confined by coastal plain deposits. These deposits, which form a caprock that is relatively impermeable, retard outflow of freshwater to the sea. Thus, a buildup of groundwater level occurs inland of the caprock. According to field records, the static head of the basal lens at the project site is approximately 13.7' msl.³

The island of Oahu is divided into six groundwater sectors each comprising a number of identified aquifers. The project site is located in the Pearl Harbor Groundwater Sector and in the Waipahu-Waiawa Aquifer (see Figure 8). The aquifer, which is recharged by rainfall in the Koolau Mountains, encompasses the eastern portion of the Ewa plains, Waipahu, Mililani, Waiawa, Pacific Palisades and western Pearl City. Its major streams are Waikakalaua, Kipapa, Waikele, Panakauahi, Waiawa, Manana and Waimano Streams.

In addition to recharge from streams, the Waipahu-Waiawa Aquifer also receives recharge from agricultural irrigation infiltration. Notably, with the closure of sugar operations by Oahu Sugar Company, agricultural recharge has been dramatically reduced, even if a substantial amount was not initially involved. Much of the water used for agriculture is held

² *ibid.*

³ Engineering Report for Well 2458-05.



immediately below the surface of the ground or lost to evaporation and transpiration.

The Commission on Water Resource Management (CWRM) for the State of Hawaii has recently reevaluated the sustainable yields of the aquifers in the Pearl Harbor Sector to adjust for water use and recharge changes resulting from the closure of the Oahu Sugar Company (see Table 1).⁴ Prior to the closure of the sugar company, the Waipahu-Waiawa Aquifer had an estimated sustainable yield of 119 mgd and a total allocation or permitted use of 110.4 mgd. With the closure of the sugar operation and its irrigation practices, substantial sources of groundwater recharge have been shut off. The revised sustainable yield for the Waipahu-Waiawa Aquifer is now 104 mgd. With the closure of the sugar company and changes in other land uses, the permitted uses have also been revised down and is now 82.5 mgd.

Table 1. Sustainable Yield in the Pearl Harbor Sector

<u>Aquifer System</u>	<u>Sustainable Yield (mgd)</u>
Waimalu	45
Waipahu-Waiawa	104
Ewa-Kunia	16
Makaiwa	undetermined

Source: Commission on Water Resource Management (CWRM), April, 2000.

The major users in the Waipahu-Waiawa Aquifer are listed in Table 2. The BWS, Campbell Estates and U.S. Navy are, by far, the largest users totaling approximately 48.9 mgd. Current usage of all users is approximately 51.4 mgd. This leaves approximately 30 mgd, which have been allocated for use in the region, but are not being used. The current usage, thus, is about 62 percent of the allocation to wells in the aquifer and approximately 50 percent of the aquifer's current sustainable yield.

There are four well/shaft sites within approximately one-half mile of the Manana well site (see Figure 9). Some of these sites include a multiple of wells and one site includes a shaft. The wells, which were all drilled more than 20 years ago, are identified as Pearl City Well (No. 2358-49), Pearl City Well (No. 2458-02), Pearl City Wells I (Nos. 2458-03 & 2458-04), Pearl City Wells II (Nos. 2457-01, -02 & -03) and Pearl City Shaft (No. 2458-01). They are owned by the BWS, except for Well No. 2358-49, which is owned by the Nazarene Church, and Well No. 2458-02, which belongs to the Oahu RR&L.

⁴ Manana Exploratory Wells Final Environmental Assessment, prepared by R.M. Towill Corporation, February 1998.

Table 2. Current CWRM Allocation (April, 2000) and Usage for Waipahu-Waiawa Aquifer System

<u>Permittee (Authorized Water Use)</u>	<u>Allocation (mgd)</u>	<u>Water Usage (mgd)</u>
BWS	41.601	29.229
Campbell Estates	20.123	2.696
U.S. Navy	14.977	17.122
State DHHL	1.608	0
Waialeale Golf Club	0.950	0.663
Others	<u>3.243</u>	<u>1.718*</u>
Total	82.502	51.428

Note: Asterisk indicates that this amount includes users with a total allocation of 1.124 mgd who did not register their usage in the current recording period.
Source: CWRM

As Table 3 indicates, the wells in the vicinity have a static head at about the same level ranging from 16.3 to 19.7 feet (msl). Well No. 2358-49 is located far below the other wells and, hence, has a static head at 14.3 feet (msl).

Table 3. Existing Wells in the Vicinity - Physical Characteristics

<u>Well No.</u>	<u>Well Name</u>	<u>Owner/User</u>	<u>Year Drilled</u>	<u>Grd. Elev.</u>	<u>Depth (total ft)</u>	<u>Static Head (in el.)</u>
2358-49*	Pearl City	Nazarene Ch	1976	21	125	14.3
2458-01	Pearl City Shaft	BWS	1940	111	151	18.9
2458-02*	Pearl City	Oahu RR&L	1952	117	155	17.2
2458-03	Pearl City I #1	BWS	1953	120	150	18.7
2458-04*	Pearl City I #2	BWS	1953	120	140	17.5
2457-01	Pearl City II #1	BWS	1957	267	398	19.7
2457-02*	Pearl City II #2	BWS	1957	267	415	18.6
2457-03*	Pearl City II #3	BWS	1968	272	423	16.3

Note: Asterisk indicate wells that are currently not in use, are abandoned or are on standby.
Source: CWRM

As noted above, only three wells are currently in operation in the area and all are operating under capacity and within their allocation. As Table 4 illustrates, all of the wells are operating at no more than 89 percent of their allocation. This is typical of what is occurring in the overall Waipahu-Waiawa Aquifer. Withdrawal from this area for the new Manana wells is not expected to jeopardize the draw potential for the other wells. Withdrawal from the Manana source will be substantially within the sustainable yield of the Waipahu-Waiawa Aquifer.

Further, either well of the Manana facility is not expected to affect the cone of depression of nearby existing wells. In the test pump for the project's existing well, it was found that there was less than one foot of drawdown during continuous pumping. This is considered a small drop and the radius of influence would likely be about 50 feet from the hole. The nearest off-site well (Well No. 2458-03) is approximately 1,000 feet away.

Table 4. Operational Characteristics of Existing Wells Currently in Use

<u>Well No.</u>	<u>Well Name</u>	<u>Specific Capacity (in gpm/ft)</u>	<u>Installed Capacity (in mgd)</u>	<u>Water Alloc. (in mgd)</u>	<u>Water Usage (in mgd)</u>
2458-01	Pearl City Shaft	870	2.304	1.320	0.726
2458-03	Pearl City I #1	1,227	1.008	0.700	0.620
2457-01	Pearl City II #1	112	1.728	1.800	1.359

Notes: "Specific capacity" is a measure of well yield per unit of drawdown and is expressed as gallons per minute per foot of drawdown. The "installed capacity" is another measure showing the quantity of water that a well's pump is capable of delivering in one day. "Water allocation" indicates the quantity of water that is permitted by the CWRM to be drawn from the well. "Water usage" is the current quantity of water that is being used by the well user.

Source: CWRM

A review of potential sources of contamination was conducted on the project. According to Department of Health staff, there are two industrial solid waste sites in the vicinity. Both, however, are located more than one-half mile makai of the proposed BWS facility. Moreover, there are no solid waste landfills in the Pearl City/Manana area.

The DOH also indicated that there are no injection or dry wells nor cesspools or septic tanks within the immediate vicinity (one-half mile of the project site).

The project site has been out of agricultural use for more than 50 years. Fertilizers and pesticides, thus, have not been used in the area for a long time. The more recent and former occupant had military warehouses on the property, but did not have any motor pool or vehicle repair facilities.

In 1996, when the Naval warehouses were still standing, Ogden Environmental and Energy Services Co., Inc. issued a report for the Pacific Division, U.S. Naval Facilities Engineering Command, indicating that the warehouses did not have any hazardous substance. Buildings 18 and 26 (located more than 1,000 feet makai of the well site), however, were exceptions and were used for storage of hazardous waste. Notably, they were operating under Resource Conservation and Recovery Act (RCRA) Part A Permits.

After submitting final analytical data on the interiors of the two buildings, the Defense Reutilization and Marketing Office (DRMO) chief received U.S. Environmental Protection Agency (EPA) approval of "clean" closure in 1994. Hence, both buildings thereafter underwent formal closure in accordance with RCRA requirements. Cleanup of lead and arsenic soil contamination near these buildings was completed in 1996. The cleanup goal of no more than 22 parts per million of arsenic in site soils was achieved, and the Navy concluded that no further cleanup action was necessary.

In accordance with its Memorandum of Understanding, the U.S. Navy followed through to "deliver the property to the City free of all surface and subsurface hazardous materials" and continues to maintain its obligation to be "responsible for the remediation and costs thereof for any and all hazardous wastes, which were directly or indirectly related to the Navy's prior use or ownership" of the property. In early 2000, the warehouse buildings around the proposed well site were removed.

Approximately 1,400 feet makai of the well site and within the MPCJD area, BWS operates a corporation yard which is planned for expansion. In the expansion project EA, the mitigation program calls for buildings having hazardous substances to be designed with containment systems. These systems will consist of concrete floor with curb surrounding the storage area and above-ground special double lined tanks for used oil/antifreeze.

In a search in DOH's Underground Storage Tank (UST) Leak Log by R.M. Towill Corporation, no events were found near the well site that would have negatively impacted underground water quality⁵.

A number of other hazardous waste, toxic release and air release sites are located in the industrial area in Waiawa Gulch along Waihona Street. They are situated in a lateral direction from the downward slope of the well site and are more than one-half mile in distance from the project facility. They include transporters, operators of generators, operators of industrial material and storage yards.⁶

The Department of Health regularly tests wells for various contaminants, including volatile organic chemicals, inorganic metal chemicals, Ethylene Dibromide (EDB)/1,2-Dibromo-3-Chloropropane (DBCP) contaminants, carbamate pesticide chemicals, synthetic organic chemicals and glyphosate contaminants. Testing occurs every three years, sometime annually, and sometimes quarterly if contaminants are found. Although some of the

⁵ R.M. Towill Corporation communications with Board of Water Supply, October 1997.

⁶ U.S. Environmental Protection Agency webpage "Envirofacts" (July 2000).

wells in the vicinity are not currently in operation, they were tested (see Table 5) during the past testing period. Notably, none of the wells (Well 2458-02 was not tested) were tested positive; they were all within the State safe drinking water standards.

Table 5. Existing Wells in the Vicinity - Water Quality Characteristics

<u>Well No.</u>	<u>Well Name</u>	<u>Chloride Content (Parts per Million)</u>	<u>DOH Water Quality Monitoring Tests</u>
2358-49*	Pearl City	N.A.	N.A.
2458-01	Pearl City Shaft	60	Negative
2458-02*	Pearl City	N.A.	N.A.
2458-03	Pearl City I #1	38	Negative
2458-04*	Pearl City I #2	38	Negative
2457-01	Pearl City II #1	48	Negative
2457-02*	Pearl City II #2	30	Negative
2457-03*	Pearl City II #3	N.A.	Negative

Notes: Asterisk indicate wells that are currently not in use, are abandoned or are on standby. N.A. means not available.

Source: Board of Water Supply and Department of Health

Flora and Fauna

The proposed project is not expected to have any significant adverse effect on flora and fauna in the project vicinity. The project site has been recently cleared in preparation for the MPCJD redevelopment project. Bare ground now exists on the property, and no vegetation is present except perhaps remnant patches of Bermuda grass.

Fauna is also absent from the site given the absence of vegetation. Certain bird species may take flight over the area or past through. These would be predominantly lowland urban birds and mammals typical of vacant or undeveloped lands near residential communities.

A faunal survey conducted by Phil Bruner in 1995, before any warehouses were removed, found numerous exotic birds, including spotted dove, zebra dove, common waxbill, Java sparrow and house finch. No endemic birds were identified. The only native bird that frequented the vicinity was the migratory Pacific golden plover. No rare, threatened or endangered species were recorded on the site.

The only feral animal species found were the cat and mongoose. None of these are rare, threatened or endangered.

Air Quality

Aside from any construction activity that would occur with the development of the planned Manana/Pearl City Junction Development project, the quality of the air in Manana is expected to be very good. There are no major sources of air pollution in the immediate vicinity, such as agricultural burning, dairy farms, manufacturing plants or incinerators. Auto emissions from vehicular traffic on Waimano Home Road, Moanalua Road, Noelani Street and Kaweloka Street are not a major factor affecting air quality in the area.

Industrial uses in Waiawa Gulch are located more than one-half mile to the west of the well site. With the predominant wind direction from the northeast, the proposed project will not be downwind of the industrial uses.

The propose well facility will not be a major source of air pollution to adjacent properties. No gasoline-operated or other fuel burning engines will occupy the site. The pumps for the wells will be run by electric-operated motors submerged in the well.

Sonic Ambiance

The predominant source of noise in the vicinity is the vehicular traffic on Waimano Home Road and periodic construction activities associated with the planned development of the MPCJD project. There are no other major noise generators, such as industrial manufacturing plants, commercial entertainment centers or public ballfields, in the area.

Noise that might be emitted from the site would generally come from above-ground motors that run pumps for their wells. However, the Manana site pump and motor will be positioned at depth within the well shaft and noise from the gear will not be detectable at the ground surface and adjacent properties.

During construction, short-term, temporary noise will be generated from the project site. Equipment, supplies and construction material will be transported to the property by hauling trucks. The existing well will then be outfitted with a permanent pump and motor, a new underground line will be installed connecting the well to BWS's existing 42-inch transmission line, the control building will be erected, and other accessory facilities will be constructed.

During installation of the second well, there will be noise from construction of the drilling rig, drilling operations, casing of the well, test pumping, installation of the permanent pump and motor, connecting the

well to the existing 42-inch transmission line, construction of accessory facilities, dismantling of the rig, landscaping of the site and removal of the construction equipment from the property.

Archaeological, Historical and Cultural Resources

An archaeological assessment of the MPCJD property was conducted in 1995 by Scientific Consultant Services, Inc. (SCSI). The study reported that the Manana site was extensively used in the past. It noted that in the Post-Contact period, rice crops, sugar cane and finally military activities occurred on the property.

For BWS's corporation yard, which is located approximately 1,400 feet makai of the proposed well site and within the MPCJD property, the State Historic Preservation Division (SHPD) indicated to BWS that there are no known historic features in the area and it is unlikely that archaeological sites are present below the surface. SHPD concluded that it believes the project area will have "no effect" on historic sites. Although this assessment was made for the makai BWS site, it is indicative of the MPCJD property which has been extensively used.

There is also no evidence of natural resources on the property or immediate vicinity that would be the object of traditional native Hawaiian gathering. As noted previously, the project vicinity has had a history of various extensive uses including the U.S. Navy's former military warehouses and Honolulu Plantation's early sugar cane operations. Urban-type uses now surround the current project site. Development of the site would not block access to any traditional or native Hawaiian resources.

Natural Hazards

The BWS site is located more than one mile from Pearl Harbor and more than five miles from the coastline. Tsunami inundation will not be a threat to the project site.

The nearest stream or drainage channel is located approximately 2,000 feet from the property. The Flood Insurance Rate Map (FIRM), Community Panel No. 150001 0065 B, prepared by the Federal Emergency Management Agency, confirms that there are no floodways that will affect the project area.

Earthquakes and hurricanes are potential natural hazards that could occur and create significant damage to the site. The Civil Defense Agency and its early warning system forewarn and prepare residents for pending hazardous storms and natural disasters, particularly hurricanes. Brush

fires do not appear to be a possibility for the property, since the site is not located within or near any forest or scrub lands.

Views

The lands to the west, east and south (makai) of the project site have been cleared of former abandoned U.S. Naval warehouses. Views of the makai region include Pearl Harbor, Ewa plain and lower Central Oahu. A large area several hundred feet immediately makai of the project site is currently under construction for a bus baseyard by the City's Department of Transportation Services. This new facility is reflected in the current MPCJD Master Plan. Upslope of the BWS site is a residential subdivision occupied by single-family homes. In all, the views from the project site toward the surrounding areas are not an important element of the well facility and thus have not been incorporated into the project design.

In terms of impacts on adjacent lands, the low-profile character of the BWS facility will not be visually detrimental to surrounding properties. It would not obstruct view planes nor be obtrusive in appearance to generate complaints on compatibility with the surrounding scenic environment. Landscape treatment will be provided to screen and soften the visual appearance of the facility, as well as enhance the area's existing landscape.

IV. SOCIO-ECONOMIC SETTING

Socio-Economic Background of Region

The project site is located in the suburban community of Manana-Pearl City which is served by a wide complement of commercial, public and community facilities, including a shopping center, police substation, fire station, public schools and library. Kamehameha Highway, Moanalua Road and Waimano Home Road are the major rights-of-way through the area.

Pearl Harbor Naval Base, which is located near Pearl City, has had a significant influence on the community. Naval reservations, including the former Manana Naval Reservation and several housing projects, have located in and around Pearl City.

As previously described, the 122-acre Manana Naval Reservation was recently turned over to the City. The City is now planning to develop the property for mixed uses, including commercial retail, office, community facilities, light industrial and public facilities. The plan was based on recommendations by a task force comprised of community leaders and

agency officials. The City is now in the process of completing the initial subdivision of the property, constructing the spine road and three side roads and negotiating additional lot sales within the subdivision. The proposed BWS facility, which is a utility project designed to service the community, will be one of the first occupants of the new MPCJD development.

Social Impact

The BWS site was occupied by storage warehouses which were vacant and recently removed. The proposed action, thus, will not result in the displacement of existing businesses or residences.

The proposed project is not intended to open up new areas for development, but to meet the increasing demand for water due to incremental growth in the urban core. This growth in the urban core is based on PUC Development Plan and East Honolulu Sustainable Communities Plan policies. As described in Section VI, below, the City Council approved the designation of a 2.0 mgd well at the Manana site on the City's Development Plan - Public Facilities Map.

The anticipated growth in the PUC would essentially come from what is already allowed under the area's existing zoning. This would include urban lands that are vacant and ready for development and lands that are redeveloped to a higher density. Very little virgin lands would be involved in any new development. Since the water distribution system in Honolulu is interconnected, it would be difficult to determine which areas of the City would specifically benefit from the additional source.

The new well will not directly create new employment, increase demand for more housing and generate population increase in the Manana/Pearl City area. As such, the BWS facility would not be a source of overburdening such public facilities as schools, libraries, medical centers, parks and playgrounds.

Economic Impact

Permanent on-site operators will not be required for the new facility. It will require only routine monitoring by existing off-site BWS crew members. Consequently, no new jobs will be created.

In the short-term, when the well facility is constructed, there will be mobilization of workers in the construction industry. New jobs may not be created, but new work would be generated for existing contractors. Monies expended in the construction industry would flow to associated businesses and, eventually, result in a multiplier effect.

The impact on the local economy would be beneficial, but small, considering the size of the construction work. There would be an increase (although only for a short time) in personal income, consumer spending and government revenues from income and sales taxes. These effects would extend throughout the community through induced and secondary impacts.

In the long-term, the new source of water will improve service to the community as well as meet the demand of future residents and customers.

V. PUBLIC FACILITIES AND SERVICES

Existing Circulation and Traffic

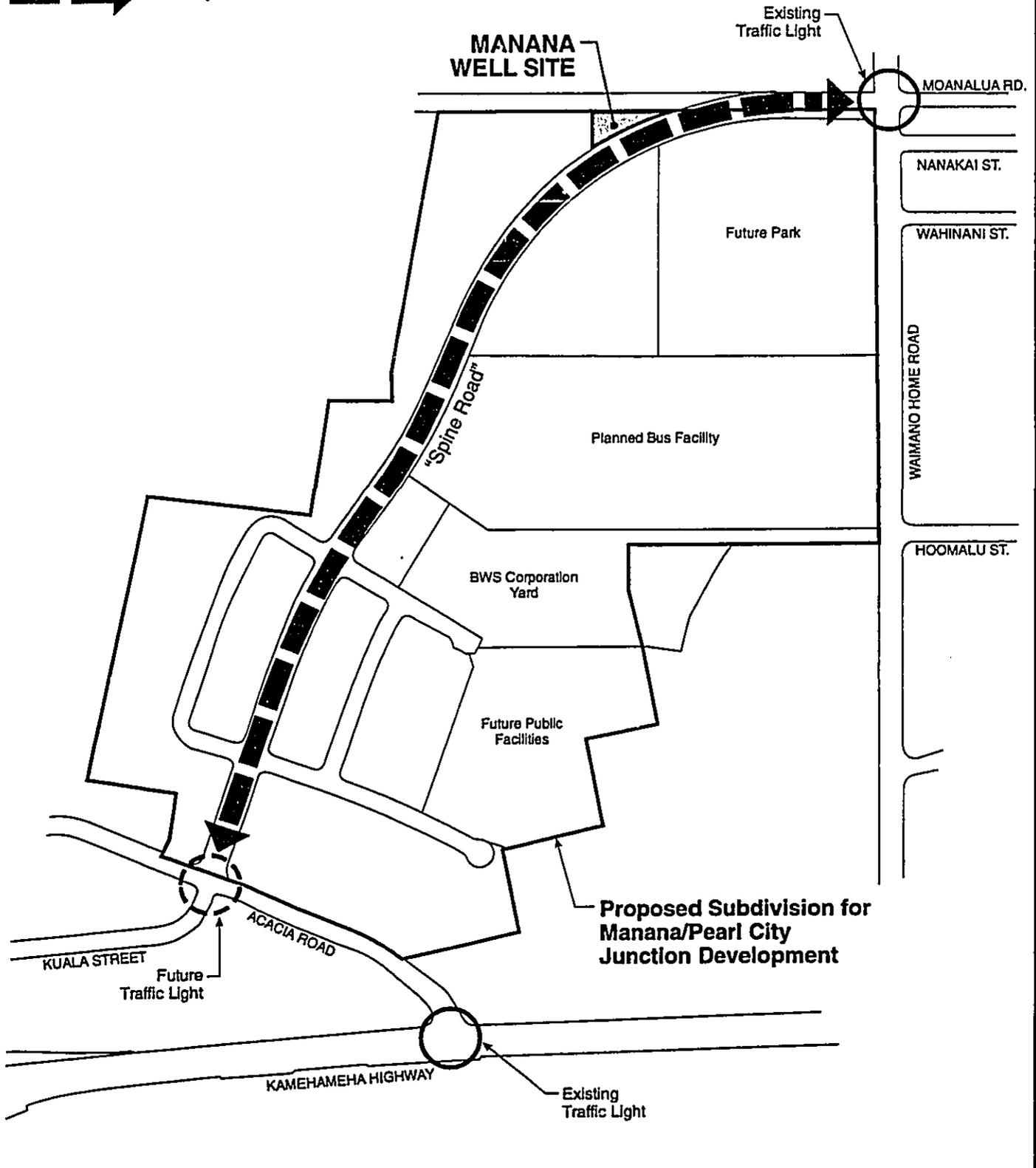
Access to the well site will be from the spine road which is currently under construction as part of the MPCJD project (see Figure 10). The road is preliminarily scheduled to be completed in the summer of 2001. Meanwhile, temporary access may be provided from a road reserve located on the mauka boundary of the well property. The road is unimproved and owned by the Lone Star Hawaii Construction Inc. and Lear Siegler Inc. Authorization for temporary use of the right-of-way will be sought by the BWS, if required. There are no long-term plans for use or improvement of the road reserve by the BWS.

The new spine road, which will serve as the main thoroughfare for the MPCJD, will have four lanes, bicycle lanes, curbs, gutters and sidewalks within a 92' wide right-of-way. It will have no on-street parking.

The spine road will be an extension of Moanalua Road and will connect with Kuala Road at the makai end of the MPCJD property. Side roads and dead end streets with 60-foot wide rights-of-way will comprise the remainder of the internal roadway system.

Waimano Home Road is a four-lane arterial (with street parking) within an 80-foot wide right-of-way. It provides mauka-makai access through Pearl City and connects Waimano Home and Pearl City High School with Kamehameha Highway. There are a number of intersections along the right-of-way, including six crossroads with traffic lights. A center lane occupies the middle of the right-of-way between Nanakai Street and Hoolaulea Street and serves as a two-way, left-turn lane. At all the intersections within this roadway segment, the median lane converts to a one-way dedicated left-turn lane.

LEGEND



Prepared for: Board of Water Supply
City & County of Honolulu



NORTH

0 250 500

SCALE IN FEET

**Figure 10
CIRCULATION**

Manana Well
Pearl City, Oahu, Hawaii
March 2001

Along the lower or makai segment of Waimano Home Road, Ewa-side street parking is prohibited. On the Diamond Head side, unmetered parking is allowed.

Future Traffic

A Traffic Impact Assessment Report (TIAR) for the spine road EA, prepared in 1998 by Pacific Planning & Engineering, Inc., evaluated the potential traffic impacts that would be generated by the planned MPCJD and spine road on the adjacent roads. These rights-of-way include a number of intersections such as:

- Waimano Home Road/Moanalua Road/Spine Road
- Waimano Home Road/Hoolaulea Street
- Waimano Home Road/Kamehameha Highway
- Waimano Home Road/Noelani Street
- Kamehameha Highway/Acacia Road
- Kamehameha Highway/Spine Road
- Spine Road/Acacia Road/Kuala Street
- Spine Road/Acacia Road
- Spine Road/Connector Road

According to the TIAR, the new internal roadway system for the MPCJD would equal or improve traffic (in reference to if no spine road was constructed) in the Manana area of Pearl City by the year 2020. One exception would be the Waimano Home Road/Moanalua Road/spine road intersection during morning and afternoon peak hours. The traffic at this intersection would be worst in 2020 with the spine road than if no spine road were constructed. The proposed design of this intersection was influenced notably by community input. Alternative designs were considered, that would have provided better traffic conditions, but required significant modifications to traffic routes and driving patterns and were not favored by a number of community members.

To reduce the congestion at this intersection, additional mitigation measures may be implemented. These measures could include contraflow of the northbound left-turn lane on Waimano Home Road at Noelani Street (providing two left-turn lanes in the southbound direction onto Moanalua Road) and traffic signal timing modifications.

The anticipated impact from the potential connector street between spine road and Kuahaka Street is expected to be minor. The connector street is not a regional right-of-way providing access to the larger community. Traffic that is expected to occur on the connector street would be local trips made primarily by residents entering and leaving their Manana

Subdivision and Holiday City Subdivision neighborhoods. This convenient route would allow a more direct access between the residents' homes and Moanalua Road or Acacia Road. Further discussion of the anticipated impacts are addressed in the Final EA (February 1999) which was prepared by the City for the Manana and Pearl City Junction Development Spine Road and Connector Road project.

The Manana well site will not require alteration to the spine road alignment. During its operational stage, the BWS-generated traffic is expected to be very small on the spine road with a total volume of approximately 8 to 10 round trips per month. These trips would occur primarily during off-peak hours for the purpose of production and systems operation monitoring and building/landscaping maintenance. The proposed project is not expected to significantly impact traffic on the spine road and nearby Waimano Home Road, Moanalua Road, Kuala Road and Acacia Road.

Water, Sewer, Electricity and Telephone

Utility lines within the new spine road will include water, sewer, electricity and telephone to serve the planned MPCJD (see Figures 11 & 12). The proposed well facility will hook up to the adjacent water and power lines.

Although water drawn from the wells will be pumped into a 42-inch transmission main in the adjacent road reserve, water for general on-site use will come from a 12-inch line in the spine road. The water will be used for landscape irrigation and maintenance work, such as equipment cleaning and pavement washdown. The quantity of water is expected to be small and not significantly affect the area's available supply.

Since the well facility will have no wash room or toilet, a sewer connection will not be made. Communications by telephone would be accommodated by cellular telephone, so no permanent telephone connection is required.

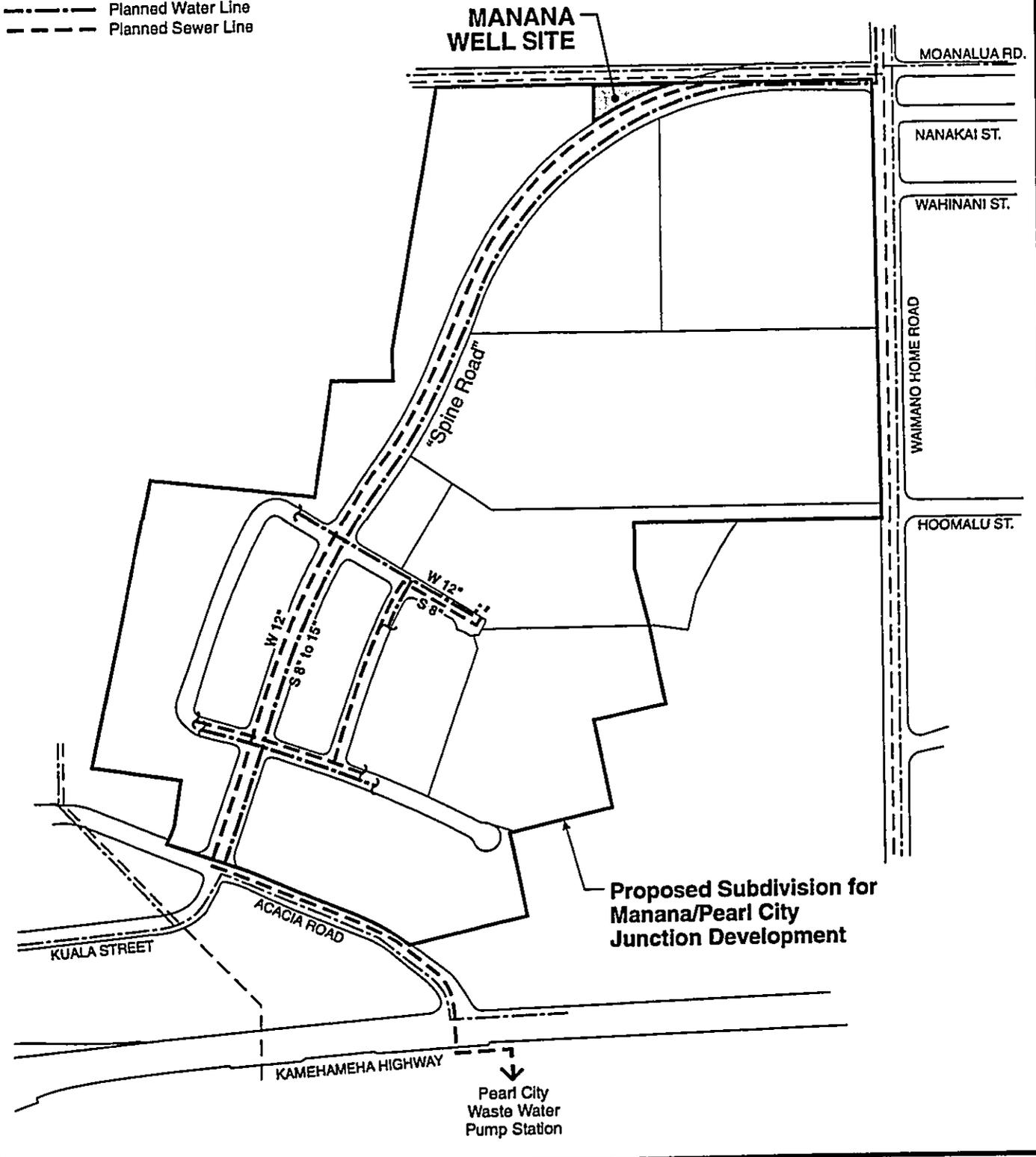
Electricity from Hawaiian Electric Co. Inc. will be needed for the well pumps and control panels that control and monitor the pumps. The demand for electricity will be minor and will not significantly deplete the available supply of power for the area.

Solid Waste

Minor quantities of green waste from landscape maintenance would constitute the primary solid waste generated on the property. It would be bagged and hauled away by BWS landscape/maintenance personnel or by a hired contractor responsible for the groundskeeping. The trash will be disposed of at the nearest commercial disposal site.

LEGEND

- Existing Water Line
- - - Existing Sewer Line
- · - · - Planned Water Line
- - - - Planned Sewer Line



Prepared for: Board of Water Supply
City & County of Honolulu



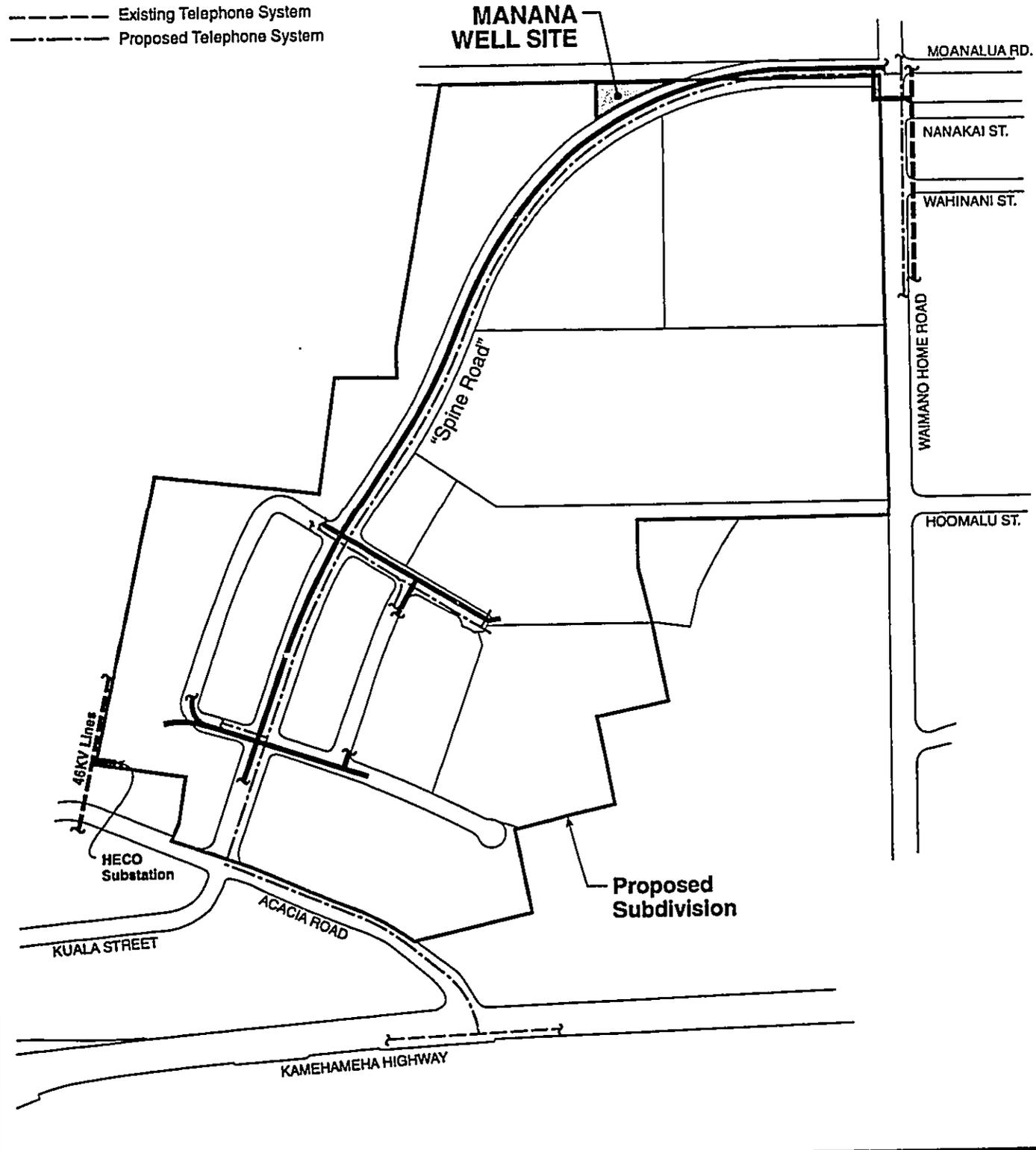
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SCALE IN FEET

Figure 11
WATER & SEWER SYSTEMS

Manana Well
Pearl City, Oahu, Hawaii
March 2001

LEGEND

- Existing Electrical System
- Proposed Electrical
- Existing Telephone System
- Proposed Telephone System



Prepared for: Board of Water Supply
City & County of Honolulu



NORTH

0 250 500
 SCALE IN FEET

Figure 12
ELECTRICAL & TELEPHONE SYSTEMS

Manana Well
Pearl City, Oahu, Hawaii
March 2001

Public Services

The project site is located within existing police, fire protection and medical service areas. Operations at the well site will not generate a level of demand that would overburden these services.

VI. RELATIONSHIP TO PUBLIC LAND USE POLICIES

State Land Use District

The Manana BWS site is located in the Urban District and its proposed wells are a permitted use.

State Environmental Policies

The proposed action is consistent with the State Environmental Policy (Chapter 344, HRS) relating to "safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawaii."

Further, the new well facility will supplement the existing water system in the Primary Urban Center as well as open up opportunities for economic growth and provide improvements in the quality of life for the residents of Hawaii.

State Commission on Water Resource Management

As with any new well, a well construction permit, pump installation permit and water use permit must be obtained from the State Commission on Water Resource Management (CWRM) before the well can be placed into production. The existing well has already obtained the construction permit and will require the other two permits. The second well will require all three permits.

City General Plan

The proposed project is consistent with Transportation and Utilities Objective B of the General Plan which states "to meet the needs of the people of Oahu for an adequate supply of water . . ." and with its associated Policy 1 which states "develop and maintain an adequate supply of water for both residents and visitors."

The proposed project is also consistent with Objective A of the Physical Development and Urban Design element of the General Plan which states "to coordinate changes in the physical environment of Oahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located." As described in this EA, the site for the new well facility was selected from alternative sites. It is appropriate for the area, will be designed to minimize impact and will be developed in a timely manner.

Primary Urban Center Development Plan

The proposed project is consistent with the Urban Design Principles and Controls of the Development Plan (DP) Special Provisions for the Primary Urban Center (PUC). Structures on the well site will be within the height controls or limitations specified by the DP. Views of important scenic resources will not be obstructed and existing open spaces in the project vicinity will not be adversely affected by the well facility. Further, the proposed project will be within the DP's density controls.

The current draft of the proposed PUC-DP update designates the well site as "Institutional". The DP considers educational and medical centers as institutional facilities. It does not have a specific land use designation for utility facilities. Such facilities are treated as accessory uses to the primary uses established on the DP maps.

One of the policies of the Water Allocation and System Development section of the (draft) PUC-DP states:

Integrate management of all potable and nonpotable water sources, including groundwater, stream water, storm water and effluent, following City and state legislative mandates.

According to the DP, under the State Water Code, each county must prepare a long-range "water use and development plan" and submit it to the CWRM for approval and inclusion as an element of the Hawaii Water Plan. The Oahu Water Management Plan, prepared by the Department of Planning and Permitting with the assistance of the BWS, was adopted by the CWRM and City Council in 1990.

Another policy of the Water Allocation and System Development section of the DP states:

Adapt and implement water conservation practices in the design of new developments and modification of existing uses, including landscaped areas.

DP guidelines for implementing feasible and appropriate conservation measures include:

- Use of low flush toilets, flow restrictors and other water conserving devices in commercial and residential developments,
- Promoting the use of indigenous, drought tolerant plant material and drip irrigation systems, and
- Re-use of secondary-treated wastewater effluent for the irrigation of golf courses and other landscaped areas.

Although, these measures do not apply to a new well facility, they would be appropriate when new development or modifications of existing projects come under the review of the City and BWS.

Development Plan Public Facilities Map

A well with a capacity of 2.0 mgd was approved by the Honolulu City Council on August 5, 1999 as Ordinance 99-48 and is shown on the DP Public Facilities Map as a "Site Determined" facility for the Manana site.

BWS currently has an existing capped well on the property. It will seek a pump installation permit and water use permit from the CWRM for placement of the well into production. The well will have a pump capable of delivering 2.0 mgd, but will likely operate at 1.5 mgd.

The second well will serve as a backup well and will operate only in the event of an emergency (when the first well experiences a breakdown and must be shut down for repair) or for maintenance purposes (when the first well must undergo routine maintenance).

The second well will have the same capacity as the first well. Since only one well is expected to operate at any time, water use from the facility is expected to be within the City's DP limit for the site. An amendment to the Public Facilities Map, thus, would not be necessary for the second well.⁷ Follow-up consultation with the Department of Planning and Permitting is recommended to reconfirm that a Public Facilities Map amendment would not be required.

City and County Land Use Ordinance

Although the Land Use Ordinance maps show F-1 Military and Federal Preservation for the property, P-2 General Preservation regulations and standards apply. When the MPCJD property was turned over to the City,

⁷ Telecom on July 25, 2000 with Department of Planning and Permitting staff regarding Ordinance 99-48 and Public Facilities Map for Manana area.

the F-1 zoning automatically converted to P-2 according to Land Use Ordinance No. 99-12, Section 21-3.40(d). The zoning designation will continue to be F-1 until the City formally changes the zoning identification. Under the P-2 zoning district, public structures and uses, including public utilities, are permitted.

Special Management Area

The project site is not located in the Special Management Area (SMA) and, thus, is not subject to the SMA Rules and Regulation of the City and County of Honolulu.

Required Permits and Approvals

Development of the BWS facility at Manana is permitted under the current zoning for the property. Upon completion of the environmental review process, as provided under Chapter 343, HRS, BWS will seek construction permits, including building and grading permits. These permits, which require the submittal of construction plans, will be processed by the Department of Planning and Permitting (DPP) of the City and County of Honolulu.

The proposed site will require subdivision and subsequent acquisition from the owner of the larger MPCJD property. The subdivision application will be filed by the BWS and processed by the DPP. No City Council approval is required.

At the State level, a pump installation permit and water use permit will be required to place the first well into production, and a well construction permit, pump installation permit and water use permit will be required to develop and place the second well into production.

Discharges associated with well drilling and hydrotesting activities will be contained on-site or pumped into a back trench and not released into the City's stormwater drainage system or State waters. The project limits will not exceed five acres in land area and operations of the facility will not involve any process wastewater discharge into State waters. Hence, no National Pollutant Discharge Elimination System (NPDES) permit will be required for the project.

Finally, BWS has permission to discharge waters from routine operations, repair and maintenance work into the City's stormwater drainage system under an existing Effluent Discharge Permit.

VII. SUMMARY OF MAJOR IMPACTS

Construction Impacts

Construction of the project, including site preparation, well installation and landscaping, will generate dust that could affect the neighboring residents. Since the site is small, there are mitigative measures that could be used to effectively control fugitive dust within the property. The nearest homes are located mauka of the well facility, approximately 80 feet away. Notably, these homes are upwind (prevailing winds are from the northeast) of the well site and thus would not be affected during the prevailing wind conditions. Dust screens could be erected, as a precaution, to accommodate dust when wind direction changes. Other measures would include wetting of the bare ground after grading occurs and planting of landscape material immediately after earthwork is completed.

Site preparation, drilling, test pumping, well outfitting, building construction and landscaping will also generate noise during the project's 14-month work schedule. These activities are expected to occur during the daylight hours. Thus, no noise is expected to occur during the evening and night hours. Test pumping, however, will require 5 to 7 days of 24-hour pumping. Measures will be taken to abate or shield the noise from the adjacent properties. An application for a Community Noise Permit for Construction Activities will be file with the State Department of Health (DOH) if it is anticipated that construction-generated noise will exceed State noise standards. Further, if noise from the project is expected to exceed standards and occur beyond the normal weekday hours, a variance from the DOH will be sought.

The drilling operation, which would take approximately 6 to 16 weeks depending on the contractor and his drilling methodology, will not generate vibrations in the ground that may be felt by the adjacent properties. The existing soil structure will quickly absorb any generated energy in the substrata.

During drilling, drilling fluid will be pumped down the drill stem to the drilling bit and then forced back up the hole carrying with it drill cuttings to the surface. The cut material will then be removed from the drilling mud by a screen and placed in a disposal pit within the property. Alternatively, the drilling mud will be placed in a holding tank where the heavy, solid material will be allowed to settle, then removed and finally placed in a disposal pit. The residual fluid may subsequently be reused as drilling fluid. In some cases, the residual fluid comes out of the well shaft as foam and a defoamer is used to reduce its volume.

During the pump tests, water from the well will be discharged into the City's stormwater drainage system located within the new spine road. The discharge will flow through an on-site 12" diameter drain line or a temporary drain line to the City's 24" drain line. The quantity could reach as much as approximately 1,390 gallons per minute, and its quality is expected to be of potable level.

Construction of the project would not impact traffic except when construction material and supplies are brought to and removed from the site for the outfitting operation of Well No. 1 and for the drilling and outfitting operation of Well No. 2. The transportation of these machinery and equipment will involve slow moving vehicles which may affect local routes.

Operational Impacts

No major impacts are expected to be generated during the permanent operations of the new wells. There will be no human occupation of the site, except during periodic well monitoring and site maintenance activities. Such activities would occur no more than once or twice a week.

The appearance of the facility will be mundane, but landscape beautification treatment may enhance the overall visual character of the property.

Drawing groundwater from the aquifer during the pump tests is not expected to impact the flow of Waiawa Stream. In the lateral direction of the well site, the stream bed elevation is about 40 feet (msl) and does not intersect the basal lens which has a static head of 13.7 feet (msl) in the project area. The difference in elevation indicates that there cannot be any seepage of groundwater into the stream.

The flow in the springs makai of the project sites may be affected by the well's pumpage. As groundwater flows perpendicular to the shoreline, the proposed well, which is upgradient from the springs, may affect the flow of groundwater to the shoreline. It is noted, however, that the total quantity of fresh water that flows to the springs dwarfs the quantity that would be drawn from the new well and thus would not significantly affect the springs.

It is expected that pumpage from the proposed well will have minimal or no noticeable effect on other wells in the vicinity. In the test pumpage report that was prepared for Manana's existing well, it was estimated that the drawdown was no more than one foot for sustained operations (see Appendix B). This measured depth is expected to have a radius of influence on groundwater level to about 50 feet of the hole. The nearest

well in the vicinity is more than 1,000 feet away. Hence, the impact from Manana's relatively small pumpage would be negligible, if any.

Existing operating wells in the vicinity include Pearl City Shaft (Well 2458-01), Pearl City I, No. 1 (Well 2458-03) and Pearl City II, No. 1 (Well 2457-01). These wells are approximately 1,000 to 2,700 feet away and all are producing potable quality water. As a precaution, during pump tests, existing wells in the area will be monitored.

VIII. PROPOSED MITIGATION MEASURES

During the site preparation, drilling and building construction stage, the contractor will work only during normal daylight hours. This would remove the impact of construction noise occurring during the evening and night hours and lights that might glare into the adjacent residential neighborhoods.

During the test pumping stage, however, operations will occur 24 hours per day over approximately 5 to 7 days. To mitigate noise impacts, the contractor may use a whisperized generator and sound curtain, which is erected around noise generating units. If required by the State DOH, the contractor will prepare a noise abatement plan describing its procedures and specifications and will notify the surrounding residents of the forthcoming construction work. The contractor will secure a Community Noise Permit for Construction Activities and a Variance, if required, from the State DOH to comply with State noise standards.

Fugitive dust is expected to be controlled to prevent it from impacting adjacent homes. Sprinkling of water over exposed dirt areas in the construction area will reduce or prevent dust from being airborne. Further, if winds are extremely strong, construction will be temporarily halted until the winds subside. Grassing or landscaping will occur, as soon as possible, after the sitework is completed.

Best management practices (BMP) will be employed to prevent a net increase in surface runoff from leaving the property and, where necessary, to mitigate potential discharge of pollutants into the City stormwater drainage system. Such practices would include the use of earth berms or other silt containment measures.

Water discharged to the City's stormwater drainage system for the well's test pumping operation will be of potable quality. No NPDES Permit will be required from the State Department of Health for such discharges which are not considered "process wastewater."

Similar measures would also be used to prevent the release of petroleum products or other potentially hazardous material from settling onto the project site or entering the adjacent properties. Regular inspection of vehicles and storage areas will be undertaken to confirm that there are no leaks that could potentially affect water quality. Absorbent pads or other containment devices will be available and used, as required, at fuel transfer points during fueling operations. The annulus around the well casing will be filled with cement grouting to form an impermeable seal. The grouting is designed to prevent potential contamination from leaking down the well casing to groundwater.

Since well monitoring and site maintenance activities will generate minimal trips to the site, mitigation measures to reduce traffic impact will not be necessary. During project construction, however, slow moving construction vehicles transporting heavy equipment and material to and from the site will be scheduled during off-peak periods between the hours of 8:30 a.m. and 2:30 p.m. Also, heavy truck activities on the local roads would not be scheduled for the weekends and State holidays.

IX. ALTERNATIVES CONSIDERED

No Action

An alternative to the proposed action is to refrain from proceeding with the development of the new well facility. Moving forward with the new facility, however, is necessary to meet the need for additional sources of water for the Primary Urban Center. The BWS has a legal obligation to provide potable water to the residents of the City and County of Honolulu. Implementing the "No Action" alternative would prevent BWS from fulfilling its obligation.

Alternative Sites

The selection of the Manana site for the new well facility is the result of a review of other sites in the Pearl City-Waiawa area. All sites were assessed for accessibility, availability of supporting infrastructure, access to existing water systems, site characteristics and, importantly, its potential as a source of water.

Two sites in the Waiawa uplands east of the H-2 Freeway were deemed unfeasible due to the lack of an access road, transmission pipe line and electrical power. Both sites were in a remote location with little existing support infrastructure.

A third site was investigated in the vicinity of the Waiawa Correctional Facility. It was also deemed unfeasible due to the lack of support

infrastructure. Furthermore, the use of the water would have been limited to educational purposes until the Year 2015, as specified in a quitclaim deed to the property.

The selected Manana site proved itself as the most feasible site alternative. It has an existing access and is located in the vicinity of BWS's existing water transmission system and service area. Finally, existing water quality data and water quantity information show that potable ground water at the site is good.

Alternative Construction Methodology

The drilling contractor will determine the method of drilling for the second well. Cable tooling is a drilling method that employs an impact procedure in the well hole. It utilizes a sharp bit on a cable that is repeatedly raised and dropped in the hole to cut a depth. The other method, rotary drilling, utilizes a drill bit that bores a hole to reach depth. The contractor will usually make a determination after inspecting soil and geology reports of the site.

Alternative Design

Alternative pump designs, including a surface pump and a submersible pump, were reviewed for the production well. The submersible pump was selected because it provided a quieter operation. A surface pump would have required a mute building to sound proof the pump apparatus from the adjacent properties. Construction of the mute building would have entailed extra cost.

X. DETERMINATION

This Final Environmental Assessment demonstrates that the proposed action will not have significant adverse effects on the environment and that an Environmental Impact Statement is not warranted. A Finding of No Significant Impact, therefore, is determined for this project.

XI. FINDINGS AND REASONS SUPPORTING THE DETERMINATION

The following findings and reasons demonstrate that the proposed action will not have significant adverse impacts on the environment and, consequently, support the above determination.

- The proposed action will occur on a site that has already been disturbed. Its open location would not interfere with any access to traditional gathering sites of important cultural resources.
- Although the proposed project would involve the long-term use of ground water, it would be to the benefit of the community. Furthermore, drawing water from the region's groundwater will not deplete the sustainable yield of the aquifer.
- The proposed action will not curtail the range of beneficial uses of the environment. It is considered a utility that services residential, commercial, industrial, parks and other uses. The project site is currently vacant and available.
- As provided in Section VI of this document, the proposed action is consistent with the State's long-range environmental policies and guidelines (Chapter 344, HRS).
- The proposed action is expected to have a beneficial effect on the economy. Its construction stage will generate work and personal income as well as stir spending throughout the county and state. Its operational stage would also benefit the local economy and supplement existing public utilities to serve a growing community.
- The equipment and rigs used for site preparation, building construction, well drilling, test pumping and well outfitting will be using petroleum products that could leak from their engines or hydraulic systems. The construction contractor will be required to maintain his or her equipment in good working order, monitor for leaks, and employ safety precautions. If there is a petroleum spill, the contractor will be responsible for all necessary remedial actions and cleanups. The public health would not be jeopardized.
- The proposed action will not involve substantial secondary impacts involving dramatic population increases. The new source of water will supplement the existing water system which currently serves communities in the Primary Urban Center.
- The proposed action calls for minor site improvements in a small area and will not change the general character of the surrounding land.
- No other plans for additional wells are being contemplated in the immediate vicinity by the proposing agency.

- There are no known rare, threatened, or endangered flora or fauna species on the site. The property has been cleared as part of the MPCJD redevelopment project and very little, if any, groundcover remains.
- The anticipated impacts associated with the project construction and operations, such as erosion, sedimentation, fugitive dust and noise, are short-term and temporary. They will be minimized or prevented from occurring by implementation of mitigative measures in accordance with applicable Federal, State and City laws, statutes, ordinances, and rules and regulations.
- The project site is not located in a hazard-prone area such as a floodway or dry vegetation area susceptible to brush fire.
- The project site is not included in any public document as a scenic resource.
- The proposed action involves a small facility that will not require substantial energy consumption.

XII. COMMENTS FROM AND RESPONSES TO AGENCIES AND PRIVATE ORGANIZATIONS

A copy of the Draft Environmental Assessment for this project was transmitted to the following agencies and private organizations for review and comment. The parties that responded are indicated below and a copy of their correspondence with a response from the proposing agency is attached to this section. Comments that were substantive and applicable were incorporated into the Final Environmental Assessment.

<u>Agencies</u>	<u>Agencies Responded</u>	<u>Agencies Responding w/No Comment</u>	<u>Agency Letters and Responses Attached in this Section</u>
<u>Federal</u>			
U.S. Department of the Navy	x	x	
U.S. Natural Resources Conservation Service	x	x	
U.S. Geological Service	x	x	
<u>State</u>			
Dept. of Business, Economic Development & Tourism			
Department of Health	x		x

<u>Agencies</u>	<u>Agencies Responded</u>	<u>Agencies Responding w/No Comment</u>	<u>Agency Letters and Responses Attached in this Section</u>
DLNR Land Division			
DLNR Historic Preservation Division	x		x
Office of Environmental Quality Control	x		x
Office of Hawaiian Affairs			
<u>City & County of Honolulu</u>			
Dept. of Design & Construction	x		x
Dept. of Facility Maintenance			
Dept. of Planning & Permitting	x		x
Dept. of Transportation Serv.	x		x
Fire Department	x		x
Police Department			
Dept. of Parks and Recreation			
<u>Utilities</u>			
Verizon Hawaii	x		x
Hawaiian Electric Company	x		x
<u>Elected Officials</u>			
Senator David Y. Ige			
Senator Calvin K. Kawamoto			
Rep. Roy M. Takumi			
Rep. Noboru Yonamine			
Councilmember Gary Okino			
<u>Community Groups</u>			
Manana Community Assn.	(by telecom)	x	
Pearl City Planning Task Force			
Pearl City Neighborhood Bd.	(by telecom)	x	



DEPARTMENT OF THE NAVY
 COMMANDER
 NAVY REGION HAWAII
 517 RUSSELL AVENUE, SUITE 110
 PEARL HARBOR, HAWAII 96844-4884

BOARD OF WATER SUPPLY
 CITY AND COUNTY OF HONOLULU
 630 SOUTH BERETANIA STREET
 HONOLULU, HAWAII 96843

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 ERIC F. ...
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 JAN KELLY, AIA
 HERBERT S. KALOPUA, DR
 BARBARA TOM STANTON
 KAZU NATASUDA, E-Other
 ROSS S. ...
 CLIFFORD S. JAMILE
 Manager and Chief Engineer



January 23, 2001

IN REPLY REFER TO:

5090
 Ser N465/17003
 27 DEC 2000

Mr. Glen T. Koyama
 Belt Collins Hawaii Ltd.
 680 Ala Moana Boulevard
 Honolulu, HI 96813-5406

Mr. C.K. Yokota, REC Engineer
 Regional Environmental Department
 U.S. Department of the Navy
 Navy Region Hawaii
 517 Russell Avenue, Suite 110
 Pearl Harbor, Hawaii 96860-4884

Dear Mr. Koyama:

Subject: DRAFT ENVIRONMENTAL ASSESSMENT, PROPOSED WELL
 IMPROVEMENTS, MANANA, OAHU, HAWAII, TMK 9-7-24:
 PORTION OF 41

We would like to thank you for extending an invitation for us to comment on the draft environmental assessment listed above. At this time we have completed the review of this assessment and have no comments at this time.

The point of contact for this matter is Ms. Amanda Mano'i. Should you have any questions or concerns, she can be contacted at 471-1171 extension 223.

Sincerely,

C. K. Yokota

C. K. YOKOTA
 REC Engineer
 Regional Environmental Department
 By direction of
 Commander, Navy Region Hawaii

Dear Mr. Yokota:

Subject: Your Letter of December 27, 2000 Regarding the Draft Environmental Assessment for the Proposed Manana Well Project. Manana, Oahu. TMK: 9-7-24: 41

Thank you for reviewing the Draft Environmental Assessment for the proposed Manana Well Project.

We acknowledge that you have no comments to offer at this time.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Very truly yours,

Clifford S. Jamile

FOR CLIFFORD S. JAMILE
 Manager and Chief Engineer

cc: Glen Koyama, Belt Collins Hawaii, Ltd.

United States
Department of
Agriculture
Natural
Resources
Conservation
Service

P.O. Box 50004
Honolulu, HI
96850



Our People...Our Islands...In Harmony

February 8, 2001

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Subject: Reference document 9971.0600/OOP-343 - Draft Environmental Assessment (DEA) - Proposed Well Improvements - Manana, Oahu, Hawaii

We have reviewed the above mentioned document and have no comments to offer at this time.

Thank you for the opportunity to review this document.

Sincerely,

KENNETH M. KAMESHIRO
State Conservationist

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



February 28, 2001

JEREMY HARRIS, Mayor
EDEE FLORES, JR., Chairman
CHARLES A. STEEL, Vice-Chairman
JAN KELLY JAMES
HERBERT B.K. KAOPUA, SR.
BARBARA YOUNG STANTON
BRIAN K. MIYAL, Esq.
ROSS E. SASAKAWA, Esq.
CLIFFORD S. JANUZE
Manager and Chief Engineer

Mr. Kenneth M. Kameshiro, State Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
P. O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Kameshiro:

Subject: Your Letter of February 8, 2001 Regarding the Draft Environmental Assessment for the Proposed Manana Well Project, Manana, Oahu, TMK: 9-7-24: 041

Thank you for your letter regarding the Draft Environmental Assessment for the proposed Manana Well Project.

We acknowledge that you have no comments on the proposed project at this time.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Very truly yours,

FOR CLIFFORD S. JANUZE
Manager and Chief Engineer

cc: ✓ Glen Koyama, Belt Collins Hawaii



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
677 Ala Moana Blvd., Suite 415
Honolulu, Hawaii 96813

December 20, 2000

Mr. Glen T. Koyama
Belt Collins Hawaii, Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Subject: Draft Environmental Assessment (DEA)
Proposed Well Improvements
Manana, Oahu, Hawaii, TMK 9-7-24: Portion of 41

Thank you for forwarding the subject DEA for review and comment by the staff of the U.S. Geological Survey, Water Resources Division, Hawaii District office. We regret however, that due to prior commitments and lack of available staff, we are unable to review this document and are returning it for your future use.

We appreciate the opportunity to participate in the review process.

Sincerely,

Gordon W. Tribble
District Chief

Cc: Clifford S. Jamile, Board of Water Supply w/o enclosure
Enclosure

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BEREKETAHUA STREET
HONOLULU, HAWAII 96843



January 23, 2001

Mr. Gordon W. Tribble, District Chief
Water Resources Division
U.S. Geological Survey
Department of the Interior
677 Ala Moana Boulevard, Suite 415
Honolulu, Hawaii 96813

Dear Mr. Tribble:

Subject: Your Letter of December 20, 2000 Regarding the Draft Environmental Assessment for the Proposed Manana Well Project, Manana, Oahu, TMK: 9-7-24: 41

Thank you for reviewing the Draft Environmental Assessment (EA) for the proposed Manana Well Project.

We regret that you are unable to review the Draft EA due to prior commitments and lack of available staff.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Very truly yours,

FOR CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Glen Koyama, Belt Collins Hawaii, Ltd.

JORDAN HAYASHIDA
EDDIE FLORES
CHARLES A. STED, Vice Chairman
JAN WELTY, ASSESSOR
ROBERT S. KALONIA, SR.
BARBARA KIM STANTON
KAZUHIYASHIDA, E-Office
ROSE S. SAKAMURA, E-Office
CLIFFORD S. JAMILE
Manager and Chief Engineer

COPY



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801
December 26, 2000

BRUCE S. ANDERSON, P.H.D., M.P.H.
DIRECTOR OF HEALTH

In reply, please refer to
File #
00-2316/epo

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Blvd., 1st Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Subject: Draft Environmental Assessment (DEA)
Proposed Well Improvements
Manana, Oahu
TMK: 9-7-24; por. of 41

Thank you for allowing us to review and comment on the subject project. We have the following comments to offer:

Water Pollution

1. A National Pollutant Discharge Elimination System (NPDES) general permit is required for the following discharges to waters of the State:
 - a. Storm water discharges relating to construction activities, such as clearing, grading, and excavation, for projects equal to or greater than five acres;
 - b. Construction dewatering activities;
 - c. Treated groundwater from underground storage tank remedial activities, a
 - d. Hydro testing water, and
 - e. Treated effluent from well drilling activities.

Any person requesting to be covered by a NPDES general permit for any of the above activities should file a Notice of Intent with the Department's Clean Water Branch at least 30 days prior to commencement of any discharge to waters of the State.

Mr. Glen T. Koyama
December 26, 2000
Page 2

2. After construction of the proposed facility is completed, an NPDES individual permit will be required if the operation of the facility involves any wastewater discharge into State waters.

Any questions regarding these comments should be directed to Mr. Denis Lau, Branch Chief, Clean Water Branch at 586-4309.

Sincerely,

GARY GILLS

Deputy Director
Environmental Health Administration

c: CWB

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERTANA STREET
HONOLULU, HAWAII 96843



February 12, 2001

JUDITH HARVEY, Mayor
BOB RICHARDS, Deputy Mayor
COPY
CHARLES CHAN, Director
JAN LILLY, Asst. Dir.
HERBERT S. K. KAUFMAN, Sr.
BARBARA KIM STANTON
KAZU HAYASHIDA, E-Office
ROSS S. SASAMURA, E-Office
CLIFFORD S. JAMILE
Manager and Chief Engineer

Mr. Gary Gill, Deputy Director
Environmental Health Administration
Department of Health
State of Hawaii
P. O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Gill:

Subject: Your Letter of December 26, 2000 Regarding the Draft
Environmental Assessment for the Proposed Manana
Well Project, Manana, Oahu. TMK: 9-7-24:41

Thank you for your letter regarding the Draft Environmental Assessment for the proposed
Manana Well Project.

Discharges associated with well drilling, hydrotesting, and dewatering activities will be
contained on-site or pumped into a back trench and not released into the City's drainage
system or State waters. The proposed project limits will not exceed five acres in land area
and operation of the facility will not involve any wastewater discharges into State waters.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Very truly yours,


FOR CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Glen Koyama, Belt Collins Hawaii



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
Kakuhikaha Building, Room 555
601 Kamohila Boulevard
Kapolei, Hawaii 96707

TIMOTHY E. JONES, CHAIRMAN
BOARD OF LAND AND NATURAL RESOURCES
COMMISSIONER OF WATER RESOURCES MANAGEMENT

DEPUTY
JAMES E. BANGOLD
LAWRENCE W. WOOD

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES
DIVISION
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
STATE PARKS
WATER RESOURCE MANAGEMENT

November 29, 2000

Glen T. Koyama
Belt Collins
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813

Dear Mr. Koyama:

SUBJECT: Chapter 6E-8 Historic Preservation Review - Board of Water Supply, Draft Environmental Assessment for the Proposed Well Improvements at Manana Manana, Ewa, O'ahu
TMK: 9-7-024:027

LOG NO: 26599
DOC NO: 0011E17

Thank you for the opportunity to comment on the DEA for the proposed well improvements at the Manana/Pearl City Junction Development. Our previous comments, that we believe the proposed project will have "no effect" on significant historic sites, are included in Section III of the DEA and in full in Appendix A.

Should you have any questions, please feel free to call Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

Eljk

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
830 SOUTH BERTIANA STREET
HONOLULU, HAWAII 96843



January 23, 2001

Mr. Don Hibbard, Administrator
State Historic Preservation Division
State of Hawaii
Kakuhikaha Building, Room 555
601 Kamohila Boulevard
Kapolei, Hawaii 96707

Dear Mr. Hibbard:

Subject: Your Letter of November 29, 2000 Regarding the Draft Environmental Assessment for the Proposed Manana Well Project, Manana, Oahu, TMK: 9-7-24: 41

Thank you for reviewing the Draft Environmental Assessment (EA) for the proposed Manana Well Project.

We acknowledge that according to your records, the proposed project will have "no effect" on historic sites. Your previous comments of July 7, 2000 to our preconsultation letter have been included in Appendix A of the Draft EA.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Very truly yours,

FOR CLIFFORD S. JAMILE
Manager and Chief Engineer

Glen Koyama, Belt Collins Hawaii, Ltd.

JERRY HARRIS, Mayor
EDEE FLORES, Councilmember
CHARLES A. ABRAHAM, Councilmember
JAN HALEY, Aiea
ROBERT S.E. KAUFMAN, SR.
BARBARA ION STANTON
EADU HAYASHIDA, Elected
ROSE E. SASABANA, Elected
CLIFFORD S. JAMILE
Manager and Chief Engineer

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JORGAY HAWES, Mayor
 ERDE F. ...
 CHAU...
 JAN...
 H...
 BARBARA ...
 KAZU...
 ROSS ...
 CLIFFORD ...
 Manager and Chief Engineer



January 23, 2001

BOARD OF WATER SUPPLY
 CITY AND COUNTY OF HONOLULU
 630 SOUTH BERETANIA STREET
 HONOLULU, HAWAII 96843

Ms. Genevieve Salmonson, Director
 State of Hawaii
 Office of Environmental Quality Control
 235 South Beretania Street, Suite 702
 Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Your Letter of November 21, 2000 Regarding the Draft Environmental Assessment for the Proposed Manana Well Project, Manana, Oahu, TMK: 9-7-24: 41

Thank you for reviewing the Draft Environmental Assessment (EA) for the proposed Manana Well project.

We have the following comments to your concerns:

1. As requested, for the Final EA, we will print on both sides of the pages to reduce bulk and save paper. We are also considering compact discs for future documents.
2. The State Historic Preservation Division (SHPD) has reviewed and responded to us on the correct area but has inadvertently showed the incorrect parcel number. A full copy of the Draft EA was transmitted to SHPD on November 20, 2000 for their review and comments on the document and correct area. We received SHPD's response dated November 29, 2000 on the document and correct area.
3. We have reviewed Act 50 and have discussed the requirements of a cultural assessment with a consultant. Our review of the project site reveals that the approximately 14,700 sq. ft. site is part of a larger property that has been used by the U.S. Navy for storage and warehouse purposes for over 50 years prior to its transfer to the City & County of Honolulu. Notably, during that period, public access to the area was restricted. Prior to the military use and as early as the late 19th century, the Honolulu Plantation was using the property for sugar cane cultivation. It is believed that all vegetation, habitats, and man-made features then occurring on the site would have been removed or altered. Further, it is believed that the site is small and isolated and would be well off of or would not interfere with any path to existing sites of cultural resources, beliefs and practices involving native Hawaiians and other ethnic groups. Hence, it is unlikely that there would be any cultural significance related to the property.

Pure Water... our greatest need - use it wisely



STATE OF HAWAII
 OFFICE OF ENVIRONMENTAL QUALITY CONTROL

238 SOUTH BERETANIA STREET
 SUITE 702
 HONOLULU, HAWAII 96813
 TELEPHONE: (808) 586-4118
 FACSIMILE: (808) 586-4119

November 21, 2000

Clifford Jamile
 Board of Water Supply
 630 S. Beretania St.
 Honolulu HI 96843

Attn: Lester Fujiikuni

Dear Mr. Jamile:

Subject: Draft Environmental Assessment (EA) for Manana Well Improvements
 TMK: 9-7-24: 41

We have the following comments to offer:

1. Two-sided pages: In order to reduce bulk and save on paper, please consider printing on both sides of the pages in the final document.
2. TMK discrepancy: The pre-consultation letter referenced TMK 9-7-24: 41, par. 27. We are especially concerned that State Historic Preservation Division of DLNR has not been consulted about the correct parcel. In the final EA correct the discrepancy and be sure to obtain SHPD's consultation on the affected parcel.
3. Cultural impacts assessment: Act 50 was passed by the Legislature in April of 2000. This mandates an assessment of impacts to local cultural practices by the proposed project. In the final EA include such an assessment. For assistance in the preparation refer to our *Guidelines for Assessing Cultural Impacts*. Contact our office for a paper copy or go to our homepage at <http://www.state.hi.us/health/oeqc/index.html>. You will also find the text of Act 50 linked to this section of our homepage. If you feel that Act 50 is not applicable to this project, include a full justification in the final EA.

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,

Genevieve Salmonson
 GENEVIEVE SALMONSON
 Director

Glen Koyama, Bdi Collins

Ms. Genevieve Salmonson
January 23, 2001
Page 2

The Office of Hawaiian Affairs has reviewed the project (see letter of May 22, 2000 in Appendix A of Draft EA) and has noted that an EA prepared in 1998 for the site's exploratory well indicated that the area has undergone extensive grading and modifications and that no significant archaeological or cultural sites are known or expected to exist on the project site.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Very truly yours,



FOR CLIFFORD S. JAMLE
Manager and Chief Engineer

cc: Gen Koyama, Bell Collins Hawaii

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 Fax: (808) 523-4587
Website: www.cc.honolulu.hi



SERGLAY HARRIS
MAYOR

GARY Q. L. YEE, AIA
DIRECTOR
ROLAND D. LIBBY, JR., AIA
DEPUTY DIRECTOR

November 27, 2000

WWDEP 00-731

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-3406

Dear Mr. Koyama:

Subject: Draft Environmental Assessment for Proposed Well Improvements
Manana, Oahu, Hawaii

We have reviewed the subject Draft Environmental Assessment. We have no comments to offer. The subject project will not have washroom facilities; therefore, will not have any impact to the City's wastewater system.

Should there be any questions, please contact Tim Steinberger of our Wastewater Planning Branch at 527-5388.

Very truly yours,


GARY Q. L. YEE, AIA
Director

cc: Clifford S. Jamile, Board of Water Supply

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843



December 14, 2000

JERRY
COPY

EDDIE FLORES, JR., Chairman
CHARLES A. STEWART, Vice Chairman
JAN M.L.Y. JAM
HERBERT S. K. KAPULA, SR.
BARBARA DODD STANTON
KAZUHIYASHIMA, Esq.
ROSS E. SASAKURA, Esq.
CLIFFORD S. JAMILE
Manager and Civil Engineer

TO: MR. GARY Q. L. YEE, AIA, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: FOR CLIFFORD S. JAMILE


SUBJECT: YOUR MEMORANDUM OF NOVEMBER 27, 2000 REGARDING THE
DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED
MANANA WELL PROJECT. MANANA_OAHU_TMK: 9-7-24: 41

Thank you for reviewing the Draft Environmental Assessment for the proposed Manana Well Project.

We acknowledge that you have no comments to offer on the proposed project. We understand the proposed project will not have any impact to the City's wastewater system.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

 Glen Koyama, Belt Collins Hawaii, Ltd.

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: WWW.DPP.HONOLULU.HI



JENNIFER HARRIS
CLERK

RANDALL K. FUJIKI, AIA
ACTING DIRECTOR

2000/CLOG-6118 (PD)

January 11, 2001

Mr. Glen T. Koyama
Belt Collins
680 Ala Moana
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Comments on Draft Environmental Assessment (EA) for Manana Well Improvements
Tax Map Key 9-7-24; Pgr. 41

We have reviewed the above-referenced document, and offer the following comments on the project.

5
6
The project, which places a symbol for a water well on the Development Plan Public Facilities Map for the Primary Urban Center (PUC), conforms to the Oahu Water Management Plan (OWMP, Ordinance No. 90-62) in three ways. First, it is consistent with the OWMP Policy 1, and Strategy 1, which specify that facilities for the provision of water, and water resources, shall be based on the General Plan population projections and the land use policies contained in the Development Plans and depicted on the Development Plan Land Use Maps. Secondly, the proposed well improvements are identified in the July 1998 OWMP Technical Reference Document. Thirdly, it supports one of the goals listed in that document, i.e., to maximize the use of the Pearl Harbor Aquifer (considered the most cost-effective water source to serve Oahu's approved growth areas).

We note, however, that the draft Environmental Assessment contains two minor misstatements which require correction. These are:

1. On page 2, second paragraph, there is a discussion of aquifer areas and their yields. The document should mention that the PUC, which does not extend to Hawaii Kai, should be dropped; and
2. On page 28, third paragraph, the text should be revised to read "The proposed project is not intended to open up new areas for development but to meet the increasing demand for water due to incremental growth in the urban core, based on policies in both the PUC Development Plan and the East Honolulu Sustainable Communities Plan".

Mr. Glen T. Koyama
Belt Collins
Page 2
January 11, 2001

If you have any questions, please contact Pamela Davis of our staff at 523-4807.

Sincerely yours,

RANDALL K. FUJIKI, AIA
Acting Director of Planning and Permitting

RKF:lh
71333

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
830 SOUTH KEELE STREET
HONOLULU, HAWAII 96813



February 9, 2001

JORDAN HANDEL, Mayor
EDDIE FLORES, Council
CHARLES A. CHAMBERS, Council
JAN M. LY, Mayor
HERBERT S. K. KAPOHA, SR.
BARBARA DUN STANTON
KAZU HAYASHIDA, Ex-Officio
ROSS E. SASAKAWA, Ex-Officio
CLIFFORD S. JAMIEZ
Manager and Chief Engineer

COPY

TO: RANDALL K. FUJIKI, AIA, ACTING DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM:  FOR CLIFFORD S. JAMIEZ

SUBJECT: YOUR LETTER DATED JANUARY 11, 2001 TO BELT
COLLINS HAWAII, LTD. REGARDING THE DRAFT
ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED
MANANA WELL PROJECT. MANANA_OAHU.IMK: 9-7-24: 41

57

Thank you for reviewing the Draft Environmental Assessment (EA) for the proposed Manana Well Project.

We have the following comments to your concerns:

1. We acknowledge that the project which is listed as a "site determined" facility on the Development Plan Public Facilities Map for the Primary Urban Center conforms to the Oahu Water Management Plan.
2. The Final EA (page 2, second paragraph) will be revised to indicate that the Primary Urban Center does not extend to Hawaii Kai.
3. The Final EA (page 28, third paragraph) will be revised to indicate that the proposed project is not intended to open up new areas for development but to meet the increasing demand for water due to incremental growth in the urban core, based on policies in both the Primary Urban Center Development Plan and the East Honolulu Sustainable Communities Plan.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

cc:  Glen Koyama, Belt Collins Hawaii, Ltd.

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
 PACE PEARL PLAZA • 711 KANOLANI BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813
 TELEPHONE: (808) 531-4333 • FAX: (808) 532-1390 • INTERNET: WWW.CC.HONOLULU.HI



Cheryl D. Soon
 Acting Director
 George "Kooki" Miyamoto
 Deputy Director

January 8, 2001

TPD11/00-5625R

Mr. Glen T. Koyama
 Belt Collins Hawaii Ltd.
 680 Ala Moana Boulevard, First Floor
 Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Subject: Manana Board of Water Supply Well Improvements

In response to your November 20, 2000 letter, the draft environmental assessment (EA) for the subject project was reviewed. The following comments are the result of this review:

1. The last paragraph on Page 29 describes the center lane of Waimano Home Road as serving as a continuous median left-turn lane for either direction. This description should be verified and clarified, if necessary.
2. The discussion regarding Accessory Facilities and Access on Page 11 states that a portion of the road reserve mauka of the well site is being considered as a potential connector street between Spine Road and Kuahaka Street. The impact of the proposed project on this potential connector street should be discussed.

Should you have any questions regarding these comments, please contact Faith Miyamoto of the Transportation Planning Division at 527-6976.

Sincerely,

CHERYL D. SOON
 Acting Director

BOARD OF WATER SUPPLY
 CITY AND COUNTY OF HONOLULU
 630 SOUTH BIETARUA STREET
 HONOLULU, HAWAII 96843



February 9, 2001

JORDAN HARRIS, Mayor
 DEBORAH ROBERTS, Deputy Mayor
 CHUCK LEE, City Engineer
 JAN HALEY, City Engineer
 ROBERT S.K. MAOHUA, Sr.
 BARBARA TAM STANTON
 KAZU HAYASHIDA, Executive Director
 ROSE S. SASABARA, Executive Director
 CLIFFORD S. JAMILE
 Manager and Chief Engineer

TO: MS. CHERYL D. SOON, ACTING DIRECTOR
 DEPARTMENT OF TRANSPORTATION SERVICES

FROM: FOR CLIFFORD S. JAMILE

SUBJECT: YOUR LETTER DATED JANUARY 8, 2001 TO BELT
 COLLINS HAWAII, LTD. REGARDING THE DRAFT
 ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED
 MANANA WELL PROJECT, MANANA, OAHU. TMK: 9-7-24: 41

Thank you for reviewing the Draft Environmental Assessment (EA) for the proposed Manana Well Project.

We have the following comments to your concerns:

1. The description of the continuous median left-turn lane for either direction on Waimano Home Road will be clarified in Section 5 of the Final EA. This two-way, left-turn lane is limited to the segment between Nanakai Street and Hoolaulaea Street. At all the intersections within this segment, the median converts to a one-way dedicated left-turn lane.
2. The anticipated impact from the potential connector street between Spine Road and Kuahaka Street is expected to be minor. The connector street is not a regional right-of-way providing access to the larger community. Traffic that is expected to occur on the connector street would be local trips made primarily by residents entering and leaving their Manana Subdivision and Holiday City Subdivision neighborhoods. This convenient route would allow a more direct access between the residents' homes and Moanalua Road or Acacia Road. Further discussion of the anticipated impacts are addressed in the Final EA (February 1999) which was prepared by the City for the Manana and Pearl City Junction Development Spine Road and Connector Road project.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

cc: Glen Koyama, Belt Collins Hawaii, Ltd.

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

3711 MOANANA STREET, SUITE 1425 • HONOLULU, HAWAII 96813-1845
TELEPHONE: (808) 831-7781 • FAX: (808) 831-7790 • WEBSITE: WWW.CC.HONOLULU.HI



JEREMY HARRIS
MAYOR

ATTILIO K. LEONARDI
FIRE CHIEF
JOHN CLARE
DEPUTY FIRE CHIEF

December 1, 2000

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Subject: Draft Environmental Assessment
Proposed Well Improvements
Manana, Oahu, Hawaii
Tax Map Key: 9-7-024; Portion of 041

We received your letter dated November 20, 2000, regarding the above-mentioned project. We reviewed the documents and have no objections to the project.

Should you have any questions, please call Battalion Chief Kenneth Silva of our Fire Prevention Bureau at 831-7778.

Sincerely,

ATTILIO K. LEONARDI
Fire Chief

AKLKS:ms

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843



January 23, 2001

JEREMY HARRIS
MAYOR
COPY

EDOE FLORES, ASST. MGR.
CHARLES A. TITUS, ASST. MGR.
JAN M.L.Y. ABE
HOMER E. K. KADOMBA, SR.
BARBARA KIM STANTON
KAZUHIYASHIRO, Sr-Office
MOSES S. SASAMURA, Sr-Office
CLIFFORD S. JAMIEZ
Manager and Chief Engineer

TO: MR. ATTILIO LEONARDI, FIRE CHIEF
FIRE DEPARTMENT

FROM: FOR CLIFFORD S. JAMIEZ

SUBJECT: YOUR MEMORANDUM OF DECEMBER 1, 2000 REGARDING THE
DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED
MANANA WELL PROJECT, MANANA, OAHU, TMK: 9-7-24: 41

Thank you for reviewing the Draft Environmental Assessment for the proposed Manana Well Project.

We acknowledge that you have no objections to the proposed project.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Glen Koyama, Belt Collins Hawaii, Ltd.



Verizon Hawaii Inc.
P.O. Box 2200
Honolulu, HI 96841

December 6, 2000

Mr. Glen T. Koyama
Belt Collins, Hawaii Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu HI 96813-5406

Dear Mr. Koyama:

Subject: PROPOSED WELL IMPROVEMENTS, MANANA, OAHU, HAWAII

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the Proposed Exploratory Wells at Manana.

Based on our review, Verizon Hawaii has no conflicts with the proposed project and will be able to provide telecommunication service to the facility if you so require.

Verizon Hawaii also requests the opportunity to review and comment on any detailed electrical construction drawings for your proposed project.

If you have any questions or require assistance in the future on this project, please call Dennis C. Silva at 840-5856.

Very truly yours,

Dennis C. Silva
Dennis C. Silva
Project Engineer
Access Design & Construction

c: C. Nyuha

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERTANHA STREET
HONOLULU, HAWAII 96843



January 23, 2001

Mr. Dennis C. Silva, Project Engineer
Access Design & Construction
Verizon Hawaii, Inc.
P. O. Box 2200
Honolulu, Hawaii 96841

Dear Mr. Silva:

Subject: Your Letter of December 6, 2000 Regarding the Draft Environmental Assessment for the Proposed Manana Well Project, Manana, Oahu, TMK: 9-7-24: 41

Thank you for reviewing the Draft Environmental Assessment for the proposed Manana Well Project.

We acknowledge that you have no conflicts with the proposed project and will be able to provide telecommunication service to the facility. The electrical plans will be submitted for your review and comment.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Very truly yours,

Clifford S. Jamile
FOR CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Glen Koyama, Belt Collins Hawaii, Ltd.

JERRY HANCO, MGR
EDGE FORD, MGR
CHARLES A. STELL, MGR
JAMIE L. AME
HERBERT S. C. EAGAN, SR
BARBARA IBM STANTON

KAZU HAYASHIDA, E-Office
ROSS S. SALAMONIA, E-Office
CLIFFORD S. JAMILE
Manager and Chief Engineer

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843



January 23, 2001

JOSEPH HARRIS, Mayor
EDGE (PH) 535-1000
CHARLES HARRIS, Chairman
JAN MULLY, AM
HERBERT B.K. KADUNA, DR.
BARBARA TAM STANTON
KAZUHIYASHIRO, E-Office
ROSS S. SAKAMURA, E-Office
CLIFFORD S. JAMILE
Manager and Chief Engineer



Mr. Glen Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Blvd., First Floor
Honolulu, Hawaii 96813

Dear Mr. Koyama:

Re: Draft Environmental Assessment
Proposed Well Improvements
Manana, Oahu, Hawaii, TMK 9-7-24: Portion of 41
HECO Work Order No: CE029326

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the proposed well improvements at Manana, Oahu.

Based on our review, HECO has no existing facilities at the proposed well site. As such, our only comment at this time is to coordinate electrical service for the well site with our Customer Installations Department.

If there are any questions, please contact me at 543-7785.

Sincerely,

Michael S. Ho

Michael S. Ho
Lead Engineer
Engineering Department

Attachment(s)

Mr. Michael S. Ho
Engineering Department
Hawaiian Electric Company, Inc.
P. O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Ho:

Subject: Your Letter of December 27, 2000 Regarding the Draft Environmental Assessment for the Proposed Manana Well Project, Manana, Oahu, TMK: 9-7-24: 41

Thank you for reviewing the Draft Environmental Assessment for the proposed Manana Well Project.

We acknowledge that Hawaiian Electric Company has no existing facilities at the proposed well site. Electrical service for the well site will be coordinated with your Customer Installations Department.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Very truly yours,

Clifford S. Jamile

FOR CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Glen Koyama, Belt Collins Hawaii, Ltd.



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XIII. REFERENCES

- Board of Water Supply (October 1981). *Municipal Water Use Plan, Pearl Harbor Ground Water Control Area.*
- Department of Health, State of Hawaii (March 12, 1990). *Hawaii Groundwater Quality Protection Strategy.*
- Board of Water Supply (1980). *State of the Groundwater Resources of Southern Oahu.*
- U.S. Geological Survey, Department of the Interior (1986). *Summary of Available Ground-Water Data for the Island of Oahu, Hawaii, Open-File Report 86-233.*
- R.M. Towill Corporation (February 1998). *Manana Exploratory Wells - Final Environmental Assessment*, prepared for the Board of Water Supply, City and County of Honolulu.
- Board of Water Supply (July 1, 1998 - June 30, 1999). *Annual Report and Statistical Summary.*
- Commission on Water Resource Management (date). *Data file on existing wells on Oahu, Hawaii.*
- Department of Health, State of Hawaii (July 2000). *Staff assistance via office visit and telecom on water quality tests on existing wells, solid waste sites, cesspools, septic tanks, injection wells, and dry wells in Manana area.*
- U.S. Environmental Protection Agency. *EPA website for hazardous waste sites in Hawaii (2000).*
- Department of the Navy, Naval Facilities Engineering Command, Pacific Division (November 1994). *Comprehensive Long-Term Environmental Action Navy.*
- Scientific Consultant Services, Inc. (July 1995). *An Archaeological Assessment of the Manana and Pearl City Junction Sites - Manana and Waiawa Ahupua'a, Ewa District, Oahu Island, Hawaii.*
- PKF Hawaii (May 1996). *Manana and Pearl City Junction Development Final Environmental Impact Statement.*
- Engineering Concepts, Inc. and Planning Solutions, Inc. (February 1999). *Final Environmental Assessment - Manana Development Spine Road, Pearl City, Oahu, Hawaii.*

APPENDIX A

Letters Received During Early Consultation Period



DEPARTMENT OF THE NAVY
 COMMANDER
 NAVY REGION HAWAII
 517 RUSSELL AVENUE
 PEARL HARBOR, HAWAII 96860-4884

BY REGULAR MAIL TO:

5090
 Ser N465/ 16769
 14 JUN 2000

Mr. Glen T. Koyama
 Belt Collins Hawaii Ltd.
 680 Ala Moana Boulevard
 Honolulu, HI 96813-5406

Dear Mr. Koyama

Subj: ENVIRONMENTAL ASSESSMENT FOR PROPOSED WELL OUTFITTING AND
 INSTALLATION, HONOLULU BOARD OF WATER SUPPLY
 MANANA, OAHU, HAWAII

Thank you for your letter of May 16, 2000 soliciting the Navy's comments on the concept plan for the proposed well outfitting and installation project. As requested, the Navy has completed its review of the plan and has no comments at this time. However, we request to be a consulted party during the preparation of the environmental assessment.

The Navy's point of contact for this matter is Mr. Randy Miyashiro. Should you require additional information, he can be contacted at 471-1171 extension 233.

Sincerely,

C. K. Yokota

C. K. YOKOTA
 REC Engineer
 Regional Environmental Department
 By direction of the Commander



BELT COLLINS

June 29, 2000
 9971.0600 / 00P-189

Mr. Clyde K. Yokota, REC Engineer
 Regional Environmental Department
 U.S. Department of the Navy
 517 Russell Avenue
 Pearl Harbor, HI 96860-4884

Dear Mr. Yokota:

Environmental Assessment
 Proposed Well Installation
 Honolulu Board of Water Supply
Manana, Oahu, Hawaii. Tax Map Key 9-7-24; por. 22

Thank you for your letter of June 14, 2000 responding to our preconsultation notice to prepare an Environmental Assessment for the well installation at Manana. When the Draft EA is completed, we will transmit a copy to you for further review and comment.

Thank you for your participation in this review process.

Sincerely yours,

BELT COLLINS HAWAII LTD.

Glen T. Koyama

Glen T. Koyama

GTK:lf

cc: Lester Fujikami, BWS

BELT COLLINS HAWAII LTD. • 680 ALA MOANA BOULEVARD, FIRST FLOOR, HONOLULU, HAWAII 96813-5106 U.S.A.
 TEL: 808 331-5181 FAX: 808 331-7819 EMAIL: hr@bclhawaii.com WEB: www.bclhawaii.com

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United States
Department of
Agriculture

Natural
Resources
Conservation
Service

P.O. Box 50004
Honolulu, HI
96850

Our People...Our Islands...In Harmony

July 10, 2000

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Subject: Environmental Assessment (EA) – Proposed Well Outfitting and Installation,
Honolulu Board of Water Supply, Manana, Oahu, Hawaii

We have reviewed the above mentioned document and have no comments to offer at
this time.

Thank you for the opportunity to review this document.

Sincerely,

KENNETH M. KANESHIRO
State Conservationist

The Natural Resources Conservation Service works hand-in-hand with
the American people to conserve natural resources on private lands. AN EQUAL OPPORTUNITY EMPLOYER

PHONE (808) 594-1888



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPIOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

May 22, 2000

Mr. Glen T. Koyama
Belt Collins Hawai'i Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawai'i 96813-5406

PC# 110

Subject: Environmental Assessment Proposed Well Outfitting and Installation
Honolulu Board of Water Supply; Manana, Oahu, Hawai'i

Dear Mr. Koyama,

Thank you for the opportunity to respond to the above-referenced document. This is the second phase of a two well project. An environmental assessment was done in 1998 for the first well.

As with any project, the Office of Hawaiian Affairs is concerned that subsurface archaeological, historical and cultural remains may be impacted. The 1998 EA concluded that the area has undergone extensive grading and modifications and that no significant archaeological or cultural sites are known or expected to exist on the project site. The proposed mitigation measures are standard and acceptable.

At this time, the Office of Hawaiian Affairs has no further concerns with this project. If you have any questions, please contact Ken R. Salva Cruz, Policy Analyst, at 594-1847.

Sincerely,

Colin C. Kippen, Jr.

Colin C. Kippen, Jr.
Deputy Administrator

cc: Board of Trustees
Board of Water Supply
OEQC

FAX (808) 594-1865



Glen T.
BELT COLLINS

June 29, 2000
9971.0600 / OOP-182

Mr. Colin C. Kippen, Jr.
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Boulevard, Suite 500
Honolulu, HI 96813

Dear Mr. Kippen:

Environmental Assessment
Proposed Well Installation
Honolulu Board of Water Supply
Manana, Oahu, Hawaii. Tax Map Key 9-7-24: por. 2Z

Thank you for your letter of May 22, 2000 responding to our preconsultation notice to prepare an Environmental Assessment for the well installation at Manana. As we prepare the EA, we will address your comments and consider your input for incorporation in the Draft EA. When the Draft EA is completed, we will transmit a copy to you for further review and comment.

Thank you for your participation in this review process.

Sincerely yours,

BELT COLLINS HAWAII LTD.

Glen T. Koyama

Glen T. Koyama

GTK:lf

cc: Lester Fujikami, BWS

BELT COLLINS HAWAII LTD. • 680 ALA MOANA BOULEVARD, FIRST FLOOR, HONOLULU, HAWAII 96813-5104 U.S.A.

TEL: 808 511-3161 FAX: 808 514-7819 EMAIL: ken@beltcollins.com WEB: www.beltcollins.com

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BEL COLLINS
HONOLULU, HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
HONOLULU, HAWAII 96809

June 5, 2000

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Blvd., 1st Floor
Honolulu, HI 96813

Dear Mr. Koyama:

Environmental Assessment, Proposed Well Outfitting and Installation
Honolulu Board of Water Supply, Manana, Oahu, Hawaii

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

- (X) We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.
- () We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- () We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- (X) A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.
- (X) The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.
- () Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- () We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for the project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.
- () If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).
- () If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.
- (X) OTHER:

The required permits from the Commission were accurately identified in the project description. We look forward to reviewing the draft environmental assessment.

If there are any questions, please contact the Commission staff at 587-0218.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

LN:ss

THOMAS E. JONES
Director
BRUCE B. ANDERSON
Deputy Director
ROBERT A. CALVO
Deputy Director
DAVID A. MORRIS
Deputy Director
KENNETH A. INDOVIG, JR.
Deputy Director
LINNEL T. NISHIOKA
Deputy Director



BELT COLLINS

June 29, 2000
9971.0600 / OOP-184

Ms. Linnel T. Nishioka, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, HI 96809

Dear Ms. Nishioka:

Environmental Assessment
Proposed Well Installation
Honolulu Board of Water Supply
Manana, Oahu, Hawaii, Tax Map Key 9-7-24, pgs. 22

Thank you for your letter of June 5, 2000 responding to our preconsultation notice to prepare an Environmental Assessment for the well installation at Manana. As we prepare the EA, we will address your comments and consider your input for incorporation in the Draft EA. When the Draft EA is completed, we will transmit a copy to you for further review and comment.

Thank you for your participation in this review process.

Sincerely yours,
BELT COLLINS HAWAII LTD.

Glen T. Koyama

GTK:lf
cc Lester Fujikami, BWS

BELT COLLINS HAWAII LTD. • 680 ALA MOANA BOULEVARD, FIRST FLOOR, HONOLULU, HAWAII 96813-5106 U.S.A.
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BERNARD J. CANTANO
GOVERNOR OF HAWAII



BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to
File

June 28, 2000

99-016A

Mr. Glen Koyama
Belt Collins Hawaii, Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Subject: Pre-Environmental Assessment
Proposed Well Outfitting and Installation
Manana, Oahu

Thank you for allowing us to review and comment on the subject well project. We do not have any comments to offer at this time.

Sincerely,

Gary Gill
Deputy Director
for Environmental Health



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kalahele Building, Room 558
401 Kamehameha Boulevard
Honolulu, Hawaii 96813

TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
SECRETARY
JANET E. LAWRENCE

AQUATIC RESOURCES
SOILS AND OCEAN RECLAMATION
CONSULTATION AND RESOURCES
DEPARTMENT
CONVEYANCE
FOUNDRY AND MOLDING
HISTORIC PRESERVATION
LAND
STATE PLANS
WATER RESOURCE MANAGEMENT

July 7, 2000

Glen T. Koyama
Belt Collins
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813

LOG NO: 25747 ✓
DOC NO: 0007EJ04

Dear Mr. Koyama:

**SUBJECT: Chapter 6E-8 Historic Preservation Review -Board of Water Supply,
Environmental Assessment for the Proposed Well Outfitting and
Installation at Manana
Manana, 'Ewa, O'ahu
TMK: 9-7-024:027**

Thank you for the opportunity to comment on the proposed well outfitting and installation project at the Manana/Pearl City Junction Development. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the project areas.

According to our records, there are no known historic sites on the subject parcel. This parcel has been extensively modified through grading and development for the former Manana Storage area. Consequently, it is highly unlikely that significant historic sites are still present in the subsurface areas of the property.

In view of these facts, we believe that the proposed project will have "no effect" on significant historic sites.

Should you have any questions, please feel free to call Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

Ej:jk

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE (808) 525-4314 • FAX (808) 527-6743 • INTERNET: www.ci.honolulu.hi.us/planning



BERNARD HARRIS
MAYOR

RANDALL K. FUJIKI, AA
DIRECTOR

LORETTA K. CHIEE
PLANNING DIRECTOR

June 5, 2000

2000/CLOG-2999(as)

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

**Proposed Well Outfitting and Installation
Board of Water Supply, Manana**

This is in response to your request dated May 16, 2000, for comments on the Board of Water Supply's proposed well outfitting and installation project at Manana in Pearl City.

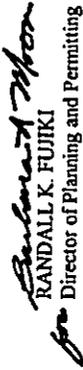
We suggest that the draft Environmental Assessment include a discussion of the following:

1. Conformance to the City's General Plan: Specifically, compatibility with site and surrounding area (including potential noise impacts and adverse visual impacts).
2. Conformance with the urban design principles and controls of the Development Plan Special Provisions for the Primary Urban Center (PUC).
3. Conformance with the Development Plan Common Provisions, specifically the DP Public Facilities Map and the related amendment, Manana Well, 98/PUC-1014 (IC).
4. The guidelines for water allocation and system development in the proposed (draft) PUC Development Plan.
5. Discussion regarding any impacts on nearby wells such as 2458-03-04 and 2458-01.

Mr. Glen T. Koyama
Page 2
June 5, 2000

Thank you for the opportunity to review and comment on the proposal. Should you have any questions, you may contact Adrian Sit-Li of our staff at 527-5072.

Sincerely yours,


RANDALL K. FUJIKI
Director of Planning and Permitting

RKF:fm
Pearl Doc 0483



BELT COLLINS

June 29, 2000
9971.0600 / OOP-187

Mr. Randall K. Fujiki, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, HI 96813

Dear Mr. Fujiki:

Environmental Assessment
Proposed Well Installation
Honolulu Board of Water Supply
Manana, Oahu, Hawaii, Tax Map Key 9-7-24; por. 2Z

Thank you for your letter of June 5, 2000 responding to our preconsultation notice to prepare an Environmental Assessment for the well installation at Manana. As we prepare the EA, we will address your comments and consider your input for incorporation in the Draft EA. When the Draft EA is completed, we will transmit a copy to you for further review and comment.

Thank you for your participation in this review process.

Sincerely yours,

BELT COLLINS HAWAII LTD.

Glen T. Koyama

GTK:lf
cc: Lester Fujikami, BWS

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DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11th FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 532-4344 • FAX: (808) 532-4387



GARY Q.L. YEE, AIA
DIRECTOR
ROLAND D. LEBBY, JR., AIA
COUNTY DIRECTOR

DC-252

May 31, 2000

Mr. Glen T. Koyama
Belt Collins Hawaii, Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-3406

Dear Mr. Koyama,

Subject: Environmental Assessment Proposed Well Outfitting and
Installation, Honolulu Board of Water Supply, Manana,
Oahu, Hawaii.

This is in response to your request of May 16, 2000 to review and comment on the
subject document.

We recommend that the Board of Water Supply contact our department regarding
scheduling to avoid possible conflicts with other contractors.

Thank you for allowing our department to express our concerns.

Should there be any questions, please contact Douglas Collinson at 527-6375.

Very truly yours,


for GARY Q. L. YEE, AIA
Director

GQLY:ln
cc: Planning and Permitting Dept.



BELT COLLINS

June 29, 2000
9971.0600 / 00P-186

Mr. Gary Q.L. Yee
Director and Building Superintendent
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Yee:

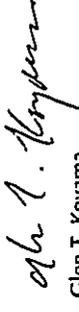
Environmental Assessment
Proposed Well Installation
Honolulu Board of Water Supply
Manana, Oahu, Hawaii, Tax Map Key 9-7-24; por. 2Z

Thank you for your letter of May 31, 2000 responding to our preconsultation notice
to prepare an Environmental Assessment for the well installation at Manana. As we
prepare the EA, we will address your comments and consider your input for incorporation
in the Draft EA. When the Draft EA is completed, we will transmit a copy to you for further
review and comment.

Thank you for your participation in this review process.

Sincerely yours,

BELT COLLINS HAWAII LTD.


Glen T. Koyama

GTK:lf
cc: Lester Fujitkami, BWS

BELT COLLINS HAWAII LTD. • 680 ALA MOANA BOULEVARD, FIRST FLOOR, HONOLULU, HAWAII 96813-3406 U.S.A.

TEL: 808 531-5341 FAX: 808 532-7819 EMAIL: hawaii@bclcollins.com WEB: www.bclcollins.com

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DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
PACIFIC PALMS PLAZA • 2111 KALANIKULANI BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4323 • FAX: (808) 523-4720



JEREMY HARRIS
MAYOR

CHERYL D. SOON
DIRECTOR
JOSEPH M. MAGALAN, JR.
DEPUTY DIRECTOR

July 11, 2000

TPD5/00-02389R

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Subject: Honolulu Board of Water Supply Manana Well Outfitting and Installation

In response to your May 16, 2000 letter, the information provided regarding the subject project was reviewed. We have the following comments for your consideration as you prepare the draft environmental assessment (EA):

1. The draft EA should discuss the impact of the project on the proposed Spine Road, such as any impact on the road alignment and on traffic movement due to the access driveway.
2. Page 41 of the Final EA for the Manana Exploratory Wells states that the contractor will schedule heavy truck activity between the hours of 8:30 a.m. and 2:30 p.m. on weekdays and will suspend activity on weekends and State holidays to minimize traffic impacts to the nearby residents. This same mitigation measure should also be required for the subject project.

Should you have any questions regarding these comments, please contact Faith Miyamoto of the Transportation Planning Division at 527-6976.

Sincerely,

Handwritten signature of Cheryl D. Soon in cursive.

CHERYL D. SOON
Director

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAHPAKA STREET, SUITE H425 • HONOLULU, HAWAII 96819-1849
TELEPHONE: (808) 531-7741 • FAX: (808) 531-7750 • INTERNET: www.honolulu.gov



ATTILIO K. LEONARDI
FIRE CHIEF
JOHN CLARK
DEPUTY FIRE CHIEF

June 1, 2000

Mr. Glen T. Koyama
Belt Collins Hawaii Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Subject: Environmental Assessment
Proposed Well Outfitting and Installation
Honolulu Board of Water Supply
Manana, Oahu, Hawaii

We received your letter dated May 16, 2000, regarding the above-mentioned project. We have reviewed the documents and have no objections to the project.

Should you have any questions, please call Battalion Chief Kenneth Siiva of our Fire Prevention Bureau at 831-7778.

Sincerely,

ATTILIO K. LEONARDI
Fire Chief

AKL/KS.ms



BELT COLLINS

June 29, 2000
9971.0600 / OOP-183

Mr. Attilio K. Leonard, Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, HI 96819-1869

Dear Chief Leonard:

Environmental Assessment
Proposed Well Installation
Honolulu Board of Water Supply
Manana, Oahu, Hawaii. Tax Map Key 9-7-24: pdr. 2Z

Thank you for your letter of June 1, 2000 responding to our preconsultation notice to prepare an Environmental Assessment for the well installation at Manana. When the Draft EA is completed, we will transmit a copy to you for further review and comment.

Thank you for your participation in this review process.

Sincerely yours,

BELT COLLINS HAWAII LTD.

Glen T. Koyama

GTK:lf
cc: Lester Fujikami, BWS

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HONOLULU, HAWAII 96813 - AREA CODE (808) 528-3111
<http://www.honolulu.gov>
www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR



LEE D. DONOHUE
CHIEF
MICHAEL CARVALHO
ROBERT AU
DEPUTY CHIEFS

OUR REFERENCE CS-DL

May 31, 2000

Mr. Glen T. Koyama
Belt Collins Hawaii Limited
First Floor
680 Ala Moana Boulevard
Honolulu, Hawaii 96813-5406

Dear Mr. Koyama:

Subject: Environmental Assessment
Proposed Well Outfitting and Installation
Honolulu Board of Water Supply
Manana, Oahu, Hawaii

Thank you for the opportunity to review and comment on the subject above.

It should have no significant impact on the facilities or services provided by this department.

If there are any questions, please call me at 529-3255 or Acting Captain Derek Shimatsu of District 3 at 455-9055.

Sincerely,

LEE D. DONOHUE
Chief of Police

By *Eugene Uemura*
EUGENE UEMURA
Assistant Chief
Support Services Bureau



BELT COLLINS

June 29, 2000
9971.0600 / OOP-185

Mr. Eugene Uemura, Assistant Chief
Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, HI 96813

Dear Mr. Uemura:

Environmental Assessment
Proposed Well Installation
Honolulu Board of Water Supply
Manana, Oahu, Hawaii. Tax Map Key 9-7-24; page 22

Thank you for your letter of May 31, 2000 responding to our preconsultation notice to prepare an Environmental Assessment for the well installation at Manana. When the Draft EA is completed, we will transmit a copy to you for further review and comment.

Thank you for your participation in this review process.

Sincerely yours,

BELT COLLINS HAWAII LTD.

Glen T. Koyama

Glen T. Koyama

GTK:lf

cc: Lester Fujikami, BWS

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GTE Hawaiian Tel

Beyond the call

GTE Hawaiian Telephone Company Incorporated
P.O. Box 2200 • Honolulu, HI 96841 • (808) 546-4811

June 14, 2000

Mr. Glen T. Kayama
Belt Collins, Hawaii Ltd.
680 Ala Moana Boulevard, First Floor
Honolulu HI 96813-5406

Dear Mr. Koyama:

Subject: **MANANA EXPLORATORY WELLS, MANANA, HONOLULU, OAHU, HAWAII**

Thank you for the opportunity to review and comment on the Final Environmental Assessment for the proposed Exploratory Wells at Manana.

Based on our review, GTE Hawaiian Telephone Company has no conflicts with the proposed project and will be able to provide telecommunication service to the facility if you so require. GTE Hawaiian Tel also requests the opportunity to review and comment on any detailed electrical construction drawings for your proposed project.

If you have any questions or require assistance in the future on this project, please call Dennis C. Silva at 840-5656.

Very truly yours,

Dennis C. Silva

Dennis C. Silva
Project Engineer
Access Design & Construction

C. C. Nyuha



BELT COLLINS

June 29, 2000
9971.0600 / 00P-190

Mr. Dennis C. Silva, Project Engineer
GTE Hawaiian Tel
P.O. Box 2200
Honolulu, HI 96841

Dear Mr. Silva:

Environmental Assessment
Proposed Well Installation
Honolulu Board of Water Supply
Manana, Oahu, Hawaii. Tax Map Key 9-7-24: por. 2Z

Thank you for your letter of June 14, 2000 responding to our preconsultation notice to prepare an Environmental Assessment for the well installation at Manana. As we prepare the EA, we will address your comments and consider your input for incorporation in the Draft EA. When the Draft EA is completed, we will transmit a copy to you for further review and comment.

Thank you for your participation in this review process.

Sincerely yours,

BELT COLLINS HAWAII LTD.

Glen T. Koyama

Glen T. Koyama

GTK:if

cc: Lester Fujikami, BWS

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APPENDIX B

Manana Well Pump Test Report

January 6, 1999

To: Engineering Branch

From: Planning Branch *bn*

Subject: Test Pumping Results at Manana Exploratory Well (State No. 2458-05)

We recommend an installed capacity of 1390 gpm (2.0 mgd) for this well. The estimated drawdown at this rate is 0.9 feet. The pump intake should be set at -10 feet (msl). We also attach the as-built drawing and data from the step-drawdown and sustained pumping test. We previously forwarded the plumbness and alignment data.

Step-drawdown pumping rates were 607 gpm, 830 gpm, 1020 gpm and 1311 gpm with drawdowns of 0.25 feet, 0.40 feet, 0.54 feet and 0.77 feet respectively. The specific capacity at the proposed rate of 1390 gpm is 1550 gpm/ft. Chloride concentrations varied from 120 ppm to 128 ppm during the step-drawdown test.

We conducted the long term test for 120 hours at an average rate of 1339 gpm. The average drawdown was 0.82 feet. A total of 9,631,550 gallons were pumped. Chloride concentrations increased from 120 ppm to 126 ppm.

We sampled water from five different depths in the open hole to determine if there is a vertical chloride concentration gradient. The samples were all 120 ppm. This indicates that there is not a chloride gradient in the bore hole.

Chloride concentrations in Manana Well are unusually high. Other wells in the area produce water with chloride concentrations of 30 to 60 ppm. We do not know why Manana Well chloride concentrations are higher. This introduces an element of uncertainty in the long term capacity of the well. The rise in chloride concentrations during the long term test may also indicate that there will be an upward trend in chloride concentrations when the well is put into production. If chloride concentrations increase when the well is put into production, the pumpage may have to be decreased. Also, if we find that chloride concentrations are greater at the bottom of the well then we may have to partially backfill the well. This also may mean that we have to decrease pumpage.

If you have any questions, please contact Chester Lao at ext. 5286.

Attachments

KLG:

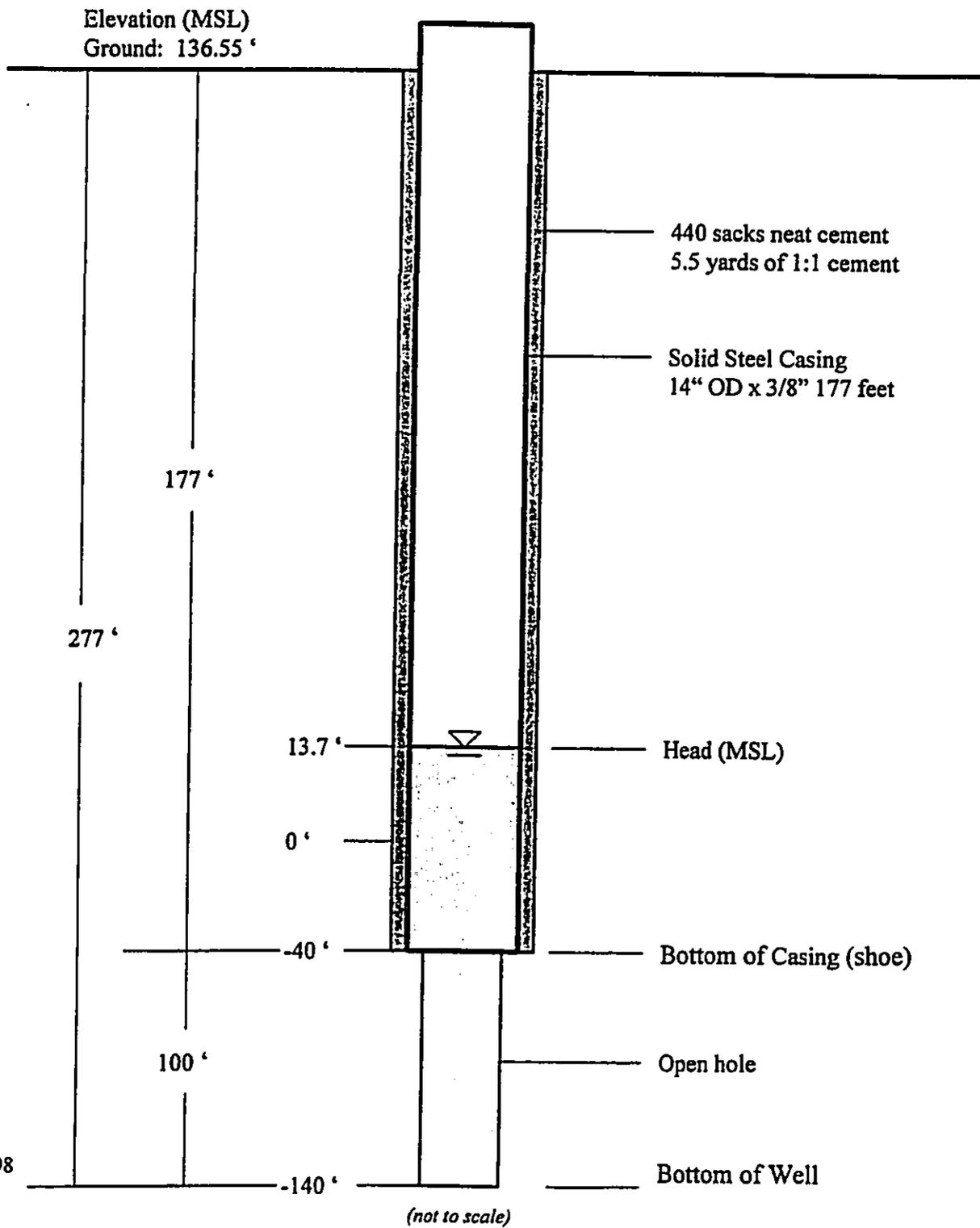
cc: Plant Operations
Long Range Planning
C. Lao

1999 JAN 11 A 10:16

DWS - ENGINEERING

Manana Exploratory Well State No. 2458-05
Pearl City, Oahu, Hawaii
TMK 9-7-24:004

As-Built Section
Drilling Completed October 1, 1998
Drilling Contractor: Roscoe Moss Hawaii, Inc.



Sustained Yield Test - Manana Well

Well no.: 2458-05								
County: Honolulu				drawdown in pumped well				
Well: Manana Well				water level measurements				
ground elev. : 136.55 ft				sounder measurements -- no airline				
Date	time	elapsed time min	Depth to water	draw-down (feet)	Discharge (gpm)	Chloride (ppm)	Temp deg F	Remarks
10/14/98	0931		125.62					
	1000		125.62					
	1015		125.63	0.00				
	1018	0						start test
	1022	4	126.35	0.72	1377			
	1026	8	126.34	0.71	1365		67.5	
	1031	13			1361	120	67.5	sample # 1
	1043	25	126.35	0.72	1354			
	1200	102	126.38	0.75				
	1400	222	126.38	0.75				
	1600	342	126.39	0.76				
	1800	462	126.39	0.76				
	2000	582	126.46	0.83				
	2200	702	126.39	0.76				
	2400	822	126.40	0.77				
10/15/98	0200	942	126.40	0.77				
	0400	1062	126.40	0.77				
	0600	1182	126.45	0.82				
	0800	1302	126.50	0.87				
	0908	1370	126.49	0.86				overnight rate 1339 gpm
	0925	1387					67.5	
	0930	1392	126.49	0.86	1341	120		sample # 2
	1000	1422	126.49	0.86				
	1200	1542	126.45	0.82				
	1400	1662	126.45	0.82				
	1600	1782	126.48	0.85				
	1800	1902	126.45	0.82				
	2000	2022	126.42	0.79				
	2200	2142	126.40	0.77				
	2400	2262	126.40	0.77				
10/16/98	0200	2382	126.42	0.79				
	0400	2502	126.48	0.85				
	0600	2622	126.42	0.79				
	0800	2742	126.40	0.77				
	1000	2862	126.44	0.81				
	1006	2868			1342		67.5	overnight rate 1339 gpm
	1016	2878	126.44	0.81	1337	121		sample # 3
	1025	2887						conductivity 516 micromhos
	1200	2982	126.44	0.81				
	1400	3102	126.50	0.87				
	1600	3222	126.54	0.91				
	1800	3342	126.53	0.90				
	2000	3462	126.55	0.92				
	2200	3582	126.53	0.90				
	2400	3702	126.53	0.90				
10/17/98	0200	3822	126.53	0.90				
	0400	3942	126.53	0.90				

Step Draw Down Test								
County: Honolulu			Well No. 2458-05					
Well:	Manana Well		drawdown in pumping well					
ground elevation: 136.55 ft			10/9/98		sounding measurements no airline			
time	elapsed time min	Depth to water(ft)	draw-down (feet)	head (feet)	Dis-charge (gpm)	Chloride (ppm)	Temp deg F	Remarks
0924		125.59	0.00	13.78	0			static water level
0935		125.59	0.00	13.78	0			
0940	0							start test
0944	4	125.83	0.24	13.54	638			
0949	9				631	124		sample #1
0959	19	125.83	0.24	13.54			67.4	
1009	29	125.84	0.25	13.53	622		67.4	
1019	39	125.84	0.25	13.53			67.5	
1025	45				625	124	67.5	sample #2
1027	47	125.84	0.25	13.53				
1029	49							change rate av rate 607 gpm
1035	55	126.00	0.41	13.37	848			
1039	59				825		67.4	
1047	67	125.98	0.39	13.39	821		67.4	
1057	77	125.99	0.40	13.38	820			
1107	87	125.98	0.39	13.39			67.5	
1115	95	125.98	0.39	13.39	817	120		sample #3
1116	96							change rate av rate 830 gpm
1121	101	126.12	0.53	13.25			67.4	
1131	111	126.13	0.54	13.24	1027		67.4	
1142	122	126.14	0.55	13.23	1025		67.4	
1154	134	126.13	0.54	13.24				
1156	136				1021	124	67.4	sample #4
1159	139	126.13	0.54	13.24				
1200	140							change rate av rate 1020 gpm
1202	142	126.37	0.78	13.00	1279		67.5	
1212	152	126.35	0.76	13.02	1302		67.5	
1222	162	126.36	0.77	13.01	1303		67.5	
1233	173	126.37	0.78	13.00			67.4	
1246	186	126.36	0.77	13.01	1303	128		sample #5
1247	187							stop pumping av rate 1311 gpm
1249	189	125.68	0.09	13.69				
1250	190	125.68	0.09	13.69				
1251	191	125.68	0.09	13.69				
1253	193	125.69	0.10	13.68				
1256	196	125.69	0.10	13.68				
1307	207	125.69	0.10	13.68				
Total amount pumped:			175,250		gallons			

step test