

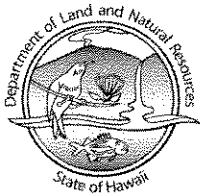
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LAND
STATE PARKS

JUN 24 2004

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

TO: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control (OEQC)

FROM: *for* Eric T. Hirano, Chief Engineer *Andrew M. Monden*

SUBJECT: **Final Environmental Assessment (FEA) for Job No.
G23CM11A, Central Maui (Maui Meadows) Exploratory Well,
TMK: (2) 2-1-08: 057, Wailea, District of Makawao, Maui**

The Department of Land and Natural Resources has reviewed the comments received during the 30-day public comment period, which began on April 23, 2004. The agency has determined that this project will not have significant environmental effects and has issued a Finding of No Significant Impact (FONSI). Please publish this notice in the July 8, 2004 issue of the Environmental Notice.

We have enclosed a completed OEQC Publication Form and four (4) copies of the FEA. If you have any questions, please call Andrew Monden at 587-0229.

DI:ek
Enclosure

2004-07-08 FONSI

JUL 8 2004

CENTRAL MAUI (MAUI MEADOWS) EXPLORATORY WELL

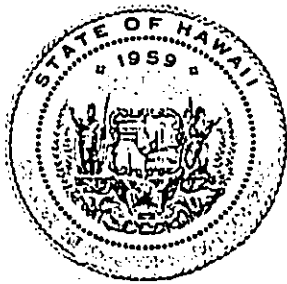
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FINAL ENVIRONMENTAL ASSESSMENT

Prepared in Accordance with Chapter 343, Hawaii Revised Statutes

**Central Maui (Maui Meadows)
Exploratory Well**

Wailea, District of Makawao, Maui, Hawai'i



June 2004

PREPARED FOR:

State of Hawai'i
Department of Land and Natural Resources
Engineering Division
1151 Punchbowl Street
Honolulu, Hawai'i 96813

PREPARED BY:

R. M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawai'i 96817-4941

119607-0P

FINAL ENVIRONMENTAL ASSESSMENT

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1-19607-0P

TABLE OF CONTENTS

Project Summary	1
Chapter 1 Introduction, Purpose, Schedule and Cost	2
1.1 Introduction	2
1.2 Purpose of the Environmental Assessment	2
1.3 Purpose and Need for the Project	4
1.4 Project Schedule and Cost	4
Chapter 2 Existing Conditions, Proposed Action and Alternatives Considered	5
2.1 Project Background	5
2.2 Proposed Action	5
2.2.1 Evaluation Criteria	5
2.2.2 Exploratory Well Location	6
2.2.3 Technical Characteristics	6
2.2.4 Construction and Testing	10
2.3 Alternatives Considered	11
2.3.1 Alternative Exploratory Well Sites	11
2.4 Delayed Action Alternative	17
2.5 No Action Alternative	17
Chapter 3 Environmental Setting, Potential Impacts, and Mitigation	18
3.1 Topography, Climate and Rainfall	18
3.1.1 Topography	18
3.1.2 Climate and Rainfall	18
3.1.3 Project Impacts	19
3.1.4 Mitigation Measures	19
3.2 Geology and Soils	19
3.2.1 Geology	19
3.2.2 Soils	19
3.2.3 Project Impacts	21
3.2.4 Mitigative Measures	21

	<u>Page</u>
3.3	Wastewater 22
3.3.1	Wastewater Disposal 22
3.3.2	Project Impacts 22
3.3.3	Mitigative Measures 22
3.4	Water 22
3.4.1	Surface Water 22
3.4.2	Project Impacts 24
3.4.3	Mitigative Measures 24
3.4.4	Groundwater 24
3.4.5	Project Impacts 24
3.4.6	Mitigative Measures 26
3.5	Public Utilities and Services 26
3.5.1	Electrical Service 26
3.5.2	Project Impacts 26
3.5.3	Mitigative Measures 26
3.5.4	Telephone Service 27
3.5.5	Project Impacts 27
3.5.6	Mitigative Measures 27
3.5.7	Police Protection and Fire Control 27
3.5.8	Project Impacts 27
3.5.9	Mitigative Measures 27
3.6	Natural Hazards 28
3.6.1	Seismic Events (Earthquakes) 28
3.6.2	Flood Zones 28
3.6.3	Hurricanes 28
3.6.4	Project Impacts 28
3.6.5	Mitigative Measures 30
3.7	Biological Resources 30
3.7.1	Botanical and Faunal Resources 30
3.7.3	Project Impacts 31
3.7.4	Mitigative Measures 31

	<u>Page</u>
3.8 Social and Economic Characteristics	32
3.8.1 Regional Overview	32
3.8.2 Regional Population	32
3.8.3 Household Income	33
3.8.4 Home Prices	34
3.8.5 Demographics of the Wailea-Makena Community	34
3.8.6 Project Impacts	35
3.8.7 Mitigative Measures	36
3.10 Land Use	36
3.10.1 Zoning and Land Tenure	36
3.10.2 Project Impacts	36
3.10.3 Mitigative Measures	36
3.11 Roadways, Access and Traffic	37
3.11.1 Roadways, Access and Traffic	37
3.11.2 Project Impacts	37
3.11.3 Mitigative Measures	37
3.12 Noise Impacts	38
3.12.1 Noise	38
3.12.2 Project Impacts	38
3.12.3 Mitigative Measures	38
3.13 Air Quality	39
3.13.1 Air Quality	39
3.13.2 Project Impacts	39
3.13.3 Mitigative Measures	40
3.14 Visual and Recreational Resources	41
3.14.1 Visual and Recreational Resources	41
3.14.2 Project Impacts	41
3.14.3 Mitigative measures	42
3.15 Historic, Cultural and Archaeological Resources	42
3.15.1 Historic and Archaeological Resources	42
3.15.2 Cultural Resources and Traditional Cultural Practices	42
3.15.3 Project Impacts	43

	<u>Page</u>
3.15.4 Mitigative Measures	43
Chapter 4 Relationship to Land Use Policies and Controls of the Affected Area	45
4.1 Federal Laws and Regulations	45
4.1.1 Safe Drinking Water Act	45
4.1.2 Endangered Species Act	45
4.1.3 Historic Preservation Act (16 USC, Section 470(F))	46
4.1.4 Federal Emergency Management Agency - Flood Insurance Rate Map ..	46
4.1.5 Environmental Justice	46
4.2 State of Hawaii Land Use Policies and Controls	47
4.2.1 Hawaii State Plan	47
4.2.2 State Water Code	48
4.2.3 State Land Use Commission	49
4.2.4 Agricultural Lands of Importance to the State of Hawaii (ALISH)	49
4.3 County of Maui Land Use Policies and Controls	50
4.3.1 County of Maui General Plan	50
4.3.2 Makawao-Pukalani-Kula Community Plan	50
4.3.3 County of Maui Water Use and Development Plan (1990)	51
Chapter 5 Necessary Permits and Approvals	52
5.1 State of Hawaii	52
5.1.1 Commission on Water Resource Management	52
5.1.2 Department of Health	52
5.2 County of Maui	53
5.2.1 Construction- and Planning-Related Permits	53
Chapter 6 Organizations and Agencies Consulted During Pre-Consultation and/or the 30-day DEA Review Period	54
6.1 Federal Agencies	54

	<u>Page</u>
6.2 State Agencies	54
6.3 County of Maui	54
6.4 Private Organizations and Elected Officials	55
Chapter 7 Determination	56
7.1 Overview	56
7.2 Significance Criteria	56
7.3 Findings	60
Chapter 8 Comments and Responses to the Draft EA	61
References	62

LIST OF FIGURES

Figure 1-1	Project Location	3
Figure 2-1	Vicinity Map	7
Figure 2-2	Conceptual Site Plan	8
Figure 2-3	Exploratory Well	9
Figure 2-4	Exploratory Well Sites, Makawao Aquifer	12
Figure 2-5	Exploratory Well Site, Haiku Aquifer	14
Figure 2-6	Exploratory Well Sites, Paia and Kamaole Aquifers	16
Figure 3-1	Soils Map	20
Figure 3-2	Surface Hydrology	23
Figure 3-3	Aquifers of the Island of Maui	25
Figure 3-4	Flood Zone Map	29

Project Summary

Project:	Central Maui (Maui Meadows) Exploratory Well
Applicant:	State of Hawaii, Department of Land and Natural Resources Engineering Division 1151 Punchbowl Street Honolulu, Hawai'i 96813
Accepting Authority:	State of Hawaii, Department of Land and Natural Resources
Agent:	R. M. Towill Corporation 420 Waiakamilo Road, Suite 411, Honolulu, Hawaii 96817 Contact: James Yamamoto, Vice President Phone: (808) 842-1133 / Facsimile: (808) 842-1937
Location:	Maui Meadows, Wailea, District of Makawao, Maui
TMK:	(2) 2-1-08: 057
Size:	22,869 square feet (0.53 acres)
Property Owner:	County of Maui, Department of Water Supply
Existing Land Uses:	Vacant Water Tank Site; access road leading from Maui Meadows subdivision to the project site.
Proposed Action:	Construct an exploratory well in the project area to assess the potential for development into a production well for domestic potable consumption.
Project Purpose:	Provide hydrogeological information to evaluate the feasibility of locating a well to serve State of Hawaii projects on Maui.
Major Impacts:	None Anticipated
Required Permits:	<ul style="list-style-type: none">• Well Construction Permit - Department of Land and Natural Resources, Commission on Water Resource Management• Construction Noise Permit - Department of Health, Noise, Radiation and Indoor Air Quality Branch• National Pollutant Discharge Elimination System (NPDES), general permit authorizing discharges of treated process water associated with well drilling activities - State Department of Health, Clean Water Branch (DOH-CWB) (if required)• Grubbing, Grading and Stockpiling Permit (roadway rehabilitation), Site Plan Approval (well foundation) - County of Maui, Department of Public Works and Environmental Management

Chapter 1

Introduction, Purpose, Schedule and Cost

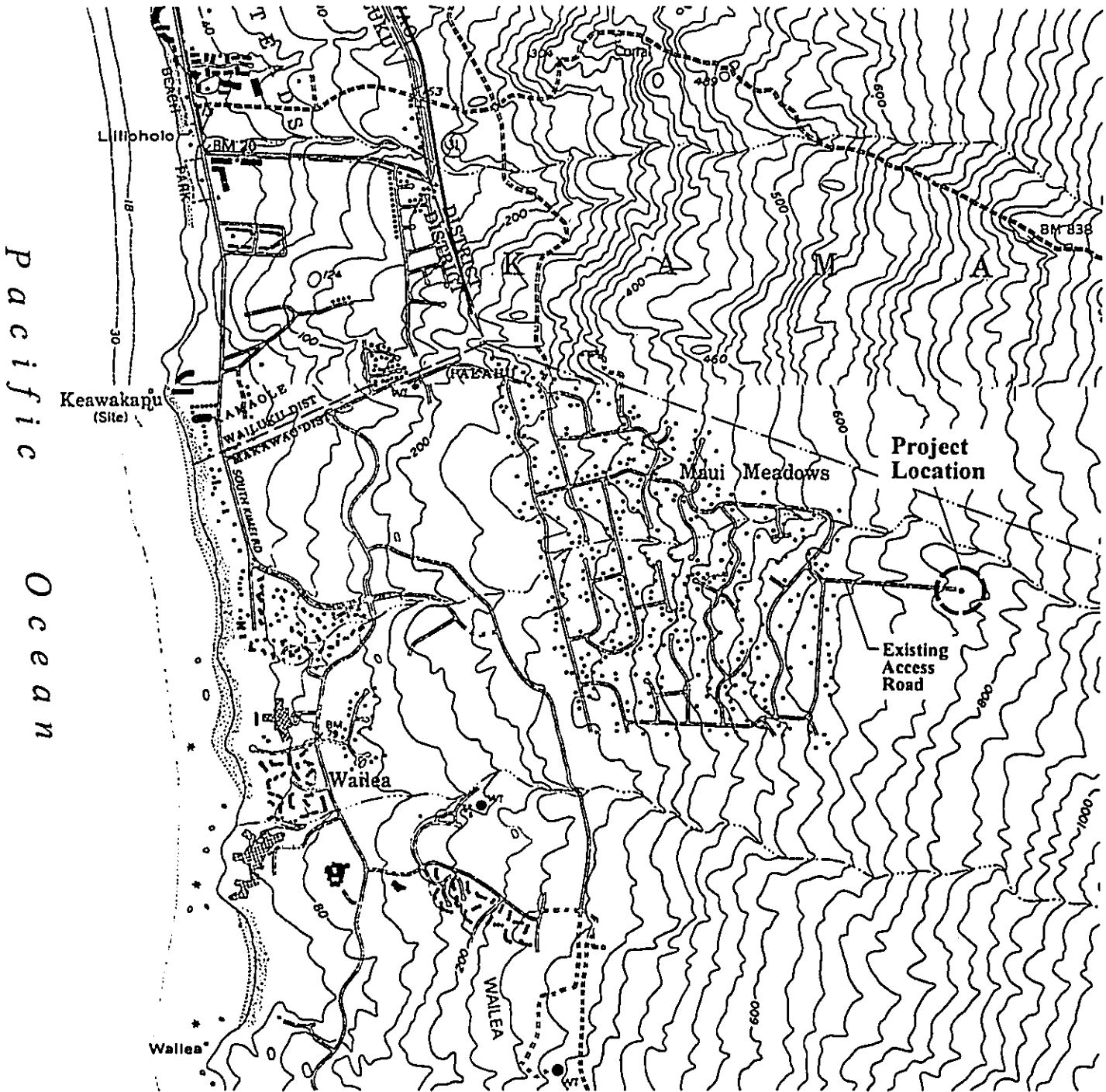
1.1 Introduction

The State of Hawaii, Department of Land and Natural Resources (DLNR), proposes to drill, case and test an exploratory well in the Makawao District of Maui, ahupua'a of Paeahu (Figure 1-1). The proposed exploratory well will be used to estimate the quantity and quality of groundwater resources available at this site. If hydrogeological testing shows the desired capacity of a minimum of 0.3 to 0.5 mgd (million gallons per day) potential production, and exhibits acceptable water quality, the proposed Central Maui (Maui Meadows) Exploratory Well will be developed as a production well, and conveyed to the County of Maui, Department of Water Supply (DWS), to serve as a source for the Central Maui water service system.

1.2 Purpose of the Environmental Assessment

Because public (State of Hawaii) funds will be used, construction of the Central Maui (Maui Meadows) Exploratory Well is subject to preparation of environmental documentation in accordance with Chapter 200, Title 11, Hawaii Administrative Rules (HAR), and Chapter 343, Hawaii Revised Statutes (HRS). This Environmental Assessment (EA) focuses on the potential environmental impacts directly associated with the drilling, casing, and testing of the exploratory well. This includes installation of temporary pumps, piping and appurtenances. The Final Environmental Assessment and accompanying Finding of No Significant Impact (FONSI) will be filed with the Office of Environmental Quality Control (OEQC) by the State of Hawaii, Department of Land and Natural Resources.

If the exploratory well yields results indicate it would be a successful production well, the impacts of a permanent well would be addressed in a separate EA. The analysis of impact on the sustainable yield of the underlying Kamaole aquifer will be addressed at that time.



Maui Vicinity Map

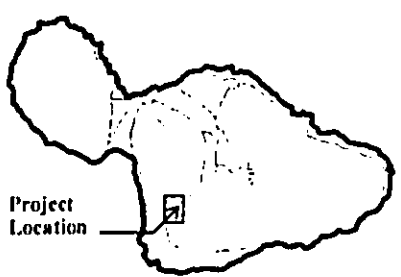
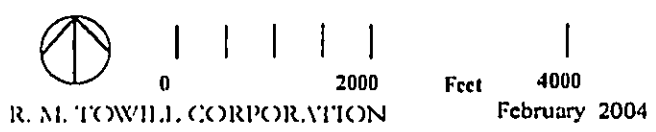


FIGURE 1-1
PROJECT LOCATION
 Central Maui Exploratory Well
 Makawao District, Maui, Hawaii
 State of Hawaii
 Department of Land and Natural Resources



1.3 Purpose and Need for the Project

The purpose of the project is to develop an exploratory well which, if found to be hydrogeologically favorable, would serve as a future production well providing a potable water source for State of Hawaii projects. These projects would include schools, State offices, health care, and related State facilities and projects within the Central Maui region. Without the development of a new potable water source, projects which are already budgeted would be postponed. DWS has agreed to permit DLNR to construct an exploratory well on their existing Maui Meadows No. 3 Tank Site.

1.4 Project Schedule and Cost

Once project approvals are obtained, the project will take approximately 9 months to complete. Administration of project funds will be by the Department of Land and Natural Resources. Estimated development costs for the exploratory well at the preferred site are approximately \$0.5 million (2004 dollars). As stated, the scope of this Environmental Assessment will be limited to construction of the exploratory well at the preferred location.

Chapter 2

Existing Conditions, Proposed Action and Alternatives Considered

2.1 Project Background

Over the past several years, DWS has been in discussion with the applicant, the State Department of Land and Natural Resources, concerning development of a new well source in Central Maui. In 2003, four possible exploratory well sites were identified in the Makawao Aquifer System and one in the Haiku Aquifer System. However, none of the five well sites are or can be made available for water or water credits in the Central Maui area within the schedule required for this project. As a result, a search for a potential well site within the Kamaole Aquifer was performed. Although the proposed exploratory well site is marginal compared to other geographic areas, it is proposed as the best current solution to supplying water for State of Hawaii projects.

Use of the site is consistent with the County of Maui policy to allow transfer of water from the source (well) area to another aquifer area by government agencies (e.g., DLNR), if the new source is developed in areas immediately connected to the Central Maui water system. The proposed exploratory well site meets both of these criteria.

2.2 Proposed Action

2.2.1 Evaluation Criteria

The exploratory well site selection criteria included:

1. Location on DWS property.
2. Location on a site with infrastructure connected to the Central Maui Water System.
3. A 50% or less chance of successfully locating a 200 - 350 gpm potable well source having a chloride content of 180 to 250 mg/L.

2.2.2 Exploratory Well Location

The project site is on the existing Maui Meadows No. 3 Tank Site, identified as Tax Map Key (TMK): (2) 2-1-8: parcel 57. The site is owned by DWS, which also holds an easement for the access road leading to the site. The easement for the access road is located on TMK: (2) 2-1-8: parcel 01 (owned by Ulupalakua Ranch). The access road is approximately 1,900 feet long and approximately 34 feet wide, with a designated area of 1.426 acres. The access road is connected to Luana Drive in the Maui Meadows subdivision and is restricted to use by DWS for the purpose of access to the site (Figure 2-1 and Figure 2-2).

The site has space for construction of an exploratory well because an abandoned steel tank was previously removed from the site (Personal communication, Daniel Lum, P.E., Water Resource Associates, Inc., January 2004). Further, while the current proposed action will only involve development of an exploratory well, the tank site provides a direct connection to the Central Maui Water System. Therefore, should future development of the site to a production well be desired, requirements for connection to the Maui County water system will be minimal.

The Maui Meadows subdivision is located downslope from the DWS tank site and consists of approximately 700 hillside view lots overlooking the Wailea Resort on Maui's south coastline. Many of the homes are used for vacation rentals and vacation properties for out-of-state owners.

2.2.3 Technical Characteristics

The anticipated maximum depth of the proposed exploratory well is approximately 800 feet below grade (WRA, 2004). The exploratory well will be steel cased with 20 feet of perforated steel at the bottom. The exploratory well is proposed to be a single bore, which will extend to an area below mean sea level (msl), where the well will extract water from below underlying basalt. The bore will contain a 14-inch outer-diameter (OD) steel casing (Figure 2-3).

The Well intake will begin near msl, and will draw from the full length of the uncased bore. If the exploratory well is converted in the future to production status, the yield is expected to be approximately 0.5 mgd.

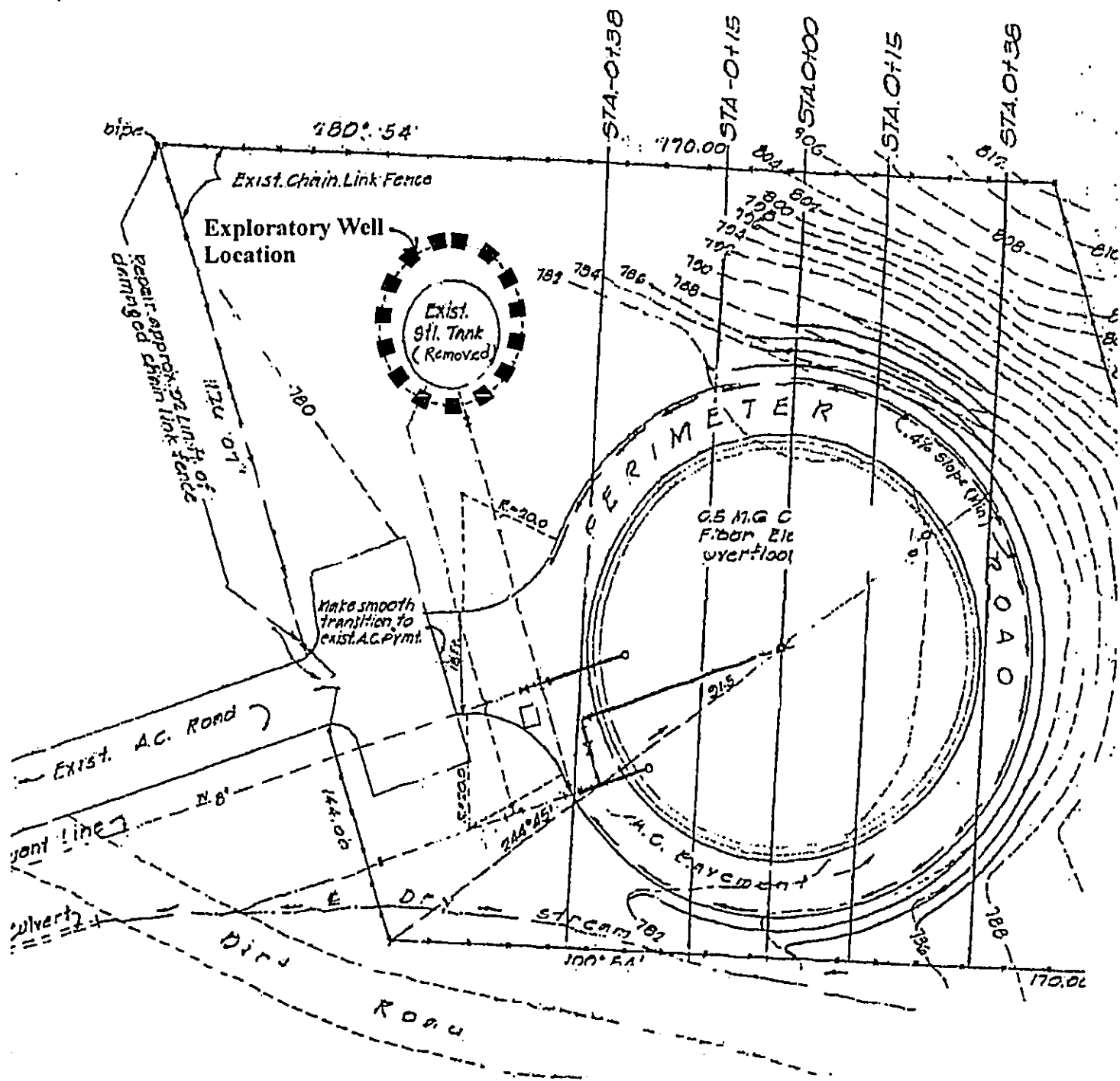


FIGURE 2-2
 CONCEPTUAL SITE PLAN
 Central Maui Exploratory Well
 Makawao District, Maui, Hawaii
 State of Hawaii
 Department of Land and Natural Resources

No Scale

R. M. TOWILL CORPORATION

February 2004

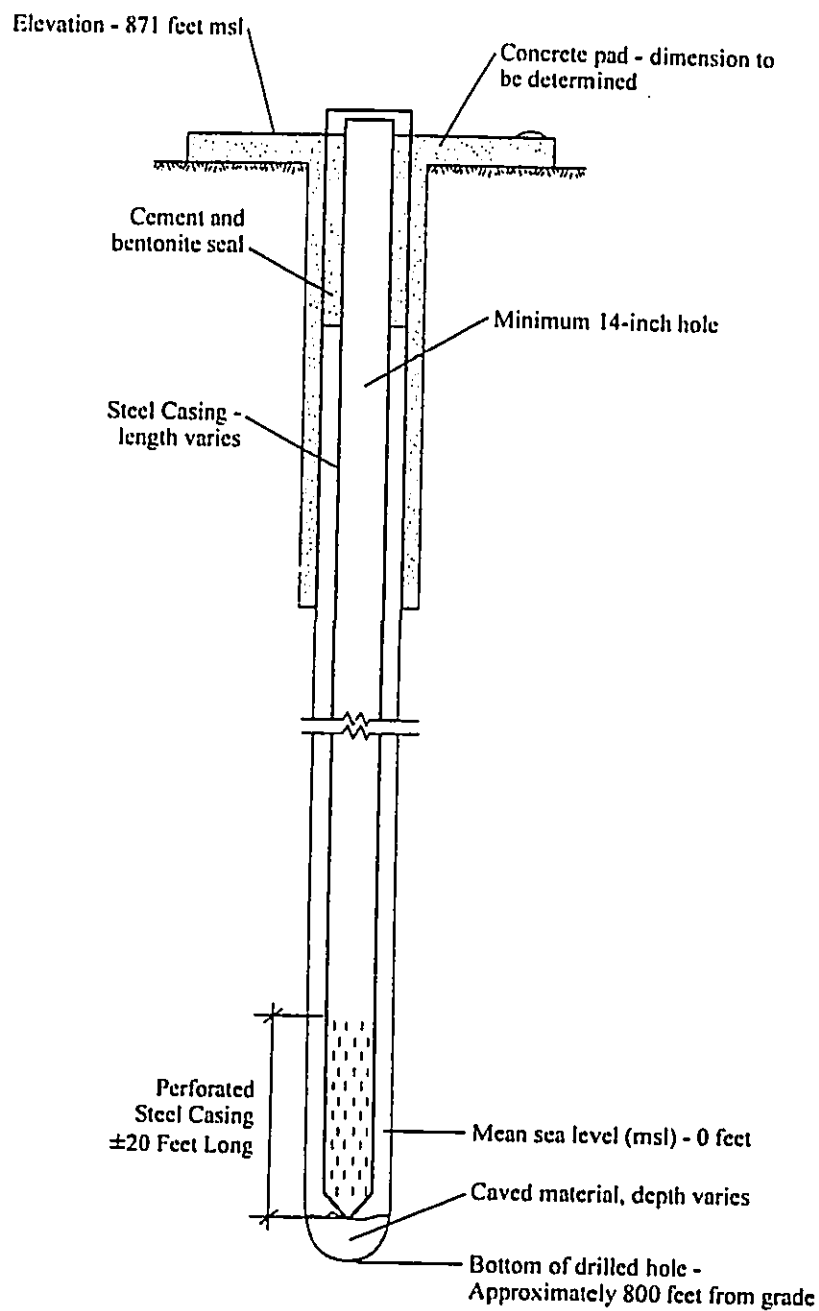


FIGURE 2-3
EXPLORATORY WELL
 Central Maui Exploratory Well
 Makawao District, Maui, Hawaii
 State of Hawaii
 Department of Land and Natural Resources

No Scale

2.2.4 Construction and Testing

The major components of exploratory well construction are site preparation, installation of casing, grouting and pumps, well testing, and site demobilization. The project will require use of a small area within the existing 0.5 acre tank site. Construction and drilling equipment will be mobilized to the site through Luana Drive, and onto the existing asphaltic pavement access road.

The exploratory well site is already cleared, providing room for drilling operations and storage of all necessary materials and equipment. All excavated material from clearing and drilling will be stored on-site during the exploratory phase of well development in an approximately 30-foot by 30-foot area set aside for that purpose. Following drilling, the well will be cased and temporary pipelines and electrical hookups will be installed.

Drainage due to flushing and testing of the exploratory well will be conveyed via flexible or manifold discharge hose to the adjacent parcel (TMK: (2) 2-1-8: parcel 01), with permission from the landowner, Ulupalakua Ranch, or into the County drainage system that starts at the site and drains into the existing Maui Meadows storm drain system.

When drilling is completed, a yield drawdown test will be performed. A submersible pump may be used for testing purposes. Power for the pump will be provided by a trailer-mounted portable generator. The yield drawdown test will be performed at a rate of 100 to 500 gallons per minute. Following the drawdown test, a long-term constant rate pumping test will be conducted for a minimum period of five days at a rate determined by the yield drawdown test.

In addition to water table drawdown measurements, the quality of the water will be tested. If test results are favorable and a decision is made to move forward with the production phase, another EA will be prepared to cover that phase.

2.3 Alternatives Considered

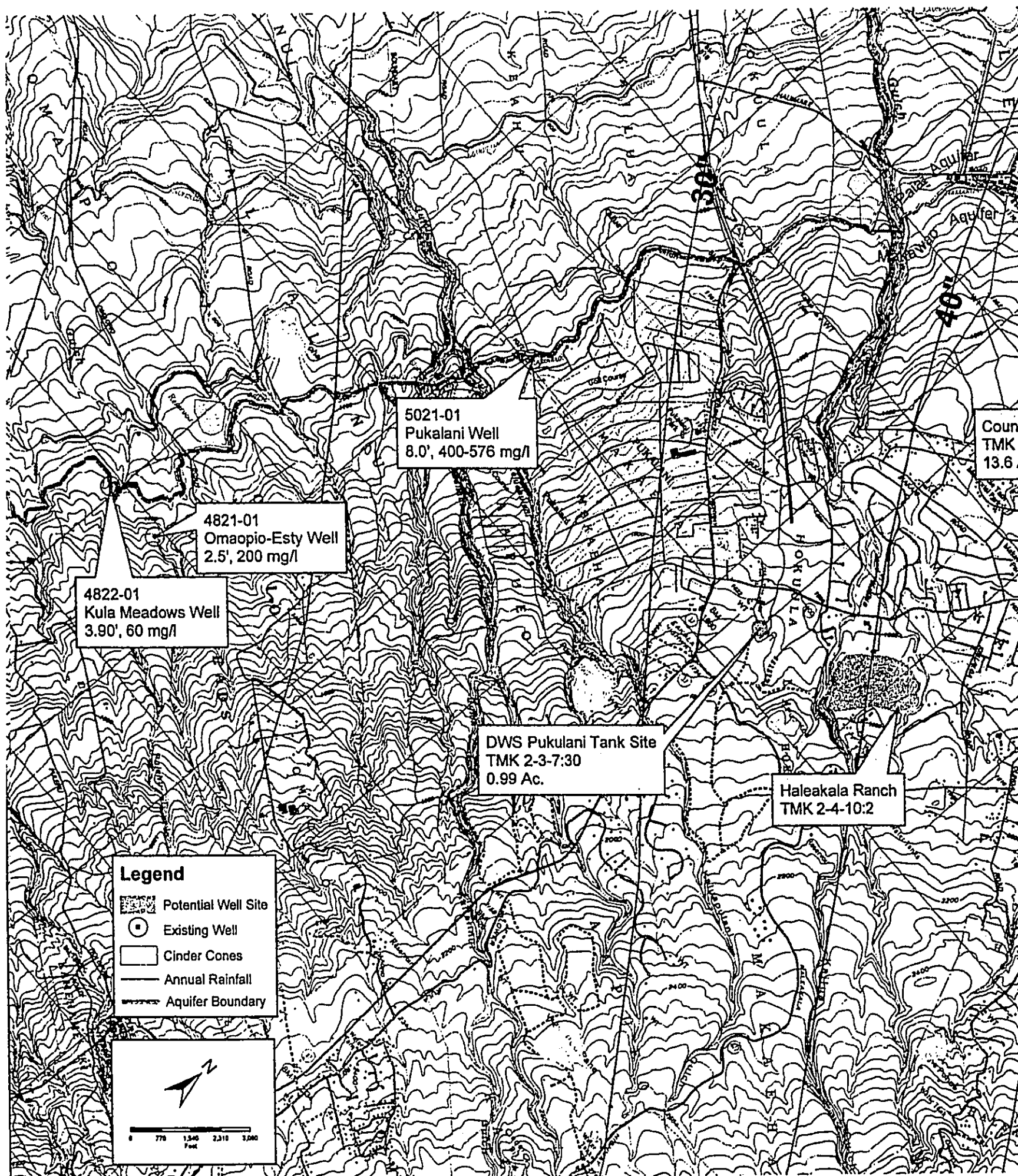
2.3.1 Alternative Exploratory Well Sites

Aquifer systems evaluated in the exploratory well site selection analysis, and the reasons why they were not selected for further consideration, included the following (Water Resource Associates, Inc., April & October 2003):

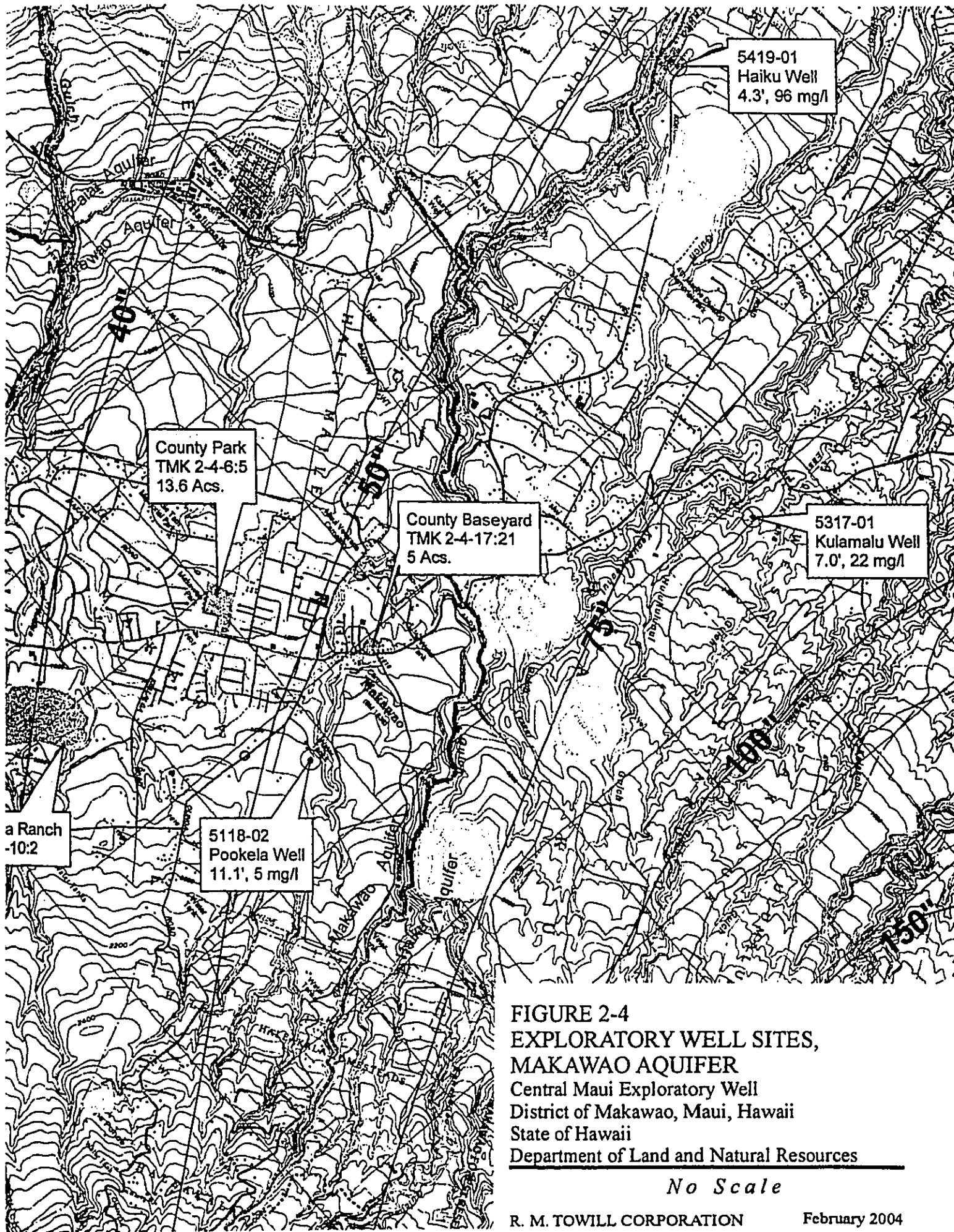
Makawao Aquifer System (Water Resource Associates, Inc., April 7, 2003). The time and cost to construct the infrastructure to accomplish this connection are the main reasons the Makawao Aquifer System sources were not selected for further consideration. Numerous well sites below the 1,800-foot elevation were considered within the Makawao Aquifer. Although they have excellent capacity, those sources are not yet connected to the Central Maui Water System. These sites were rejected due to the Maui County Administration and DWS accepting as a County ordinance, the Makawao-Pukalani-Kula Community Plan. The Community Plan restricts the transport of water developed in this area to water required for agricultural uses only.

The sites are shown in **Figure 2-4** and listed below, along with a description and the reasons they were rejected from consideration as Central Maui (Maui Meadows) Exploratory Well sites at this time (Water Resource Associates, Inc., 2003):

- **Haleakala Ranch (TMK 2-4-10:2)**
This site is located on a large parcel of land owned by Haleakala Ranch. According to maps, there does not appear to be any existing residential development on site. Hydrologically, the site is favorable for locating a 1 to 2 mgd well source at an elevation between 1,640 and 1,760 msl., slightly lower than Maui County's new Pookela Well located at 1,800 feet. As noted, this site was rejected because of the time and cost for development of infrastructure for use of this site.



Prepared by: Water Resource Associates, Honolulu, Hawaii, February 2003



- Pukalani Tank Site (TMK 2-3-7:30)

This site is located approximately 3,000 to 4,000 feet west of the Haleakala Ranch site and consists of a 0.99 acre tank site owned by the Department of Water Supply. The elevation is approximately 1,680 feet. Hydrogeologically, the site lies downgradient of two cinder cones (Puu O Weli and Puu Koa) which may be associated with subsurface dikes impeding groundwater recharge.
- County Park (TMK 2-4-6:5)

This site is located approximately 4,000 feet southwest of the County's Pookela Well and consists of a 13.6 acre park parcel. The elevation of this site is approximately 1,560 to 1,600 feet. Hydrogeologically, this site is favorable for developing a 1 to 2 mgd well source. This site has a Department of Health regulatory constraint - the "1000 ft. rule," or that a potable well cannot be developed within 1,000 feet of non-sewered residences.
- County Base Yard (TMK 2-4-17:2 1)

This site is located approximately 3,000 feet northwest of the County's Pookela Well and consists of a 5-acre parcel. Although this site presumably lies hydrologically downgradient of the Pookela Well, it is estimated that a well located at this site could potentially produce 1 to 1.5 mgd. The elevation of this site is approximately 1,620 feet. This site has a Department of Health regulatory constraint - the "1000 ft. rule," or that a potable well cannot be developed within 1,000 feet of non-sewered residences.

Haiku Aquifer System (Water Resource Associates, Inc., April 2003). One exploratory well site was considered within the Haiku Aquifer System: Ulumalu Mauka (TMK 2-8-01:68, **Figure 2-5**). This site is located on a parcel of privately owned land belonging to John M. Souza, based upon tax maps at hand. This site is located within Haleakala's northwest rift zone in an area that receives an average annual rainfall of 75 to 150 inches a year, making it a water-rich area. Prospects for locating a 1 to 2 mgd potable well source are favorable. This site is located approximately one mile northeast of the successful Kulamalu Well (53 17-01) which taps a basal aquifer having a head of 7.0 ft. and a chloride content of 22 mg/L. The elevation of this site is approximately 1,200 feet.

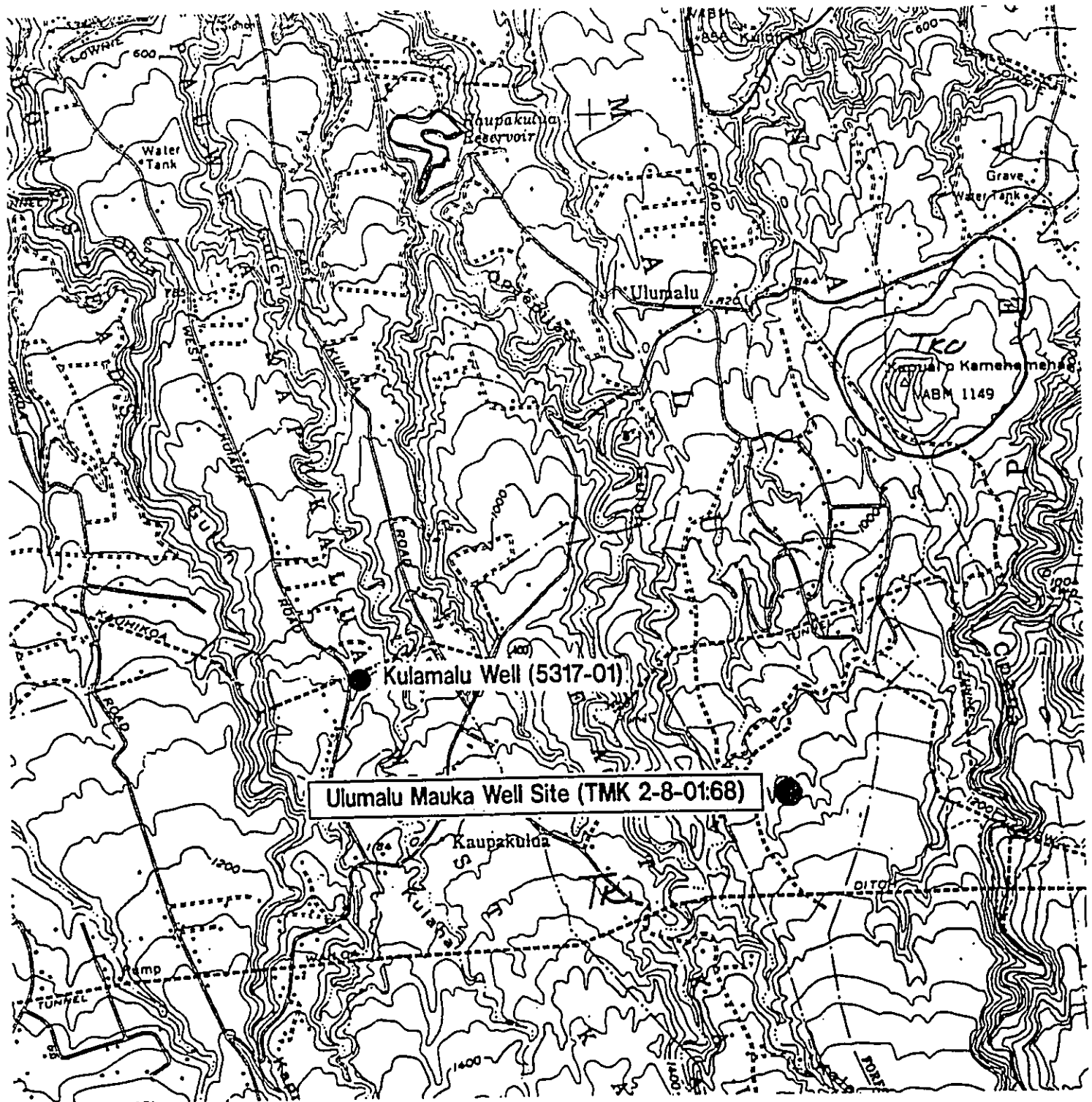


FIGURE 2-5
 ALTERNATIVE EXPLORATORY WELL
 SITE, HAIKU AQUIFER
 Central Maui Exploratory Well
 District of Makawao, Maui, Hawaii
 State of Hawaii
 Department of Land and Natural Resources

No Scale

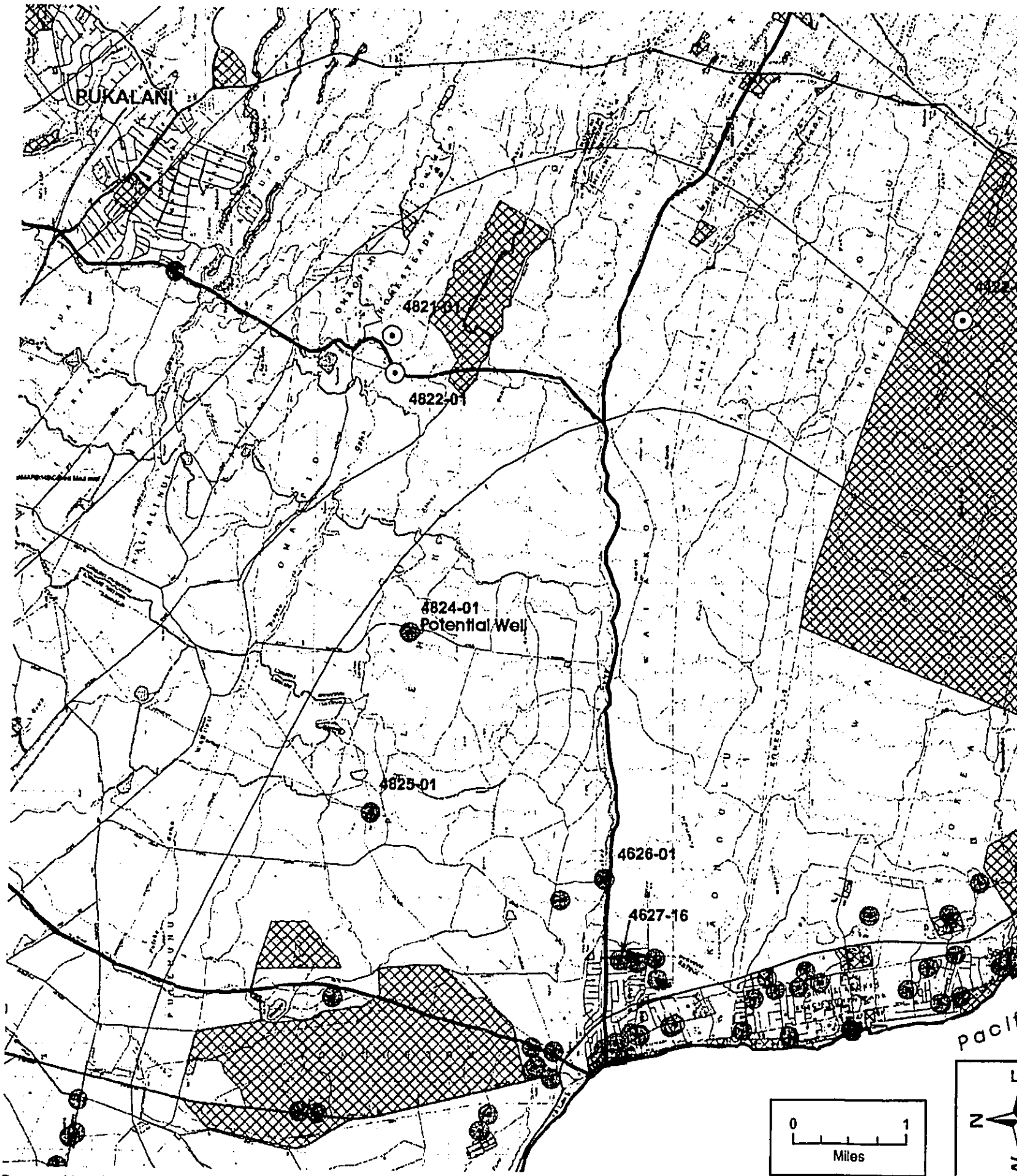
This site is constrained from development because the transport of water developed in this system is in litigation.

Iao Aquifer System. This system was considered, but rejected because it was designated a Water Management Area by the Commission on Water Resource Management on July 15, 2003.

Waikapu Aquifer System. This system was considered for a potential well site, but rejected primarily because of its potential hydrologic connection with the Iao Aquifer System. The site is also remote from the existing County DWS water system.

Paia Aquifer System. Information for this system indicated that existing well data showed no significant occurrence of potable water. Two wells, suitable for individual or small uses, exist in the southeast part of the aquifer system in an area 5 to 6 miles from Kihei, the nearest location of the Central Maui water system.

One potential exploratory well site was considered in the Paia Aquifer System (**Figure 2-6**): the Kihei Exploratory Well (4824-01, TMK: 2-5-01:10). This well site, located at Pulehu approximately 1½ miles from Pulehu Camp, has the potential to be developed but may be benefitting from recharge due to irrigation from the East Maui Irrigation system. The well is on state-owned land. The well was once expected to produce 700 gpm with a chloride content of 50 to 70 mg/L. The well is subject to recharge from the East Maui Irrigation System (EMI). Due to changes in present irrigation practices the existing capacity is not expected to be 700 gpm. The ultimate sustained capacity of the well is dependent on continued irrigation by EMI. The cessation of irrigation by EMI could reduce the well capacity to well under 100 gpm.



Prepared by: Water Resource Associates, Honolulu, Hawaii, June 2003

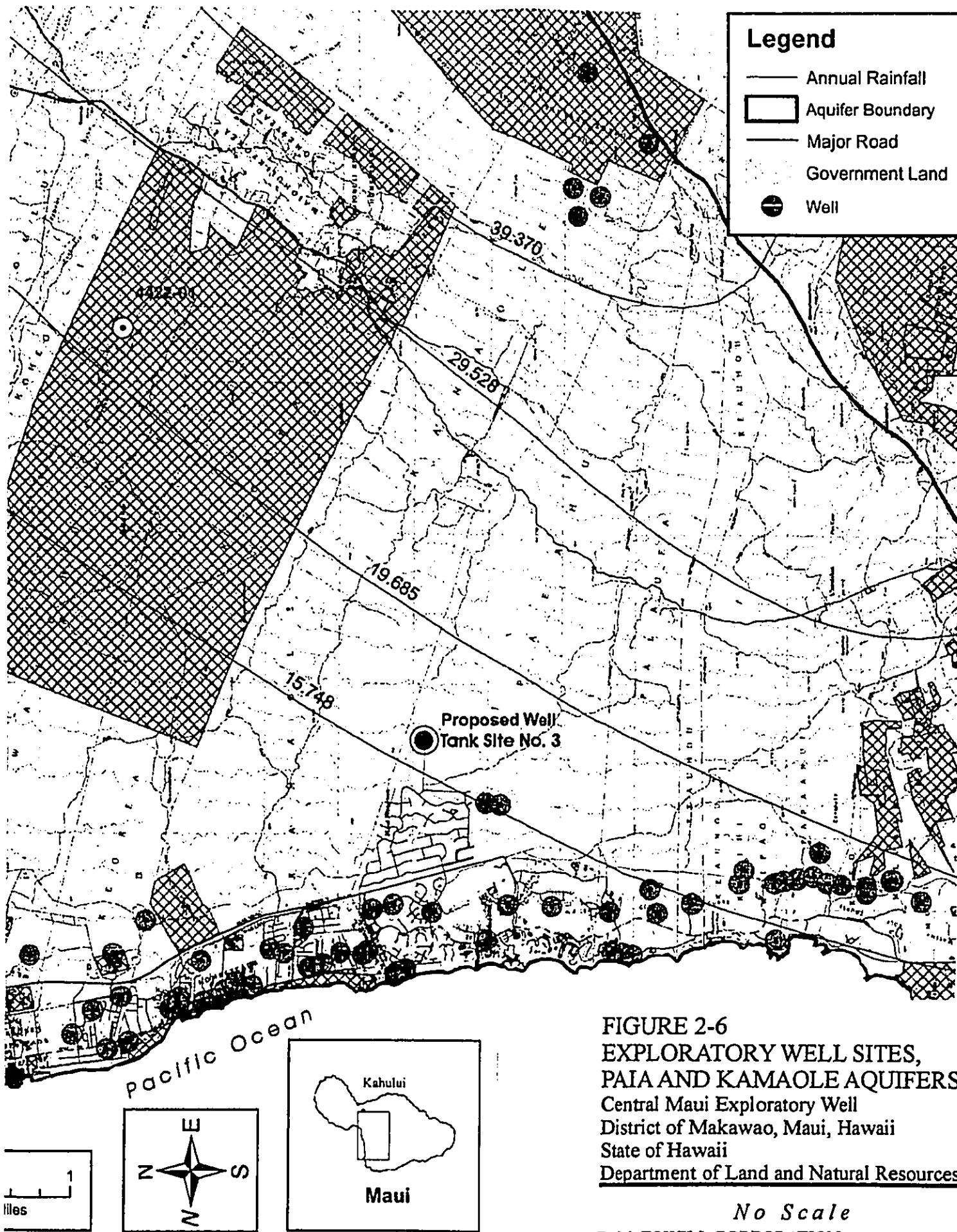


FIGURE 2-6
EXPLORATORY WELL SITES,
PAIA AND KAMAOLE AQUIFERS
Central Maui Exploratory Well
District of Makawao, Maui, Hawaii
State of Hawaii
Department of Land and Natural Resources

No Scale
R. M. TOWILL CORPORATION

Kamaole Aquifer System. A site selection study was conducted (Water Resource Associates, Inc., October 2003) to locate and assess the attributes of two potential exploratory well sites for future development within the Kamaole Aquifer. The potential exploratory well is intended to be developed to ultimately serve as a potable water source for the DWS water supply system. Based on the findings of this study, DLNR, in consultation with DWS, selected Tank Site No. 3 for development as an exploratory well overlying the Kamaole Aquifer. The site is shown in **Figures 1-1 and 2-6.**

The Kamaole Aquifer System is not water-rich, with rainfall averaging only 15 to 40 inches per year. However, a recent exploratory well (4422- 01) encountered potable water with an aquifer head of 6 feet and chloride content of 65 mg/L. Based on Well 4422-01, a 1 mgd well can be expected to be developed in the Kamaole Aquifer at a general elevation of 1,800 feet approximately 5 miles inland from the Kihei Coast (Water Resource Associates, Inc., 2003). The proposed well which is the subject of this EA is intended to utilize the same aquifer resource as well 4422-01.

2.4 Delayed Action Alternative

Development of the proposed site for an exploratory well at a later date was not considered feasible. The delayed action alternative would increase the risk that water demands will exceed available, developed supplies for State of Hawaii educational and health care facility projects.

2.5 No Action Alternative

The “no-action” alternative was considered as a baseline against which other potential actions were measured. Under this option, environmental impacts resulting from construction activities would be averted and project costs would be avoided. Further, the “no-action” alternative would fail to meet the project goal of providing a potable water source for State of Hawaii projects.

Chapter 3

Environmental Setting, Potential Impacts, and Mitigation

3.1 Topography, Climate and Rainfall

3.1.1 Topography

The proposed project site is located within the existing DWS Tank Site No. 3, which is connected to the Maui Meadows Subdivision via an existing access road from Launa Drive. Elevation of the site is approximately 781 feet above mean sea level (msl). Ground within the area proposed for well drilling is relatively level due to previous preparation of the site for the water tank. The mauka or rear portions of the site slope upward with elevations ranging from approximately 780 to 812 feet msl.

3.1.2 Climate and Rainfall

Meteorological conditions of Maui include mild temperatures, cool and persistent trade winds, a rainy winter season from October through April, and a dry summer season from May through September (Atlas of Hawaii, 3rd Edition, 1998). Average annual temperatures recorded in Kihei, located in the vicinity of the proposed project, ranges from 67.7 degrees F to 74.5 degrees F, with an average annual temperature of 71 degrees F. The warmer months tend to range from June through October, with cooler months occurring from November through May. (WorldClimate, 2003).

Trade wind speeds average between 11 to 15 miles per hour (mph) for most of the year. Trade wind showers are relatively common and most showers are light and of short duration (City-Data, 2003). Average annual rainfall for the area ranges from approximately 15 to 20 inches (Atlas of Hawaii, 3rd Edition, 1998).

The closest location for which rainfall data is available is the Makena Golf Course, located approximately 2.25 miles southwest of the project site. Annual precipitation for the area of the golf course has been 16.7 inches per year (WorldClimate, 2003). Higher levels of rainfall coincide with the winter months and lower rainfall coincides with the drier summer season.

3.1.3 Project Impacts

The proposed project will have no effect on topography or prevailing climatic conditions.

3.1.4 Mitigation Measures

No mitigation measures are required or recommended.

3.2 Geology and Soils

3.2.1 Geology

The Island of Maui was formed through the merging of two volcanoes, the East Maui volcano, Haleakala, and the West Maui Volcano. The project site is located in East Maui, along the southwestern coast of the island. East Maui is dominated by the 10,250 foot high Haleakala volcano which is dormant. Near the summit and on the eastern and southwestern slopes, the land is rough and rocky. The western and northern slopes are relatively smooth but are sloping to moderately steep. (U.S. Dept. of Agriculture and Soil Conservation Service, 1972).

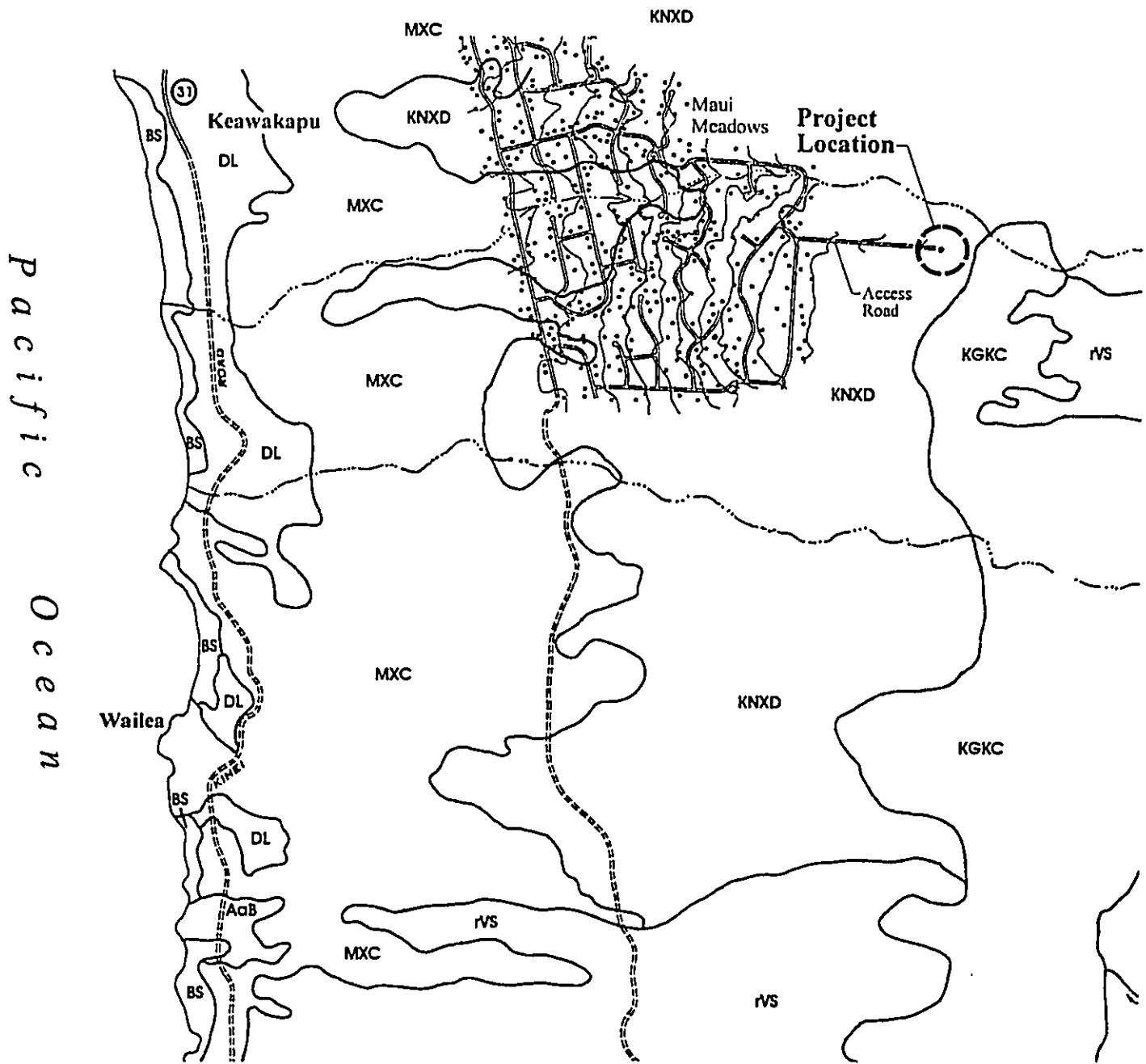
3.2.2 Soils

The U.S. Department of Agriculture, Soil Conservation Service Soil Survey (U.S. Department of Agriculture, 1972), characterizes two soil associations found in the vicinity of the project site:

Keawakapu-Makena Association: This soil association is gently sloping to moderately steep and well-drained. The texture includes fine to medium subsoils and are shallow to deep over fragmental lava on low uplands.

Kamaole-Oonapuka Association: This soil association is gently sloping to moderately steep, well drained, very stony and extremely stony. The soils have a fine or medium textured subsoil and are shallow to deep over fragmental lava on low and intermediate uplands.

Soils found in the project area include (Figure 3-1):



KNXD Keawakapu extremely stony silty clay loam, 3 to 25 percent slopes

FIGURE 3-1
SOILS MAP
 Central Maui Exploratory Well
 Makawao District, Maui, Hawaii
 State of Hawaii
 Department of Land and Natural Resources



Keawakapu extremely stony silty clay loam, 3 to 25 percent slopes (KNXD). This soil is located on low uplands. In a representative profile the surface layer, about 2 inches thick, is dark reddish brown extremely stony silt loam that has a platy structure. The subsoil, about 16 inches thick, is dark reddish brown silty clay loam and silty clay that has a prismatic and subangular blocky structure. The substratum is fragmental Aa lava that has a little soil material in the voids. The soil is neutral in the surface layer and subsoil.

Permeability is moderate and runoff is slow to medium. The erosion hazard is slight to moderate. The available water capacity is about 1.5 inches per foot of soil. In places roots penetrate to a depth of 30 inches.

Kamaole very stony silt loam, 3 to 15 percent slopes (KGKC). This soil is located on uplands. In a representative profile the surface layer is dark brown and dark reddish brown silt loam and silty clay loam about 8 inches thick. The subsoil, about 12 inches thick, is dark reddish brown silty clay that has a subangular blocky structure. The substratum is fragmental Aa lava that has very little soil material in voids. The soil is medium acid and slightly acid in the surface layer and mildly alkaline in the subsoil.

Permeability is moderate and runoff is slow to medium. The erosion hazard is slight to moderate. The available water capacity is about 1.2 inches per foot in the surface layer and subsoil. In places roots penetrate to a depth of 2 feet.

(U.S. Department of Agriculture, 1972)

3.2.3 Project Impacts

No adverse impacts to the geological formations underlying the drilling site or to the soils at the surface of the site are expected from drilling the exploratory well.

3.2.4 Mitigative Measures

As no adverse impacts are expected, no mitigative measures are required or proposed.

3.3 Wastewater

3.3.1 Wastewater Disposal

There are no wastewater facilities in the project area.

3.3.2 Project Impacts

The exploratory well may require wastewater facilities for work crews for the temporary duration of work at the site. Following completion of well drilling activities and demobilization from the site no further wastewater treatment will be needed.

3.3.3 Mitigative Measures

During construction mobilization and well drilling a portable sanitary toilet may be used for the work crew. The toilet would be delivered to the site and removed following termination of work. Maintenance and disposal of waste from the sanitary toilet will be handled off-site in accordance with applicable regulations of the State Department of Health (DOH) and County of Maui.

3.4 Water

3.4.1 Surface Water

Waters of the Pacific Ocean are located approximately two miles west, and downgradient of the project site. Approximately 500 feet to the north of the site, and 4,000 feet to the south of the site are unnamed intermittent streams (identified by the Federal Emergency Management Agency as Kihei Gulches 2 and 3). Both streams remain dry throughout most of the year except during periods of heavy rainfall when the streams convey runoff from the surrounding area to coastal waters of the Pacific Ocean (Figure 3-2).

No perennial streams or other naturally occurring surface waters are located in the vicinity (Hawaii Stream Assessment, 1990). Factors which contribute to this condition include low rainfall, moderate permeability of the soils, and the generally steep surrounding terrain which promotes drainage.

3.4.2 Project Impacts

No impacts on streams or other surface waters in the vicinity of the project site are expected. No special monitoring of stream flows is required because exploratory well operations will not affect streams.

3.4.3 Mitigative Measures

Since no impacts to surface water are anticipated, no mitigation measures are needed or recommended.

3.4.4 Groundwater

The proposed project is located in the Kamaole Aquifer, one of four aquifers in the Central Maui System (Figure 3-3). The other aquifers of the Central Maui System are Makawao, Paia, and Kahului.

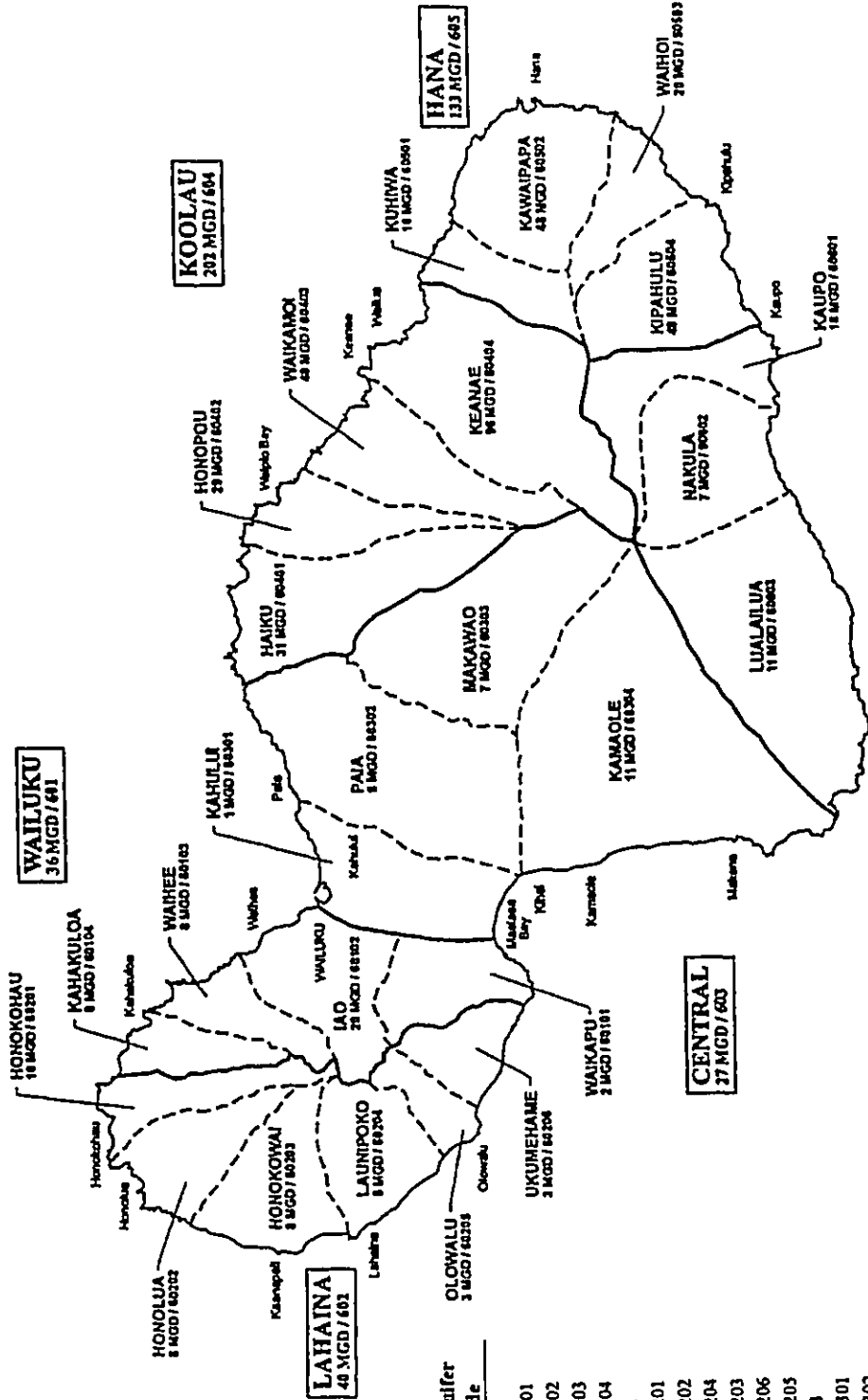
According to the report, Central Maui (Maui Meadows) Exploratory Wells Site Selection Study, DLNR, 2003:

“The Kamaole Aquifer System is not water-rich, with rainfall averaging only 15 to 40 inches per year. However, a recent exploratory well (4422-01) encountered potable water with an aquifer head of 6 feet and chloride content of 65 mg/l. Based on Well 4422-01, a 1 mgd well can be developed in the Kamaole Aquifer at a general elevation of 1,800 feet approximately 5 miles inland from the Kihei Coast. This area will be subject to the requirements of the Makawao-Pukalani-Kula Community Plan and can only serve areas within the Community Plan. Only well sites below this elevation will be considered at this time.”

3.4.5 Project Impacts

The drilling of the exploratory well is not expected to adversely impact the Kamaole Aquifer. Although the well site will be approximately 2 miles inland from the coastal area of Wailea, elevation of the site will be 781 feet msl, which is consistent with the recommendation of the DLNR, 2003, Report, i.e., it is well below the 1,800-foot elevation.

Island of Maui Sustainable Yield Total = 474 mgd



HYDROLOGIC UNITS Sustainable Yield/Aquifer Code

Aquifer/System	Sustainable Yield	Aquifer Code
Wailuku	36 mgd	601
- Waikapu	2	60101
- Iao	20	60102
- Wahee	8	60103
- Kahauloa	8	60104
Lahaina	40 mgd	602
- Honokohau	10	60201
- Honolua	8	60202
- Launipoko	8	60204
- Honokowai	8	60203
- Ukumehame	3	60206
- Olowalu	3	60205
Central	27 mgd	603
- Kahului	1	60301
- Paia	8	60302
- Makawao	7	60303
- Kamaole	11	60304
Koolau	202 mgd	604
- Keanae	96	60404
- Waikapoi	46	60403
- Honopou	29	60402
- Haiku	31	60401
Hana	133 mgd	605
- Kahiwa	16	60501
- Kawaipapa	48	60502
- Waihoi	20	60503
- Kipahulu	49	60504
Kahikinui	36 mgd	606
- Kaupo	18	60601
- Nakula	7	60602
- Luialuia	11	60603
Total Maui Island	474 mgd	

Percent of Total Sustainable Yield (mgd)
Maui Aquifer Systems

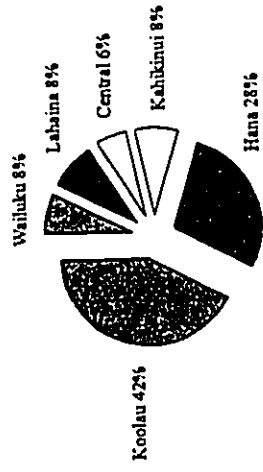


FIGURE 3-3
AQUIFERS OF THE ISLAND OF MAUI
Central Maui Exploratory Well
Makawao District, Maui, Hawaii
State of Hawaii
Department of Land and Natural Resources



No Scale

3.4.6 Mitigative Measures

The owner will determine if a National Pollutant Discharge Elimination System (NPDES) general permit authorizing discharges of treated process water associated with well drilling activities is required from the State Department of Health, Clean Water Branch. In addition, the project site comprises an area of 0.51 acres. Because the project area is less than 1 acre, a NPDES general permit authorizing discharges of construction stormwater will not be required.

Stormwater erosion controls and discharge pollution prevention measures will be implemented as required based on site conditions, construction activities, and project scheduling. If results indicate that the quality or quantity of water from the exploratory well is unsatisfactory, the well will be capped and sealed to protect and preserve the underlying groundwater. The drilling hole may also be considered for a future monitoring well to assess the health of the underlying aquifer.

3.5 Public Utilities and Services

3.5.1 Electrical Service

The Maui Meadows Tank Site No. 3, does not have existing electrical service from the Maui Electric Company (MECO). Because the site is without electrical service, the proposed exploratory well will require use of an on-site portable generator to meet drilling rig and ancillary equipment needs.

3.5.2 Project Impacts

Potential for negative impacts from use of a portable on-site generator to meet exploratory drilling requirements are not anticipated or expected. Operation of the generator will be subject to safe operating and environmental use requirements by regulatory agencies including the federal Occupational Health and Safety Administration (OSHA) and state DOH.

3.5.3 Mitigative Measures

Operation of the portable on-site generator will be in accordance with safe operating practices and applicable regulations of governmental agencies. These requirements include operating the generator in a safe and responsible manner which does not contribute to health, safety, or environmental impacts. No further mitigation measures are anticipated or proposed.

3.5.4 Telephone Service

There is currently no telephone service serving the proposed exploratory well location.

3.5.5 Project Impacts

No telephone service will be required at the project site.

3.5.6 Mitigative Measures

No mitigative measures with regard to telephone service are necessary or planned.

3.5.7 Police Protection and Fire Control

The project area obtains police protection from the County of Maui, Police Department, District 6 Kihei Station. Fire control services will be provided by the County of Maui, Department of Fire Control, Wailea Fire Station.

3.5.8 Project Impacts

No significant change in service levels are expected for police protection, as the proposed improvements will not change land use materially. Of potential concern are construction traffic and possible vandalism of the project site. (Maui Police Department, January 23, 2004).

No significant impact on fire protection service levels are expected to result from the proposed project. (Maui Fire Department, January 23, 2004).

3.5.9 Mitigative Measures

The State Department of Land and Natural Resources (DLNR) will notify the Maui Police Department concerning the construction schedule. To further reduce opportunities for vandalism and theft, the job site will be secured with lock boxes for tools and hand equipment. The existing project site is fenced. Access for use of the gated entry to the site will be coordinated with the County of Maui, Department of Water Supply, to protect equipment and construction machinery. No other mitigation is necessary or recommended with regard to police protection. No mitigation measures are necessary or recommended with regard to fire control.

3.6 Natural Hazards

3.6.1 Seismic Events (Earthquakes)

Earthquake activity is linked primarily to volcanic activity. In addition, earthquakes may result from the underground movement of magma. Earthquakes in Hawaii are most common and strongest on the Island of Hawaii. The greater the distance from the Big Island, the lower the risk of earthquakes (Geolabs, Inc., 2003).

The Uniform Building Code (UBC) provides minimum design criteria to address potential for damage due to seismic disturbances. The UBC scale is rated from Seismic Zone 0 (no chance of severe ground shaking) to 4 (10% chance of severe shaking in a 50-year interval). The island of Maui is designated in Seismic Zone 2B, an area with relatively low probability of earthquakes (USGS, 97).

3.6.2 Flood Zones

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) identifies the project site as lying within "Zone C," an area with minimal flood risk (Figure 3-4).

3.6.3 Hurricanes

The Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. The project area is infrequently hit by severe storm events. It is difficult to predict these natural occurrences, but it is reasonable to assume that future events will occur. The project site is, however, no more or less vulnerable than the rest of the island to the destructive winds and torrential rains associated with hurricanes.

3.6.4 Project Impacts

Potential hazards to well drilling operations at the site are minimal. However, there is potential for well drilling equipment to inadvertently damage the existing water tank and/or appurtenances due to falling equipment during a seismic or related natural disaster event.

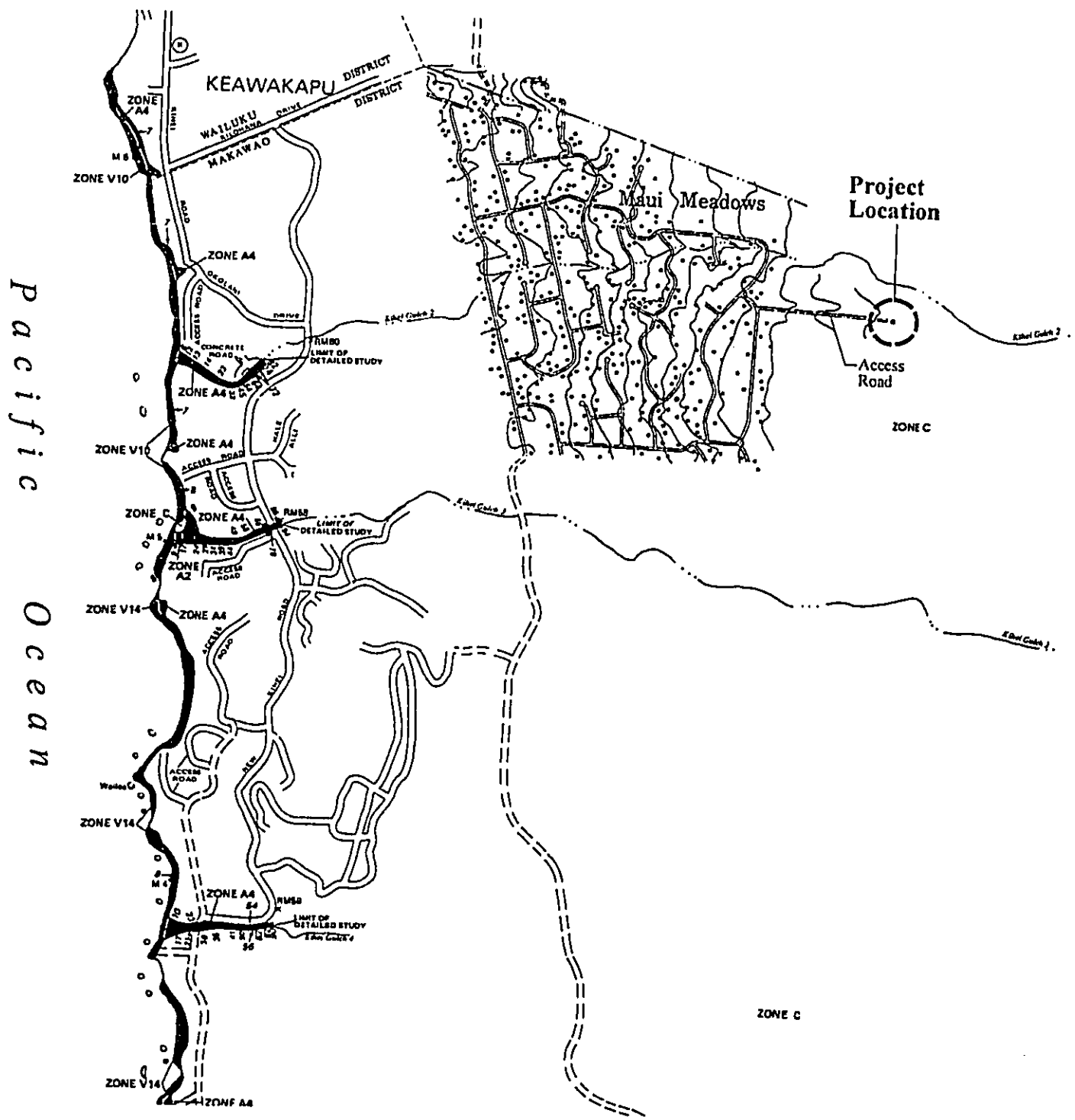
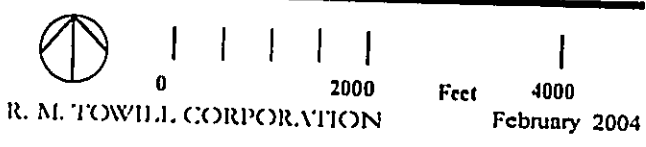


FIGURE 3-4
 FLOOD ZONE MAP
 Central Maui Exploratory Well
 Makawao District, Maui, Hawaii
 State of Hawaii
 Department of Land and Natural Resources



3.6.5 Mitigative Measures

Seismic risk at the project site is minimal. However, to mitigate the potential hazard from equipment accidentally damaging the water tank and appurtenances, all equipment shall be properly secured at the end of each work day. Securing of equipment shall include placement of well drilling and ancillary machinery at a distance which will not damage the water tank or appurtenances should a fall occur. If placement of machinery cannot be accomplished away from the water tank, all such equipment shall be secured using ropes or other methods as determined appropriate by the well drilling contractor.

The proposed project is not located within a flood zone. Therefore, no mitigative measures are required with regard to flooding.

During a significant storm or hurricane event, direct wind pressure, wind driven debris, and flooding all pose potential hazards to the proposed exploratory well site. Because the majority of the well structure will be underground, these hazards are primarily of concern during the construction period. Erosion control measures prepared prior to construction will address heavy rainfall conditions. No significant erosion is expected because of the small area of the exploratory well within the 0.5 acres of the Water Tank No. 3 site.

3.7 Biological Resources

3.7.1 Botanical and Faunal Resources

The U.S. Fish & Wildlife Service has identified a number of important flora and fauna resources within the island of Maui. These include:

- Maalaea National Wildlife Refuge Complex
- Kealia Pond National Wildlife Refuge, 700 acres of natural wetland habitat, adjacent to Kealia Beach and approximately 11 miles from the project site.

- The Maui Plant Cluster Recovery Plan, dealing with 20 endangered and one threatened plant species. Affected areas of habitat are the mauka uplands of Haleakala and the West Maui Mountains. No critical habitat area has been identified.
- Critical habitat for the Po'ouli bird (*Melanerpes formicivorus*), which lives in native upland forests at elevations of 5,000 feet and above. The project elevation is approximately 800 feet msl.
- Critical habitat for the Maui Parrotbill (*Pseudonestor xanthophrys*), which inhabits high-elevation (4,300-6,800 feet msl) ohia forests.

3.7.3 Project Impacts

The proposed project is located on an existing water tank site that has been substantially altered during construction. The surface of the area has been excavated and graded which would have removed any potential habitat for threatened and/or endangered species. The site has also been cleared to accommodate the water tank and facilities including a fenced enclosure.

According to the above information, the project area is also significantly out of the physical range of any identified habitat for the above listed threatened and endangered species and protection areas. Therefore, no adverse impacts to threatened or endangered biological species are expected.

3.7.4 Mitigative Measures

No mitigation is required for the proposed project based on the cleared nature of the existing site which would severely limit opportunities for established habit and presence of known threatened or endangered biological species.

3.8 Social and Economic Characteristics

3.8.1 Regional Overview

The project site is located about two miles mauka of the Wailea-Makena coastline. The communities of Makawao and Pukalani are approximately 7-8 miles from the proposed exploratory well site.

The mauka (eastern) boundary of nearby Maui Meadows residential subdivision divides two of Maui's Community Plan Areas: Kihei-Makena, an urbanized and resort-oriented area, and Makawao-Pukalani-Kula, the more agrarian and low-density residential "upcountry" area of Maui (Figure 2-1). The project site is located in the Makawao-Pukalani-Kula Community Plan Area. Both Community Plan Areas are part of the Central Maui water system and geographically overlay the Kamaole Aquifer (Figure 3-3, *Aquifers of the Island of Maui*).

- The Makawao-Pukalani-Kula Community Plan (1996) describes the region as follows: "The region's population is concentrated in two main settlement areas, Makawao and Pukalani, which are characterized by a mixture of suburban and rural land uses. The Kula area is better depicted as a mixture of rural and agricultural uses with settlement more concentrated in Waiakoa...The planning region is referred to as 'Upcountry,' reflecting first its location and elevation on Haleakala and secondly the social qualities of its neighborhoods."
- In contrast, the Kihei-Makena Community Plan Area is a rapidly-urbanizing coastal resort and residential community. Its Community Plan, dated 2000, characterized the area as "...a small shoreline-oriented community at Maalaea and a linear pattern of urbanization extending from the south end of Kealia Pond to Makena...Kihei-Makena in particular, witnessed significant growth in the 1980s and early 1990s."

3.8.2 Regional Population

Table 1, *Population Trends, 1990 and 2000*, compares the demographics of Wailea-Makena, Makawao and Pukalani with Maui County statistics. The population growth in terms of percentage has been rapid for Maui County and each of the three communities, ranging from 18% in Makawao

to 49% in more recently-developed Wailea-Makena..

Table 1
Population Trends, 1990 and 2000
Maui County, Makawao, Pukalani and Wailea-Makena

Area	1990	2000	% Change
Maui County	100,374	128,094	28%
Makawao-Pukalani-Kula Community Plan Area			
Pukalani	5,879	7,380	26%
Makawao	5,344	6,327	18%
Kihei-Makena Community Plan Area			
Wailea-Makena	3,799	5,671	49%

3.8.3 Household Income

Table 2, Household Income Trends, 1990 and 2000, compares the relevant communities with Maui County as a whole. Makawao shows the most stability in terms of household income; Pukalani experienced the biggest spike in household income (+48%) in the past decade.

Table 2
Household Income Trends, 1990 and 2000
Maui County, Makawao, Pukalani and Wailea-Makena

Area	1990	2000	% Change
Maui County	\$38,771	\$49,589	28%
Makawao-Pukalani-Kula Community Plan Area			
Pukalani	\$42,321	\$62,778	48%
Makawao	\$45,370	\$46,681	3%
Kihei-Makena Community Plan Area			
Wailea-Makena	\$45,556	\$56,806	25%

3.8.4 Home Prices

Average home prices in 2000 within the three communities also reflect the character of localized residential development:

Makawao - \$230,400

Pukalani - \$260,100

Wailea-Makena - \$519,000

3.8.5 Demographics of the Wailea-Makena Community

In 2000, the population of Wailea-Makena was 5,671, with a median resident age of 43.9 years. Median household income was \$56,806 and the median house value was \$519,000. Almost three-fourths of the Wailea-Makena population is categorized as "White Non-Hispanic."

Compared with statewide statistics, the Wailea-Makena community may be viewed as follows:

- Median house value (\$519,000) **significantly above** the state average. This reflects high-end resort residential development in the area.
- Median age **above** the state average. This indicates a population with a relatively high percentage of retirees and older, affluent home buyers.
- Foreign-born population percentage **significantly above** the state average. This is commonly found where lower-level service jobs, such as those found in resort hotels and restaurants, are readily available.
- Length of stay since moving in **significantly below** the state average. This reflects the lower average age of housing and normally higher turnover (resales) in resort-oriented residential development.
- House age **significantly below** the state average. Development of this area progressed rapidly after the mid-1980s, making it a much younger community than other established settlements.
- Percentage of population with a bachelor's degree or higher **above** the state average. This is consistent with the higher average income and home prices in the area.
- Population density **significantly below** the state average. The master-planned residential communities, such as Maui Meadows, have relatively large lots (over ½-acre) compared to much smaller average residential lots statewide.

Employment in the Wailea-Makena area is highly correlated to the tourism-dominated economy of the community: arts, entertainment, recreation, accommodation and food services (31.6%), retail trade (12.1%) and educational, health and social services (12%).

3.8.6 Project Impacts

Construction of the proposed exploratory well will not affect the demographics or socio-economic status of the surrounding community and no mitigation is required.

3.8.7 Mitigative Measures

If the exploratory well is found to meet technical requirements of volume and water quality, a future production well will be the subject of a separate Environmental Assessment. At that time, any social impacts from the use of Kamaole Aquifer System water for State of Hawaii public facilities, e.g. schools and health care facilities, will be examined.

3.10 Land Use

3.10.1 Zoning and Land Tenure

The exploratory well site (Maui Meadows Tank Site No. 3) and the access road are under jurisdiction of the County of Maui, Department of Water Supply. The tank site area is approximately 0.51 acres zoned agricultural. The access road leading to the site is held as a road and access easement by the Department of Water Supply. The easement width is 34 feet by approximately 1,900 feet long. The access road is connected to the existing Launa Drive, within the northernmost boundary of the Maui Meadows subdivision.

Right of entry and an easement for use of the exploratory well and right of entry for use of the access road will be coordinated by DLNR with the County of Maui, Department of Water Supply. The roadway easement is from private property surrounding the site, known as Ulupalakua Ranch.

3.10.2 Project Impacts

The project will require control of the exploratory well site by DLNR. Ultimately, the site may be turned over to the DWS for use as a potable water source.

3.10.3 Mitigative Measures

Use of County of Maui land for the proposed project will be coordinated between DLNR and the County, Department of Water Supply.

3.11 Roadways, Access and Traffic

3.11.1 Roadways, Access and Traffic

Access to the project site is from an existing access road connection with Launa Drive, located at the easternmost boundary of the Maui Meadows subdivision. Piilani Highway, which adjoins the Maui Meadows subdivision, serves as the major thoroughfare for the subdivision.

3.11.2 Project Impacts

The exploratory well site will be a passive land use after construction is completed. There will be no significant or long-term impacts to Piilani Highway, Launa Drive, or Kupulau Drive, which provide access for this project. Traffic related to construction of the exploratory well is not expected to create a significant impact. However, construction activities will result in a temporary rise in truck traffic on Piilani Highway, Launa Drive, and Kupulau Drive, during mobilization and demobilization. Work activities will not require lane closures.

3.11.3 Mitigative Measures

To minimize potential traffic impacts to the nearby residents, the contractor will schedule heavy truck activity as much as possible between the hours of 9:00 a.m. and 3:00 p.m. on weekdays and will suspend activity on weekends and State holidays.

The Maui Police Department, District 6, Kihei Station, will be notified prior to periods of heavy truck activity or during transport and operation of heavy equipment.

3.12 Noise Impacts

3.12.1 Noise

Ambient noise at and around the project site is negligible due to the relatively undeveloped and rural nature of the site. Construction activities could generate noise impacts to homes located approximately 1,900 feet from the site along portions of Launa Drive, Kumulani Drive, and Kupulau Drive. However, noise levels of diesel powered construction equipment typically range from 80 to 90 dBA at a distance of 50 feet. The actual noise levels produced will be dependent on the construction methods employed during each phase of the construction process. Equipment, including a diesel-powered drilling rig, water trucks and possible use of electrical generators, will likely be the noisiest equipment used during construction.

3.12.2 Project Impacts

The proposed project may be audible by some residents along the eastern boundary of the Maui Meadows subdivision. If a line shaft is used to construct the exploratory well, noise will be generated from the associated diesel engine. However, adverse impacts from construction noise are not expected to pose a hazard to public health and welfare because of distance of the project from residences, the temporary nature of the work, and use of mitigative measures that will be employed to minimize noise impacts. Construction-related noise will terminate when construction is complete.

3.12.3 Mitigative Measures

Noise mitigation measures will be employed as required during construction activities in compliance with Hawaii Administrative Rules (HAR), Chapter 46, Community Noise Control. If there is potential for excessive noise levels generated by project activities, a noise permit for construction will be obtained from the DOH, Noise, Radiation, and Indoor Air Quality Branch. A noise permit will require that contractors muffle all construction vehicles and machinery and maintain all noise attenuation equipment in good operating condition. As necessary, faulty equipment will be repaired or replaced. If lineshaft pumps are used, they will be installed with mutes to reduce noise to

acceptable levels. Alternatively, submersible pumps may be used.

Further, construction activities and use of heavy equipment can be scheduled during daylight hours to avoid disturbing residents during the evening. If work during the night-time hours is required, a variance from the existing state noise regulations will be requested from the DOH, Noise, Radiation, and Indoor Air Quality Branch.

3.13 Air Quality

3.13.1 Air Quality

The State Department of Health (DOH), Clean Air Branch, does not regularly monitor ambient air quality on Maui. However, air quality at the project location is excellent overall due to prevailing northeast trade winds. Existing air pollution at the project site is minimal due to the relatively low population density and the resort-oriented land uses in the area. The nearest source of air pollution is Piilani Highway, approximately one mile from the exploratory well site. Other sources of air pollution include emissions from vehicles within the Maui Meadows subdivision and fossil fuel-powered equipment.

3.13.2 Project Impacts

Short-Term Impacts

Some short-term impacts on air quality will occur either directly or indirectly as a consequence of construction activities. Construction will involve use of a bulldozer/backhoe as needed to prepare the site for drilling. In addition, a truck-mounted or stationary drill rig will be required, along with internal combustion-powered water pumps and generators. Other construction-related equipment will include pickup trucks and water trucks.

The operation of heavy equipment, vehicles, and generators will generate some fugitive dust and air emissions. Adjacent undeveloped areas will be temporarily affected during the period of construction

by dust and construction debris. However, work required to prepare the site for drilling is expected to be minimal given the developed nature of the site. Impacts to air quality therefore, will be temporary and minor, and will last only for the duration of work.

Long-Term Impacts

No long-term impacts to air quality are expected from construction of the exploratory well, or, ultimately, from operation of a production well if the exploratory well meets desired technical and implementation criteria.

3.13.3 Mitigative Measures

Short-Term Mitigation

State air pollution control regulations require that there be no visible fugitive dust emissions at the construction site boundary. Therefore, an effective dust control plan will be implemented by the project contractor to ensure compliance with state regulations. Fugitive dust emissions can be controlled to a large extent by watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering trucks with open beds. Dust control measures will include, but not be limited to:

- Planning phases of construction to minimize dust generating activities;
- Minimizing the use of dust generating materials;
- Locating dusty equipment in areas of least impact;
- Providing an adequate water source at the site prior to start-up of construction activities;
- Landscaping bare areas, including slopes, starting from the initial grading phase; and,
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction.

Construction-related exhaust emissions will be mitigated by ensuring that project contractors properly maintain internal combustion engines and comply with HAR, Title 11, Chapter 59 and 60,

regarding Air Pollution Control.

Long-Term Mitigation

Long-term impacts are not anticipated to cause significant increases in air pollution levels over existing levels in the project area. No long-term measures are required or recommended.

3.14 Visual and Recreational Resources

3.14.1 Visual and Recreational Resources

The site is located mauka, or east, of the Maui Meadows subdivision, and is developed with a water tank and appurtenances. During construction, the drilling rig and equipment are not expected to be easily visible from Piilani Highway. Limited but far-off (approximately 1,900 feet distance from the closest residences) and temporary visibility of drilling equipment within the fenced enclosure of the water tank site is possible from residences or along subdivision roadways. However, when complete, all equipment necessary to the project will be demobilized and removed from the site.

No recreational activities are permitted within the proposed project site. The site is owned and operated by the County Department of Water Supply for use as a water tank facility. Access to the site is restricted from entry by the general public and is secured with a fence and gated entry.

3.14.2 Project Impacts

Drilling equipment during construction may be visible from Piilani Highway, and from some access roads and residences. These impacts, however, are expected to be of short duration and relatively minor given the existing public facility use of the site and approximately 1,900 linear foot distance from the closest residences.

3.14.3 Mitigative measures

No mitigative measures with regard to visual or recreational resources are required or recommended. The proposed project will be of short duration and of relatively small scope and scale. Some views of the well drilling equipment will be possible. However, given the public facility nature of the site, short duration of work, and limited scope and scale of activities, this is not expected or anticipated to constitute a negative adverse impact.

3.15 Historic, Cultural and Archaeological Resources

3.15.1 Historic and Archaeological Resources

The Maui Meadows No. 3 Tank Site is located within the ahupua'a of Paeahu. This approximately half acre site was subject to extensive clearing, excavation, and grading to establish a relatively level surface for the currently operational 0.5 million gallon potable water tank and ancillary equipment. The site of the proposed exploratory well is within a portion of this site which includes a graded and level surface which once served as the foundation for a former accessory water tank which has since been removed. No historic or archaeological resources are expected to be present due to this prior construction activity.

3.15.2 Cultural Resources and Traditional Cultural Practices

A Cultural Impact Assessment is normally prepared for projects to assess the potential for negative adverse impacts to cultural resources including use of the site for traditional religious, spiritual, recreational, or related gathering practices. The subject project, however, involves use of an existing developed and secured site which is a designated public facility involved in the storage and supply of potable water. The following is noted concerning the existing and proposed use of the site:

- The project location was subject to previous disturbance in 1979 for construction of the tank site. This construction disturbance included clearing, excavation, and grading to establish the site for the currently operating water tank. Fencing around the site includes

a minimum 6 foot high chain link fence topped with barbed wire which prevents entry by the public and secures the site from vandalism. A gated entry equipped with DWS locks provides entry to the site.

- Access is via a road and utility easement held by DWS on TMK: (2) 2-1-8: parcel 01 (owned by Ulupalakua Ranch). The easement is approximately 34 feet wide with an area of 1.426 acres. The access road is restricted to use by DWS for purposes of accessing the site.

Few to no opportunities are available for use of the site for traditional or contemporary cultural practices to occur. In addition, the County of Maui is conducting a facility vulnerability assessment to determine if current measures to secure facilities, such as the subject site, are sufficient or if additional measures are required. Post 9/11 concern for the security of public infrastructure is expected to require this continued restriction from public entry and use, with additional measures to be employed as needed.

3.15.3 Project Impacts

The proposed project is not anticipated to negatively impact historic, archaeological, or cultural resources, or traditional cultural practices. Historic and/or archaeological resources are not expected to be impacted based on prior land disturbance which established the site. Cultural resources or traditional cultural practices are similarly not expected to be negatively impacted because of the need for continued restrictions on public entry and use of the site.

3.15.4 Mitigative Measures

Although no negative adverse impacts to historic, archaeological, or cultural resources are anticipated, there is always the remote possibility that previously unknown or unexpected subsurface cultural features, deposits, or burials may be encountered. To ensure that no subsurface cultural features will be destroyed during construction, any work within the project area will be regularly inspected by the contractor or the contractor's designated representative. In the unlikely event that archaeologically significant remains are encountered, work will cease in the immediate area and the

following parties notified for instructions, as appropriate:

- DLNR, State Historic Preservation Division, at (808) 692-8015
- Office of Hawaiian Affairs, at (808) 594-1888
- Maui Island Burial Council, at (808) 984-2400, extension 28037, for discovery of burials.

Chapter 4

Relationship to Land Use Policies and Controls of the Affected Area

Federal regulations, as well as State and County policy plans, land use plans and controls are established to guide development in a manner that enhances the overall living environment of Hawaii and ensures that long-term social, economic, environmental, and land use needs of the people of Hawaii are met.

4.1 Federal Laws and Regulations

4.1.1 Safe Drinking Water Act

The Safe Drinking Water Act of 1974 (SDWA) (Public Law 93-523, 42 U.S.C. 300 et. seq) was passed by Congress to protect public health by regulating the nation's drinking water supply, including groundwater wells. The SDWA applies to every public water system in the United States. The U.S. Environmental Protection Agency (EPA) sets national standards for drinking water "based on sound science to protect against health risks, considering available technology and costs" (42 U.S.C. 300 et. seq). The State DLNR and County of Maui, Department of Water Supply, must comply with these regulations. The exploratory well will provide water samples for water quality testing which will be part of the feasibility analysis for a future production well at the project site.

4.1.2 Endangered Species Act

The purpose of the Endangered Species Act of 1973 is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section" (Endangered Species Act of 1973, Section 2(b), "Purposes.").

Preparation of this Environmental Assessment included consultation with the U.S. Fish and Wildlife Service, Pacific Ecoregion, with regard to the location of and habitat of threatened and endangered plant or animal species. No such species are expected to be impacted by the project. See **Section 3.7** "Biological Resources."

4.1.3 Historic Preservation Act (16 USC, Section 470(F))

If federal funding is used for this project, consultation under Section 106 of the Historic Preservation Act will be required.

4.1.4 Federal Emergency Management Agency - Flood Insurance Rate Map

The Federal Emergency Management Agency provides Flood Insurance Rate Maps showing specific zones indicating the estimated level of flood risk. The Flood Insurance Rate Map for the project site shows the project site (both access road and exploratory well site) within Zone C, which represents an area of minimal flooding (Federal Emergency Management Agency, Flood Insurance Rate Map Community Panel No. 150003 0330 B, June 1981).

4.1.5 Environmental Justice

Title VI of the Civil Rights Act of 1964, as amended, states that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." The Environmental Justice Order (Executive Order 12898), signed by President Clinton in 1994, amplifies Title VI by providing that "each Federal agency shall make achieving environmental justice part of its mission." As a result, Federally-funded projects must address environmental justice among other project impacts, by determining if the project is likely to have a disproportionately negative impact on low-income and minority populations.

If this project is Federally funded, a review of environmental justice is required. Construction of the exploratory well site will not violate environmental justice because construction will occur in an area

which is not considered a low-income community. Construction, therefore, will not have a disproportionately negative impact on a racial minority or low-income group of Maui.

4.2 State of Hawaii Land Use Policies and Controls

4.2.1 Hawaii State Plan

The Hawaii State Plan, Chapter 226, Hawaii Revised Statutes (HRS), serves as a written guide for the future long range development of the State. The Plan identifies goals, objectives, policies and priorities for the State.

The proposed project would be in conformance with State Plan objectives and policies for facilities in general, HRS Section 226-14, as follows:

“(a) Planning for the State’s facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.”

“(b) To achieve the general facility systems objective, it shall be the policy of this State to: (1) Accommodate the needs of Hawaii’s people through coordination of facility systems and capital improvement priorities in consonance with state and county plans;” and (3) Ensure that required facility system can be supported within resource capacities and at reasonable cost to the user.”

The project also conforms to HRS Section 226-16, “water,” which states:

“(a) Planning for the State’s facility systems with regard to water shall be directed towards achievement of the objective of provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.”

4.2.2 State Water Code

The State Water Code was created by the 1987 Hawaii State Legislature to protect and enhance the water resources of the State of Hawaii through wise and responsible management. The State Water Code established the Hawaii Water Plan consisting of four parts:

1. A water resource protection plan provided by the State Commission on Water Resource Management;
2. Water use and development plans prepared by each county;
3. A state water project plan prepared by state agencies; and
4. A water quality plan prepared by the State Department of Health.

The State Water Code requires the Commission on Water Resource Management to establish management boundaries for each Water Management Area (WMA). The Commission-designated WMAs are located in areas where research suggests that ground and/or surface water resources are threatened by current or future proposed withdrawals or diversion of water (Honolulu Board of Water Supply, 1997).

Because the Iao Aquifer System is the only designated WMA on Maui, actions under the proposed project (which is located in the Kamaole Aquifer System) do not fall under State Water Code regulations for such areas.

Specific duties of CWRM relevant to the proposed exploratory well project include (DLNR, 2003A):

- (4) Conduct hydrologic investigations and recommend appropriate action regarding designation of water management areas.
- (5) Establish minimum standards for the construction of wells and the installation of pumps and pumping equipment.
- (6) Regulate the use of water resources in water management areas, and coordinate activities necessary to insure the protection of native Hawaiian water rights.

- (7) Administer permit systems for the construction of wells and installations of pumps and pumping equipment.
- (8) Receive and process permit applications for stream channel alterations, well drilling, pump installations, and diversion works construction.
- (9) Administer the designation of water management areas and the processing of applications for water use permits.

4.2.3 State Land Use Commission

The State Land Use Commission classifies all lands in the State of Hawaii into one of four land use designations: Urban, Rural, Agricultural, and Conservation. The proposed project is located entirely within the State Agricultural District (State Land Use Commission, January 27, 2004). According to State Law, Chapter 205, HRS, land use controls in the Agricultural District are under the jurisdiction of the State Land Use Commission. Public facilities development is permitted under the agricultural land use designation.

4.2.4 Agricultural Lands of Importance to the State of Hawaii (ALISH)

Three classes of agriculturally important lands were established for the State of Hawaii with the intent of facilitating the Soil Conservation Service (SCS) effort to inventory prime farmlands nationally and adapting the classification to the types of agricultural activity in Hawaii. These classes and their corresponding SCS (national) equivalents are: Prime Agricultural Land Prime Farmland, Unique Agricultural Land, Unique Agricultural Farmland, and Other Important Agricultural Land. The criteria for classification of Prime Agricultural Land are identical to the criteria established by SCS for national application. According to the Agricultural Lands of Importance to the State of Hawaii (ALISH) system, lands at the project site are not designated as prime agricultural land (DBEDT, 2003) and therefore are not subject to restrictions required for ALISH lands.

4.3 County of Maui Land Use Policies and Controls

4.3.1 County of Maui General Plan

Section 8-8.5 of the Maui County Charter requires that the General Plan shall recognize and state the major problems and opportunities concerning the needs and the development of the county and the social, economic and environmental effects of such development and shall set forth the desired sequence, patterns and characteristics of future development.

The proposed project is in conformance with the 2000 General Plan's objectives and policies for water: "To provide an adequate supply of potable and irrigation water to meet the needs of Maui County's residents." Specific policies relevant to this project include:

"Support the Board of Water Supply in its determination of future water needs consistent with the General Plan, Community Plans and the growth management strategy."

"Seek new sources of water by exploration in conjunction with other government agencies."

"Support the planning, preservation and development of water resources and systems which service Hawaiian Home Lands." (County of Maui, Planning Department, 2000)

4.3.2 Makawao-Pukalani-Kula Community Plan

The Makawao-Pukalani-Kula Community Plan is one of nine community plans for the County of Maui providing specific direction in addressing goals, objectives and policies of the Maui General Plan to shape the growth and development of Maui through the year 2010. Water is identified as a primary problem due to limited development of water resources and a distribution system to meet the needs of the region. (Maui County Council, 1996)

The exploratory well project is consistent with the Makawao-Pukalani-Kula Community Plan goal for Physical Infrastructure, which states:

"The timely and environmentally sensitive development and maintenance of infrastructure system which protect and enhance the safety and health of Upcountry's residents and visitors, including the provision of domestic water, utility and waste disposal services, and

effective transportation systems which meet the needs of residents and visitors while maintaining the region's rural character."

The proposed project involves construction of an exploratory well to assess whether groundwater at the site is of sufficient capacity and quality for potable use. In so doing the proposed project will support meeting the needs of residents which maintaining the existing land use of site.

The project will be undertaken by the State in coordination with the Department of Water Supply and will further support the Community Plan through consistency with the following Objectives and Policies for water:

"3. The Department of Water Supply shall expand water supply and distribution systems, including catchments systems, in accordance with the directions set forth in the Makawao-Pukalani-Kula Community Plan."

"7. Support the development of separate domestic and irrigation water systems.

"9. Encourage the construction of additional storage capacity by the Department of Water Supply, commercial developers, and individual farmers to help alleviate the inadequate water supply. (Maui County Council, 1996)

4.3.3 County of Maui Water Use and Development Plan (1990)

DWS is in the process of updating its Water Use and Development Plan (WUDP). According to Hawaii state law, each county is required to prepare, periodically update and adopt by ordinance a WUDP to serve as the long-range planning blueprint for all uses of water in each county. Each plan must also be approved by the Commission on Water Resource Management. Each county in Hawaii prepared and approved a WUDP for the year 1990. Maui County requires a WUDP update each time the County General Plan is amended or revised. The WUDP is required to be consistent with the update of both the community plan and other state and county plans. The proposed project will be consistent with the WUDP because the future development of the site will further contribute to the provision of water supply for the region.

Chapter 5

Necessary Permits and Approvals

5.1 State of Hawaii

5.1.1 Commission on Water Resource Management

The Commission on Water Resource Management (CWRM) will require a Well Construction Permit for exploratory work, including test pumping. Once exploratory work is completed, conversion of the well to a production well will require a permanent Pump Installation Permit.

5.1.2 Department of Health

Excessive noise levels generated by project activities may require that a noise permit be filed with the State Department of Health (DOH), Noise and Radiation Branch. The provisions of the noise permit will require that contractors muffle all construction vehicles and machinery and maintain all noise attenuation equipment in good operating condition.

Under Hawaii Administrative Rules, Chapter 11-55, a National Pollutant Discharge Elimination System (NPDES) general permit, Appendix I, authorizing discharges of treated process water, foam, mud slurry, and/or well effluent associated with drilling activities will be required from DOH, Clean Water Branch.

A NPDES general permit, Appendix C, authorizing discharges of storm water during construction activity will *not* be required from the DOH, Clean Water Branch, because the parcel size is less than one acre.

Development of a production well at this location some time in the future will require authorization for connection to a public water system in accordance with Hawaii Administrative Rules (HAR), Chapter 11-20, Rules Relating to Potable Water Systems, and HAR, Chapter 11-25, Rules Pertaining

to Certification of Public Water System Operators. The exploratory well, if found to be feasible, will be dedicated by the applicant to the County of Maui, DWS.

No other DOH permits for the exploratory well are expected.

5.2 County of Maui

5.2.1 Construction- and Planning-Related Permits

Site Plan Approval for the well foundation will be required from the Department of Public Works and Environmental Management.

Chapter 6

Organizations and Agencies Consulted During Pre-Consultation and/or the 30-day DEA Review Period

6.1 Federal Agencies

U.S. Fish and Wildlife Service

Department of the Army

6.2 State Agencies

Department of Business, Economic Development & Tourism, Office of Planning

Department of Hawaiian Homelands

Office of Hawaiian Affairs

Department of Health

Department of Land and Natural Resources

Chairperson, Board of Land and Natural Resources

Land Division

State Commission on Water Resource Management

State Historic Preservation Office

6.3 County of Maui

Department of Water Supply

Planning Department

Department of Public Works and Environmental Management

Department of Fire Control

Police Department

6.4 Private Organizations and Elected Officials

Maui Meadows Community Association

Ulupalakua Ranch

Haleakala Ranch

Wailea Resort

Wailea 670 Project

Maui County Mayor

Maui County Council

State Representative

State Senator

Chapter 7 Determination

7.1 Overview

In accordance with the provisions set forth in Chapter 343, Hawaii Revised Statutes (HRS), and in Section 11-200-12 of Title 11, Chapter 200, Hawaii Administrative Rules (HAR), the proposed project has been assessed for short- and long-term and cumulative effects on the environment.

7.2 Significance Criteria

Significance criteria set forth in Section 11-200-12 of Title 11, Chapter 200 HAR were used to evaluate the potential impacts of the proposed project on the environment. The thirteen criteria are listed below along with a brief discussion.

Criterion 1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

An assessment of flora and fauna, and historic and archaeological sites at and near the project area found no natural or cultural resources that would be jeopardized by the construction of an exploratory well.

Criterion 2. Curtails the range of beneficial uses of the environment;

The exploratory well site will be within an existing public water tank facility comprising approximately 0.5 acres. The proposed project will require a small area within this site of less than or equal to 10,000 square feet. Given that the proposed project will be within an existing facility secured from entry and use by the general public, the range of beneficial uses of the environment of the site are not expected to be curtailed. The existing site will remain secure with fencing and a

locked and gated entry.

Criterion 3. Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS;

The project proposal has been prepared according to State and County guidelines, plans, and policies and has been found to be in compliance with all relevant provisions.

Criterion 4. Substantially affects the economic or social welfare of the community or State;

The proposed project is expected to have a beneficial effect on both the economic and social welfare of the island of Maui. Construction of the exploratory well will generate some short-term economic benefits through creation of construction jobs and material procurement. However, these benefits will not be long-lasting and will be realized primarily outside of the community.

Criterion 5. Substantially affects the public health;

The project will improve the public health and welfare of Maui by providing a supply of potable water for future public facilities of the State. It will also implement the State of Hawaii, Water Code policy. Construction of the exploratory well will not significantly affect public health in areas such as air quality, water quality and noise. Construction activities will comply with public regulations contained in DOH Rules, HAR Title 11, Chapters 59 and 60, regarding Air Pollution Control; Title 11, Chapter 54, regarding Water Quality Standards; Title 11, Chapter 55, regarding Water Pollution Control; and Title 11, Chapter 46, regarding Community Noise Control.

Criterion 6. Involves substantial secondary impacts, such as population changes or effects on public facilities;

The proposed project will not stimulate an unexpected change in the population. The proposed exploratory well will determine the feasibility of developing a potable source at the site. If successful, the project will supply potable capacity to facilities operated by the State. Traffic impacts from construction and testing of the exploratory well will be minimal and intermittent.

Criterion 7. Involves a substantial degradation of environmental quality;

The proposed project does not involve substantial degradation of environmental quality. Potential for impacts to air and water quality, noise levels, natural resources, and land use associated with the construction of the exploratory well are anticipated to be short-term and minimal. Mitigative measures described elsewhere in this document will be employed as practicable to further minimize potentially detrimental effects to the environment resulting from project activities.

Criterion 8. Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;

The proposed project involves the exploration of potable water resources for future development to meet the needs of State of Hawaii public facilities. Proposed improvements are limited to the existing exploratory well site and do not involve a commitment for larger actions. If the exploratory well is found to meet water quality and quantity criteria, a permanent potable well will be considered for construction. The production well will require preparation of a new Environmental Assessment. The project will require no land use zoning changes. Project-related impacts from construction and use of the exploratory well site following project completion include noise, construction dust, and truck traffic. Potential for these impacts will be mitigated through measures outlined in this document.

Criterion 9. Substantially affects a rare, threatened, or endangered species, or its habitat;

The proposed project is not expected to substantially affect any threatened or endangered species or critical habitat.

Criterion 10. Detrimentially affects air or water quality or ambient noise levels;

Consistent trade winds will help maintain good air quality in the project area. Construction activities will comply with DOH Rules, HAR Title 11, Chapter 59 and 60, regarding Air Pollution Control.

No impacts to water quality are anticipated from the proposed project. An NPDES general permit, Appendix C, for discharges of stormwater during construction activity will not be required because the parcel size is less than one acre. Discharges of well drilling-related effluent will be covered under the NPDES general permit, Appendix I, to ensure appropriate handling and treatment of well drilling water. Erosion controls and discharge pollution prevention measures will be provided during construction to conform to State DOH regulations pursuant to Hawaii Administrative Rules, Title 11, Chapter 55, Water Pollution Control.

The project contractor will ensure that construction activities comply with DOH Rules for Community Noise Control, (HAR §11-46).

Criterion 11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

The project is unlikely to affect or suffer damage from natural forces. The project site is located approximately two miles inland from the Pacific Ocean and within an area determined by the Federal Emergency Management Agency to be outside the 500-year flood zone. All structures proposed for this project will be built, at a minimum, according to equivalent standards for seismic zone 2B as established by the Uniform Building Code.

Criterion 12. Substantially affects scenic vistas and view planes identified in County or State plans or studies;

The exploratory well will not be visible within the landscape when it is completed. Visual impacts associated with construction activities, such as the profile of the drilling rig, will be temporary and are not considered significant.

Criterion 13. Requires substantial energy consumption.

Construction activities associated with the project will require short-term energy use. No substantial increases in energy consumption will result from this project. In terms of cumulative impacts, if a

full well is constructed based on positive results of exploration, the well will require coordination with Maui Electric Company, to provide electrical service to the site. This, however, will be the subject of a subsequent EA if the exploratory well shows sufficient potential.

7.3 Findings

In accordance with the provisions set forth in Chapter 343, Hawaii Revised Statutes, and the significance criteria in Section 11-200-12 of Title 11, Chapter 200, it is anticipated that the project will have no significant adverse impact to water quality, air quality, existing utilities, noise levels, social welfare, archaeological sites, or wildlife habitat. All anticipated impacts will be temporary and will not adversely impact the environmental quality of the area. It is expected that an Environmental Impact Statement (EIS) will not be required, and that a Finding of No Significant Impact (FONSI) will be issued for this project.

Chapter 8

Comments and Responses to the Draft EA

This section contains the record of public comment letters received and the responses prepared for the Draft Environmental Assessment.



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD04/1366

May 6, 2004

James Yamamoto
Vice President
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, HI 96817-4941

RE: Request for Comments on a Draft Environmental Assessment for a Proposed Central Maui (Maui Meadows) Exploratory Well, Wailea, District of Makawao, Maui, TMK: 2-1-008: 057

Dear James Yamamoto,

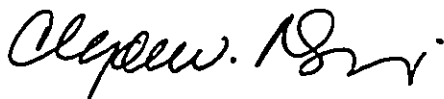
The Office of Hawaiian Affairs is in receipt of your April 14, 2004, request for comments on the above project, which would determine if the well site would be a feasible source of domestic potable water. OHA offers the following comments.

OHA was relieved to read that if the exploratory drilling shows the potential for a successful permanent well, a separate Environmental Assessment will be undertaken, and an analysis of impact on the sustainable yield of Kamaole aquifer will be fully assessed at that time. That EA should address both the sustainable yield of the ground water to be tapped and any planning processes in place (of which there should be at least one) to ensure that enough water exists for any reasonably foreseeable projects that would use the aquifer in the future.

We will rely on the applicant's assurances that should this project go forward, and should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance or excavation, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions, please contact Heidi Guth at 594-1962 or e-mail her at heidig@oha.org.

Sincerely,



Clyde W. Namu'o
Administrator

CC: Office of Environmental Quality Control
235 S. Beretania St., Suite 702
Honolulu, HI 96813

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

ENGINEERING DIVISION
PO BOX 373
HONOLULU, HAWAII 96809

JUN 24 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCE
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

TO: Mr. Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs

FROM: *for* Eric Hirano, Chief Engineer *Andrew M. Monden*

SUBJECT: **Draft Environmental Assessment for Job No. G23CM11A, Central Maui (Maui Meadows) Exploratory Well, TMK 2-1-008:057, Kihei, Island of Maui, Hawaii**
Reference: HRD04/1366

Thank you for your letter of May 6, 2004, commenting on the above-referenced Draft Environmental Assessment (EA). We offer the following responses in respective order of your comments:

1. We acknowledge that a separate EA will be undertaken should test results from the proposed exploratory well indicate it would be a successful production well. That separate EA will address sustainable yield of the ground water to be tapped. The analysis of impact on the sustainable yield of the underlying Kamaole aquifer will be addressed at that time.
2. The discovery of iwi or Native Hawaiian cultural or traditional deposits is unlikely, as the site has been previously developed. However, if any such resources are found during ground disturbance or excavation, we confirm that work will cease and our State Historic Preservation Division will be contacted at 692-8015 to inform them of the find and to seek appropriate measures while the work is halted. The Office of Hawaiian Affairs at 594-1888, and the Maui Island Burial Council, at 984-2400, Extension 28037, will also be contacted.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter will be reproduced in the forthcoming Final EA.

Should you have any questions or comments, please contact Mr. Andrew Monden of the Planning Branch at extension 7-0229.

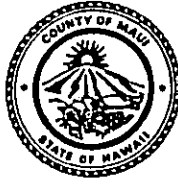
DI:ek

c: Gail Atwater, R.M. Towill Corporation

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

May 10, 2004

Ms. Gail Atwater, AICP
RM Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817

Dear Ms. Atwater:

RE: Draft Environmental Assessment Prepared for the Proposed Central Maui (Maui Meadows) Exploratory Well located at TMK 2-1-008: 057, Kihei, Island of Maui, Hawaii (LTR 2004/1326)

The Maui Planning Department (Department) has reviewed the Draft Environmental Assessment (DEA) prepared in accordance with Chapter 343, HRS, and Title 11, Chapter 200, HAR, and offers the following comments:

1. Page 10 indicates flushing and testing waters will drain onto adjacent lands (Ulupalakua Ranch) or into the Maui Meadows stormwater drainage system. Page 52 indicates an NPDES General Permit will be required from DOH, Clean Water Branch for discharging treated process water, foam, mud slurry, and/or well effluent associated with drilling activities. Discuss the measures required by this permit process to mitigate significant impacts.
2. The property is County zoned "Agricultural." Chapter 4 of the report should provide a discussion as to land use consistency with Title 19, Maui County Code, Zoning.
3. Discuss mitigative measures that will be implemented to ensure construction related materials/substances do not contaminate the underlying aquifer during construction.
4. The exploratory well proposes to draw from the Kamole Aquifer, which underlies an area designated in both the Makawao-Pukalani-Kula and Kihei-Makena Community Plans. The proposed location of the well is located within the Makawao-Pukalani-Kula Community Plan area;

Ms. Gail Atwater, AICP
May 10, 2004
Page 3

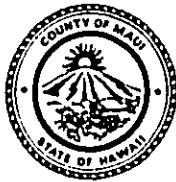
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c: Wayne Boteilho, Deputy Planning Director
Clayton Yoshida, Planning Program Administrator
Kivette A. Caigoy, Environmental Planner
DLNR, Engineering Division
DWS
OEQC
DLNR, CWRM
General File
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ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

June 2, 2004

Ms. Gail Atwater, AICP
RM Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817

Dear Ms. Atwater:

RE: Additional Comments on the Draft Environmental Assessment Prepared for the Proposed Central Maui (Maui Meadows) Exploratory Well located at TMK 2-1-008: 057, Kihei, Island of Maui, Hawaii (LTR 2004/1326)

The Maui Planning Department (Department) reviewed the Draft Environmental Assessment (DEA) for the above referenced project and transmitted comments on May 10, 2004 (see enclosed). Item four of the letter stated:

"The exploratory well proposes to draw from the Kamaole Aquifer, which underlies an area designated in both the Makawao-Pukalani-Kula and Kihei-Makena Community Plans. The proposed location of the well is located within the Makawao-Pukalani-Kula Community Plan area; and according to the objectives and policies of this community plan, any water developed within the Upcountry region shall be restricted to consumption within the Upcountry region, except if provided for agricultural use. (Page 34, Makawao-Pukalani-Kula Community Plan)

Chapter 1 of the DEA states that the exploratory well, if developed as a production well, will be conveyed to the County of Maui to serve as a source for the Central Maui water service system. The report further indicates that the well will provide a potable water source for State of Hawaii projects, such as schools, State offices, health care, and State related facilities and projects, within the Central Maui region. The Central Maui region is not located within the Makawao-Pukalani-Kula Community Plan area.

Based on the foregoing, the proposed action may not conform with the objectives and policies of the Makawao-Pukalani-Kula Community Plan, which would result in a Community Plan Amendment for the proposed action.

Ms. Gail Atwater
June 2, 2004
Page 2

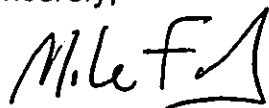
However, the Department is further researching this matter and additional comments are forthcoming. The Department requests that the Final Environmental Assessment address these additional comments."

After further consultation with the Department of Water Supply (DWS), the Department notes that this DEA is for an exploratory well to determine the developability as a potable water resource. At this time, no water will be transmitted, and as such, the exploratory well conforms with the objectives and policies of the Makawao-Pukalani-Kula Community Plan.

As indicated on Page 2 of the DEA, if testing results indicate the well would be a successful production well, the impacts of a permanent well will be addressed in a separate EA document. As such, the Department will require further analysis as to consistency with the objectives and policies of the Makawao-Pukalani-Kula Community Plan. Please be advised that developing the water for use within the Kihei-Makena region may require a community plan amendment. As such, the applicant should consult with the Department prior to the preparation of the second DEA document.

Thank you for the opportunity to comment. Should you require additional clarification, please contact Ms. Kivette A. Caigoy, Environmental Planner, of my office at 270-7735.

Sincerely,



MICHAEL W. FOLEY
Planning Director

MWF:KAC:lar

Enclosure

c: Wayne Boteilho, Deputy Planning Director
Clayton Yoshida, Planning Program Administrator
Kivette A. Caigoy, Environmental Planner
DLNR, Engineering Division
DWS
OEQC
CWRM
General File
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LINDA LINGLE
GOVERNOR OF HAWAII



**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES**

ENGINEERING DIVISION
PO BOX 373
HONOLULU, HAWAII 96809

JUN 24 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
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CONSERVATION AND RESOURCES ENFORCEMENT
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

The Honorable Michael W. Foley, Planning Director
Maui County Department of Planning
250 South High Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Foley:

**Draft Environmental Assessment for Job No. G23CM11A
Central Maui (Maui Meadows) Exploratory Well
TMK 2-1-008:057, Kihai, Island of Maui, Hawaii
Reference: LTR's 2004/1326 and 2004/1326a**

Thank you for your letters dated May 10 and June 2, 2004, concerning the subject Draft Environmental Assessment (EA). We offer the following responses in respective order of your comments:

1. Comment 1 - Regarding measures required by the National Pollution Discharge Elimination System (NPDES) permitting process for construction of the well:

The NPDES Notice of Intent (NOI) Form I, for treated process wastewater associated with well drilling activities, will be required for construction of the well (per Hawaii Administrative Rules, Chapter 11-55, Water Quality Standards, Appendix I). The NOI Form I application is required to include a Well-Drilling Best Management Practices (BMP) Plan and Site-Specific Detailed Well Drilling BMP Plan before construction can begin. The BMP plans when prepared will identify practices, procedures, schedules, and other DOH reporting and coordination requirements to ensure against potential for negative impacts to State of Hawaii waters.

2. Comment 2 - Regarding land use consistency with Title 19, Maui County Code, Zoning, to be discussed in Chapter 4 of Final EA:

The subject parcel is located in the Agricultural District, and is therefore subject to provisions of Maui County Code, Title 19, Zoning. The Maui County Code, under section 19.30A.050, lists "minor utility facilities as defined in section 19.04.040, Maui County Code" as a permitted use in the Agricultural District. Please note that the proposed exploratory well is considered a minor utility facility under section 19.04.040, Maui County Code.

3. Comment 3 - Regarding mitigative measures to ensure construction-related material/substances do not contaminate the underlying aquifer during construction:

Well-drilling BMP plans, included in the NPDES NOI Form I, will include provisions for protecting the underlying aquifer from contamination from construction-related materials or substances. Examples of such provisions include:

- a. All construction materials will be covered with PVC or similar material to prevent commingling with storm water.
- b. Any substances that could result in contamination of the underlying aquifer will be stored in a covered receptacle.
- c. A supply of absorbent material will be kept on-site in a designated area and available for immediate use at all times. Any absorbent used for clean up of a construction-related substance will be disposed of in a covered on-site receptacle.
- d. Equipment or vehicles found to be leaking petroleum, oil, or lubricants, or in a condition which may result in leaks and spills, shall be replaced with equipment or vehicles in proper working condition.
- e. Sediments resulting from vehicle washing at the project site will be disposed of in compliance with State and County regulations governing disposal of construction waste.

4. Comment 4 - Regarding Consistency with Community Plan provisions

We acknowledge your letter comment of June 2, 2004 which states: "After further consultation with the Department of Water Supply (DWS), the Department [of Planning] notes that this DEA is for an exploratory well to determine the developable ability as a potable water resource. At this time, no water will be transmitted, and as such, the exploratory well conforms with the objectives and policies of the Makawao-Pukalani-Kula Community Plan."

We also note that subsequent development of the subject exploratory well will require further analysis in the environmental assessment, which will be prepared

The Honorable Michael W. Foley
Page 3
JUN 24 2004

for a production well. The purpose of addressing this concern is to ensure consistency with the objectives and policies of the Makawao-Pukalani-Kula Community Plan.

5. Comment 5 - Regarding Cultural Assessment

A Cultural Impact Assessment is normally prepared for projects to assess the potential for negative adverse impacts to cultural resources including use of the site for traditional religious, spiritual, recreational, or related gathering practices. The subject project, however, involves use of an existing developed and secured site, which is a designated public facility, involved in the storage and supply of potable water. As a result, few to no opportunities are available for use of the site for traditional or contemporary cultural practices to occur. In addition, the County of Maui is conducting a facility vulnerability assessment to determine if current measures to secure facilities, such as the subject site, are sufficient or if additional measures are required. Post "September 11, 2001" concerns for the security of public infrastructure is expected to require this continued restriction from public entry and use, with additional measures to be employed as needed.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter will be reproduced in the forthcoming Final EA.

Should you have any questions or comments, please contact Mr. Andrew Monden of the Planning Branch in Honolulu at 587-0229.

Sincerely,



for ERIC T. HIRANO
Chief Engineer

DI:ek

c: Gail Atwater, R.M. Towill Corporation

GEN-6 (EIS)



May 17, 2004

Gail Atwater, AICP
R.M. Towill Corporation
420 Waiakamilo Road - Suite 411
Honolulu, HI 96817

Dear Ms. Atwater:

**Re: Central Maui (Maui Meadows) Exploratory Well
Wailea, District of Makawao, Maui, Hawaii**

Thank you for the opportunity to comment on the April 2004 Draft EA for the Central Maui (Maui Meadows) Exploratory Well. We have reviewed the subject document and have the following comments:

1. On page 26, Paragraph 3.5.1, Electrical Service, the DEA states that an existing power line provides electricity to the Maui Meadows Tank Site No. 3. A recent field survey conducted by Maui Electric Company, Limited (MECO) indicates that electrical service does not exist at the site.
2. At the earliest practical opportunity, a meeting between DLNR's electrical consultant and MECO's Engineering Department is encouraged in order that the project's electrical requirements may be verified and electrical service may be timely provided.

Our point of contact for this project is Dan Takahata, Staff Engineer, MECO Engineering Department (872-2385). I suggest your staff and consultant deal directly with Dan to coordinate MECO's continuing input in this project.

Sincerely,

Kirk Tomita
Senior Environmental Scientist

cc: OEQC
Eric T. Hirano (DLNR/Engineering)

WINNER OF THE EDISON AWARD
FOR DISTINGUISHED INDUSTRY LEADERSHIP



LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

ENGINEERING DIVISION
PO BOX 373
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
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FORESTRY AND WILDLIFE
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

JUN 24 2004

Mr. Kirk Tomita
Senior Environmental Scientist
Hawaiian Electric Company, Inc.
Post Office Box 2750
Honolulu, Hawaii 96840

Dear Mr. Tomita:

**Draft Environmental Assessment for Job No. G23CM11A
Central Maui (Maui Meadows) Exploratory Well
TMK: 2-1-008:057, Kihei, Island of Maui, Hawaii
Reference: GEN-6 (EIS)**


Thank you for your letter of May 17, 2004, commenting on the above-referenced Draft Environmental Assessment (EA). We offer the following responses in respective order of your comments:

1. We appreciate your calling to our attention Subsection 3.5.1 Electrical Service on page 26 of the Draft Environmental Assessment, which indicates that electricity was provided to the Maui Electric Company, Limited (MECO). However, a recent field survey conducted by MECO indicated that electrical services do not exist at the site. We will correct the statement in the Final Environmental Assessment.
2. We will also on your recommendation, arrange a meeting with our electrical consultant and MECO's Engineering Department so that the project's electrical requirements may be verified and electrical service may be provided in a manner that will meet project time constraints.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter will be reproduced in the forthcoming Final EA.

Should you have any questions or comments, please contact Mr. Andrew Monden of the Planning Branch at 587-0229.

Sincerely,


For ERIC T. HIRANO
Chief Engineer

DL:ek

c: Gail Atwater, R.M. Towill Corporation

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 536-4185
E-mail: oeqc@health.state.hi.us

May 21, 2004

Mr. Eric Hirano
Department of Land and Natural Resources
State of Hawaii
1151 Punchbowl Street, Room 221
Honolulu, Hawaii 96813

Ms. Gail Atwater
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817

Dear Mr. Hirano and Ms. Atwater:

The Office of Environmental Quality Control has reviewed your draft environmental assessment for Central Maui Meadows Exploratory Well situate at TMK 2-1-08-57 in the judicial district of Wailuku, and offers the following comments for your consideration and response.

1. *Cultural Impact Assessment and Water Well Development Guidelines*: Please review guidance on cultural impact assessment and water well development contained in our Guidebook on the Internet at <http://www.state.hi.us/health/oeqc/index.html>. Discuss the sustainable yield of the Kamaole Aquifer system, as well those topics ripe for discussion in the water well guidance document.

Thank you for the opportunity to comment. If there are any questions, please call Mr. Leslie Segundo, Environmental Health Specialist, at (808) 586-4185.

Sincerely,

A handwritten signature in cursive script that reads "Genevieve Salmonson".
GENEVIEVE SALMONSON
Director

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
PO BOX 373
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

JUN 24 2004

TO: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control

FROM: ~~For~~ Eric Hirano, Chief Engineer *Andrew M. Monden*

SUBJECT: Draft Environmental Assessment for Job No. G23CM11A, Central Maui (Maui Meadows) Exploratory Well, TMK 2-1-008:057, Kihei, Island of Maui, Hawaii

Thank you for your letter of May 21, 2004, commenting on the above-referenced Draft Environmental Assessment (EA). We offer the following responses in respective order of your comments:

1. We acknowledge your comment regarding the cultural impact assessment. The Final EA will contain additional discussion of possible impacts on historic, cultural or traditional resources and actions to be taken if any such resources are found within the project area.
2. We concur with your "Guidelines for Assessing Water Well Development Projects" that state:
"Environmental Assessment for exploratory wells should not need to comply with all the information requirements below because some of the information will not be available until the well is tested. Should the exploratory well receive positive results and demonstrate production capability, a second environmental assessment for the production well should be prepared to comply with all the information requirements."
The Draft EA states: "If the exploratory well yields results indicate it would be a successful production well, the impacts of a permanent well would be addressed in a separate EA. The analysis of impact on the sustainable yield of the underlying Kamaole aquifer will be addressed at that time."
3. You requested information about the sustainable yield of the Kamaole Aquifer, which is 11 million gallons per day. This information is also provided in the Draft EA, Figure 3-3, Aquifers of the Island of Maui.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter will be reproduced in the forthcoming Final EA.

Should you have any questions or comments, please contact Mr. Andrew Monden of the Planning Branch at extension 7-0229.

DI:ek

c: Gail Atwater, R.M. Towill Corporation

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EPO-04-084

April 27, 2004

Ms. Gail Atwater
R.M. Towell Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817

Dear Ms. Atwater:

SUBJECT: Central Maui (Maui Meadows) Exploratory Well
Wailea, District of Makawao, Maui, Hawai'i

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

Safe Drinking Water Branch Dated 3/11/04

The Safe Drinking Water Branch administers programs in the areas of: 1) public water systems; 2) underground injection control; and 3) groundwater protection. Our general comments on projects are as follows.

Public Water Systems

- Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules, Title 11, Chapter 20, titled Rules Relating to Potable Water Systems.
- All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment. This requirement involves demonstration that the system will have satisfactory technical, managerial and financial capacity to enable the system to comply with safe drinking water standards and requirements.
- Projects that propose development of new sources of potable water serving or proposed to serve a public water system must comply with the terms of Section 11-20-29 of Chapter 20. This section requires that all new public water system

Ms. Gail Atwater

April, 27 2004

Page 2

sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.

- The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the state of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.
- All sources of public water system sources must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.
- Projects proposing to develop new public water systems or proposing substantial modifications to existing public water systems must receive approval by the Director of Health prior to construction of the proposed system or modification. These projects include treatment, storage and distribution systems of public water systems. The approval authority for projects owned and operated by a County Board or Department of Water or Water Supply has been delegated to them.
- All public water systems must be operated by certified distribution system and water treatment plant operators as defined by Hawaii Administrative Rules, Title 11, Chapter 11-25 titled; Rules Pertaining to Certification of Public Water System Operators.
- All projects which propose the use of dual water systems or the use of a non-potable water system in proximity to an existing potable water system to meet irrigation or other needs must be carefully design and operate these systems to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the potable system. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the potable water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption on non-potable water. Compliance with Hawaii Administrative Rules, Title 11, Chapter 11-21 titled; Cross-Connection and Backflow Control is also required.

Ms. Gail Atwater

April, 27 2004

Page 3

- All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawai'i Source Water Assessment Plan) within the source water protection area of an existing source of water for a public water supply should address this potential and activities that will be implemented to prevent or reduce the potential for contamination of the drinking water source.
- For further information concerning the application of capacity, new source approval, operator certification, source water assessment, backflow/cross-connection prevention or other public water system programs, please contact the Safe Drinking Water Branch at 586-4258.

Underground Injection Control (UIC)

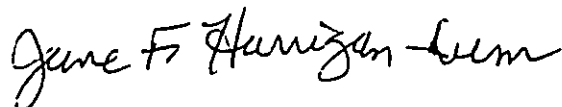
- Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawai'i Administrative Rules, Title 11, Chapter 11-23, titled Underground Injection Control (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.
- Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operation limitations, monitoring and reporting requirements, and other facility management and operational conditions. A complete UIC permit application form is needed to apply for a UIC permit.
- A UIC permit can have a valid duration of up to five years. Permit renewal is needed to keep an expiring permit valid for another term.

For further information about the UIC permit and the Underground Injection Control Program, please contact the UIC staff of the Safe Drinking Water Branch at 586-4258.

Groundwater Protection Program

- Projects that propose to develop a golf course are asked to use the Guidelines Applicable to Golf Courses in Hawai'i (Version 6) in order to address certain groundwater protection concerns, as well as other environmental concerns.

Sincerely,



JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

c. SDWB

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

ENGINEERING DIVISION
PO BOX 373
HONOLULU, HAWAII 96809

JUN 24 2004

PETER T. YOUNG
CHAIRPERSON
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

TO: Ms. June F. Harrigan-Lum, Manager
Department of Health
Environmental Planning Office

FROM: For Eric Hirano, Chief Engineer *Andrew M. Monden*

SUBJECT: Draft Environmental Assessment for Job No. G23CM11A, Central Maui (Maui Meadows) Exploratory Well, TMK: 2-1-008:057, Kihei, Island of Maui, Hawaii

Thank you for your letter of April 27, 2004, regarding the above-referenced Draft Environmental Assessment. We acknowledge the comments made by the Safe Drinking Water Branch of your department and provide the following responses in respective order of their comments.

1. The proposed project is considered part of a public water system and will conform to Hawaii Administrative Rules, Title 11, Chapter 20, titled Rules Relating to Potable Water Systems and Chapter 11-25, titled, Rules Pertaining to Certification of Public Water System Operators. The exploratory well will be drilled and tested. Should test results prove favorable, it will be developed into a production well and dedicated to the County of Maui, Department of Water Supply (DWS). The project site is located on DWS land at a site formerly used for a potable water tank.
2. The exploratory well is not considered a potable water source and therefore will not require approval as such. Any future production well at the project site will be covered under a separate Environmental Assessment.
3. This project does not propose the use of dual water systems or the use of a non-potable water system in proximity to an existing potable water system.
4. This project does not involve an underground injection well. Therefore the cited regulations are not applicable.
5. This project does not involve development of a golf course. Therefore the cited guidelines applicable to golf courses are not relevant to this project.

We appreciate your interest and participation in the public review phase of the Draft EA. Your letter will be reproduced in the forthcoming Final EA.

Should you have any questions or comments, please contact Mr. Andrew Monden of the Planning Branch at extension 7-0229.

DI:ek

c: Gail Atwater, R.M. Towill Corporation

References

American FactFinder. 2002. 2000 Census, SF1 and SF3; 1990 Census, SF1.

City and County of Honolulu, Board of Water Supply. March 1995. Oahu Water Plan, 5th Edition. Honolulu, Hawaii.

City-Data.com. 2004. "Makawao," "Pukalani," Wailea-Makena."

County of Maui, Department of Water Supply. 2003B. "Water Use and Development Plan," in: <http://mauiwater.org/planning.html#wudp>

County of Maui. Maui County Code, Ordinance 3110.

County of Maui, Planning Department. 2000. County of Maui General Plan. Wailuku, Maui.

County of Maui, Planning Department, by R. M. Towill Corporation, 2003. Maui Public Facilities Plan. Wailuku, Maui.

County of Maui, Planning Department. 1996. Makawao-Pukalani-Kula Community Plan. Wailuku, Maui, Hawaii.

County of Maui, Planning Department. 2000. Kihei-Makena Community Plan. Wailuku, Maui, Hawaii.

Federal Emergency Management Agency. September 1989. Flood Insurance Rate Map.

Geolabs, Inc. 2003. Additional Geotechnical Engineering Exploration, Sunset Heights. Honolulu, Hawaii.

Juvik, Sonia and James Juvic. 1998. Atlas of Hawaii, Third Edition. University of Hawaii Press, Honolulu.

Langenheim and Clague. 1987. In: The Hawaiian Emperor, Volcanism in Hawaii: U.S. Geological Survey Professional Paper 1350, Vol. 1.

McDonald, G.A., and A.T. Abbott. 1977. Volcanoes in the Sea.

Macdonald. 1956. The Structure of Hawaiian Volcanoes. Verhandelingen Van Het Kononklijk Nederlandsh Geologisch Mijnbouwkundig Genootschap, vol.16.

Maui Meadows. 2004.

<http://www.resultsrealestate.com/luxury/properties/mauimeadows/mauimeadows.html>

Public Health Regulations, Chapter 20, Title II, Potable Water Systems. Honolulu, Hawaii.

State of Hawaii, Department of Business, Economic Development, and Tourism. 1999. State of Hawaii Data Book 1999. Honolulu, Hawaii.

State of Hawaii, Department of Land and Natural Resources, Commission on Water Resource Management, and The National Park Service, Rivers and Trails Conservation Assistance Program. 1990. Hawaii Stream Assessment, A Preliminary Appraisal of Hawaii's Stream Resources. Honolulu, Hawaii.

State of Hawaii, Department of Land and Natural Resources, Commission on Water Resource Management. 2003A. "Role of the Commission" in: <http://www.hawaii.gov/dlnr/cwrm/cwrm.htm>

State of Hawaii, Department of Business, Economic Development and Tourism. 2002. Census 2000, Maui County CDP, Makawao CDP, Pukalani CDP and Wailea-Makena CDP.

State of Hawaii, Department of Land and Natural Resources, Land Division, by Water Resource Associates, Inc. April 7, 2003. Preliminary Site Selection Report for Central Maui (Maui Meadows) Exploratory Well.

State of Hawaii, Department of Business, Economic Development and Tourism. 2001. "Census 2000" in: http://www.hawaii.gov/dbedt/census2k/pop_2000_sum.pdf. Honolulu, Hawaii.

State of Hawaii, Department of Land and Natural Resources, Land Division, by Water Resource Associates, Inc. October 13, 2003. Final Site Selection Report for Central Maui (Maui Meadows) Exploratory Well.

State of Hawaii, Department of Business, Economic Development and Tourism. 2003B. Agricultural Lands of Importance to the State of Hawaii. www.state.hi.us/dbedt/gis/maps/alish.jpg

State of Hawaii. Hawaii Revised Statutes, Chapter 226, Hawaii State Plan. Honolulu, Hawaii.

United States Census. 2000. Summary Tape File 3.

U.S. Environmental Protection Agency. 2003. "Designated Sole Source Aquifers in EPA Region IX" in: <http://www.epa.gov/safewater/swp/ssa/reg9.html>

U.S. Environmental Protection Agency. 2003. "FEMA Flood Designations and Explanations" in: http://www.pbcgov.com/pubsafety/eoc/floodawareness/main/fema_flood_designations.htm

U.S. Geological Survey, Hawaiian Volcano Observatory. 1997. "Hazards in Hawaii" in: <http://www.hvo.wr.usgs.gov/earthquakes/hazards/>

U.S. Department of Agriculture, Soil Conservation Service. 1972. Soil Survey of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. Honolulu, Hawaii.

U.S. Environmental Protection Agency. Safe Drinking Water Act of 1974 (Public Law 93-523, 42 U.S.C. 300 et. seq). Washington, D.C.

U.S. Environmental Protection Agency, 1999. "Understanding the Safe Drinking Water Act" in: <http://www.epa.gov/safewater/sdwa/understand.pdf>

U.S. Environmental Protection Agency. 2003. "Well Tutorial" in: <http://www.epa.gov/seahome/well/src/new6.htm>

U.S. Fish and Wildlife Service, Endangered Species Act of 1973, Section 2(b), "Purposes." in: <http://endangered.fws.gov/esa.html#Lnk02>