

Draft Environmental Assessment

HALA‘ULA EXPLORATORY WELL

PREPARED FOR:
Department of Water Supply
County of Hawai‘i



MAY 2009

PROJECT SUMMARY

Project:	HALA‘ULA EXPLORATORY WELL
Applicant/Approving Agency:	Department of Water Supply County of Hawai‘i Contact: Lawrence E. Beck, P.E. (808-961-8070 x260) 345 Kekūanaō‘a Street., Suite 20, Hilo, HI 96720
Location:	North Kohala District; Island of Hawai‘i
Tax Map Keys:	5-3-004:001
Parcel Area:	1,070 acres
Project Site Area:	Approximately 0.99 acres
State Land Use District:	Agriculture
County Zoning:	Ag-20a
Proposed Action:	The Department proposes to drill, case, and pump test an exploratory well. The exploration would help DWS determine if the well produces water of sufficient quality and quantity to warrant its development into a production source for its Hāwī-Hala‘ula Water System.
Associated Actions Requiring Environmental Assessment:	Proposed use of County land, County and federal funds.
Consultation:	The State Historic Preservation Division was consulted during the preparation of this EA. The document is also being sent to the individuals and agencies listed in Table 7.1 for review and comment.
Required Approvals:	<ul style="list-style-type: none"> • Grading Permit, Hawai‘i County • Well Construction Permit, Commission on Water Resource Management • Construction Noise Variance (possible)
Anticipated Determination:	Finding of No Significant Impact
Consultant:	Planning Solutions, Inc. 210 Ward Avenue, Suite 330 Honolulu, HI 96814 Contact: Perry White (808) 550-4483

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1.0 PURPOSE OF & NEED FOR THE PROJECT

1.1 INTRODUCTION

The Hawai‘i County Department of Water Supply (DWS) is responsible for the development, operation, and maintenance of the municipal water systems throughout the Island of Hawai‘i. DWS proposes to construct an exploratory well and perform the pump and water quality testing needed to confirm the suitability of the exploratory well for potable water supply to serve the Hāwī and Hala‘ula Water System. It would remove existing vegetation and construct a small well-drilling pad and security fence as part of the project.

DWS may seek Federal funding for the project under the Drinking Water State Revolving Fund (DWSRF) program administered by the Safe Drinking Water Branch of the State Department of Health. Because allocation of DWSRF funds would constitute a Federal action, this *Environmental Assessment* has been prepared under the dual legal authorities of Chapter 343, Hawai‘i Revised Statutes/Hawai‘i Administrative Rules §11-200 and the National Environmental Policy Act (NEPA). It incorporates the content required to comply with the Hawai‘i DWSRF program (see Section 4.1.4 for details).

1.2 PURPOSE OF & NEED FOR THE PROJECT

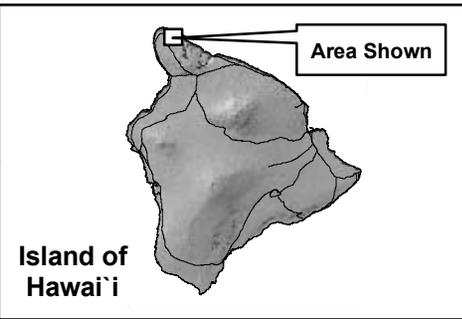
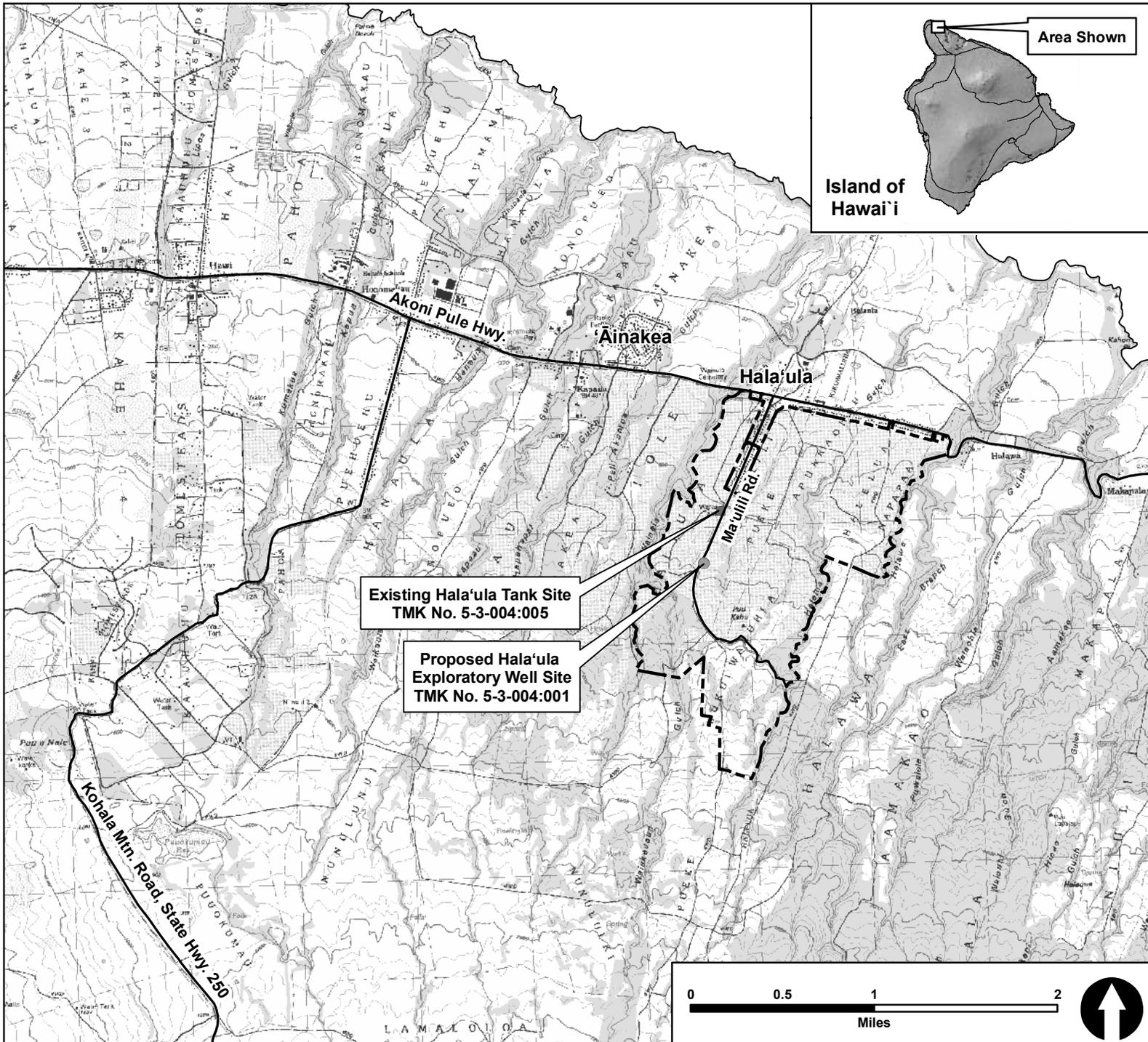
1.2.1 LOCATION AND EXISTING USE OF THE PROPOSED SITE

The proposed Hala‘ula Exploratory Well is located near the communities of Hala‘ula and ‘Āinakea in the North Kohala District of the Island of Hawai‘i (TMK 5-3-004:001, see Figure 1.1). The proposed site is on a private parcel owned by Kohala Preserve Conservation Trust, LLC. Currently, this area is a producing macadamia nut orchard and is a little over a quarter of a mile south of and uphill from the DWS’ existing 0.10 MG Hala‘ula Tank. Access to the well site is via Ma‘ulili Road off Akoni Pule Highway. If the proposed well produces water of adequate quantity and quality, DWS would then pursue the approvals needed to develop the exploratory well into a production well, add storage capacity to the site, and construct a pipeline connecting it with the existing municipal water system.

1.2.2 EXISTING HĀWĪ-HALA‘ULA WATER SYSTEM

The Hala‘ula Water System currently has no wells of its own. It is connected to, and receives all its water supply from, the two deep wells in the neighboring Hāwī Water System (Hāwī No. 1 and Hāwī No. 2, see Figure 1.2). The total rated capacity of these two wells together is 1.58 million gallons per day (MGD; see Table 1.1), however DWS regulations require that each well have a 33% reserve, so only 1.06 MGD is considered available water supply. In 2003, the average production from these wells was 0.62 MGD (Beck 2006).

The Hala‘ula Water System is a small one that serves customers in the ‘Āinakea Village subdivision, the community of Hālawā, and users along Akoni Pule Highway, Old Hala‘ula Mill Road and Ma‘ulili Road. These communities are from 300 to 650 feet above mean sea level. There is no pumping capacity in this water system and only one operational zone, one storage tank and one pressure reduction valve. In total, the Hala‘ula Water System consists of just 5 miles of pipe. Because the Hala‘ula Water System is completely dependent upon the Hāwī Water System for its water source, the following discussion frequently refers to a combined Hāwī-Hala‘ula Water System.



- Legend:**
-  Proposed Hala'ula Exploratory Well Project Parcel Boundary
 -  Roadways

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 Dept. of Water Supply,
 County of Hawai'i

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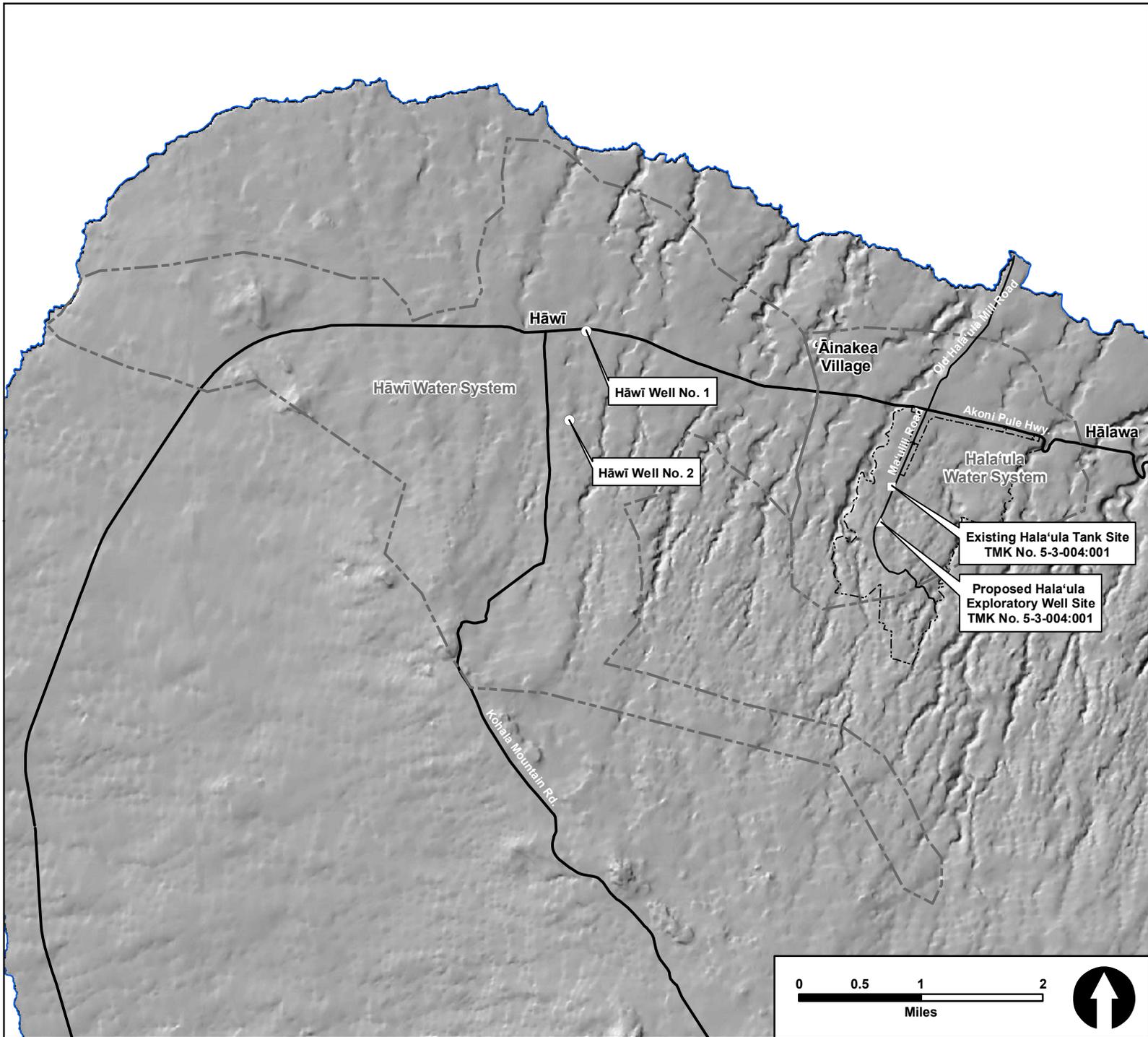
Sources:

- TNWRE
- State of Hawai'i GIS
- USGS 7.5' Quad Map

Figure 1.1:

Location Map

Hala'ula Exploratory Well



Legend:

-  DWS Water System Boundaries
-  Project Site Parcel

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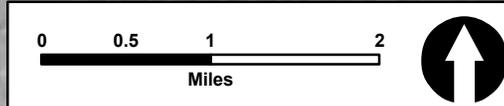
Sources:

- TNWRE
- State of Hawai'i GIS
- USGS 7.5' Quad Map

Figure 1.2:

Existing Hāwī-Hala'ula Water System

Hala'ula Exploratory Well



PURPOSE & NEED

Table 1.1 Hāwī Municipal Water Wells

	Well	
	Hāwī #1	Hāwī #2
Well Number	7449-02	7349-01
Parcel TMK	5-5-002:089	5-5-016:018
Year Drilled	1975	1993
Casing Diameter (in.)	12	18
Ground Elevation (ft. MSL)	541	791
Depth Below Ground Level (ft.)		
Total Drilled	591	847
Solid Casing	581	785
Perforated Casing	-	847
Flows (MGD)		
Test Maximum	1.166	2.376
Installed Pump Capacity	0.576	1.008
Supply Rating	0.384	0.672
Source: State of Hawai‘i GIS		

1.2.3 NEED FOR WELL EXPLORATION IN THE HALA‘ULA WATER SYSTEM

As noted above, there are currently no existing municipal water sources in the Hala‘ula Water System. Adding a well source in the Hala‘ula area would increase the reliability of service to customers by removing the complete dependency on the interconnecting pipeline, act as a backup source to the Hāwī Water System, and reduce the costs associated with depending on water from source wells in the Hāwī system.

DWS is committed to providing the additional needed source capacity to its Hala‘ula System, but because the nature and extent of the groundwater resources in the area are unknown, DWS cannot anticipate whether the resource is adequate for production or what size pump and storage tank would be appropriate until it constructs and tests the proposed exploratory well. DWS selected the proposed location because of its proximity to the communities that would be served, its location uphill from those communities, and the recommendation from consulting hydrology experts that a likely adequate source of potable water exists below the site. The site is also desirable as it helps spread the load of the Hāwī Aquifer. Should the exploratory well prove to be a viable source of potable water, it would also serve as a backup to the two wells supporting the Hāwī- Hala‘ula Water System.

1.3 OBJECTIVES OF THE PROPOSED ACTION

DWS’ objectives for the proposed project include the following:

- Determine the amount of water that can be obtained from a well located on a site from which a new source could readily serve the Hala‘ula Water System, and
- Test water from the prospective source to confirm that the quality is suitable for potable use.

1.4 ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT

The remainder of this EA is organized as follows:

- Chapter 2 describes the proposed action in detail and outlines the alternatives analyzed in this EA, as well as other alternatives that were considered during earlier planning phases.
- Chapter 3 describes the existing environment and analyzes the potential for impacts on natural, cultural, and socioeconomic resources. It also outlines strategies for minimizing and mitigating unavoidable adverse effects.
- Chapter 4 discusses the consistency of the proposed exploratory well with relevant plans, policies, and controls at local, regional, state, and federal levels.
- Chapter 5 provides justification for the anticipated determination of a Finding of No Significant Impact (FONSI) by considering each individual significance criterion with respect to the proposed project.
- Chapters 6 and 7, respectively, list the references cited and parties consulted during preparation of this EA.

PURPOSE & NEED

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2.0 PROPOSED ACTION & ALTERNATIVES CONSIDERED

2.1 DESCRIPTION OF THE PROPOSED ACTION

2.1.1 WELL INSTALLATION AND TESTING

DWS proposes to construct a new exploratory well on private property in the North Kohala District of the Island of Hawai'i. DWS would drill, case and pump test the well to determine if its yield is adequate and the quality suitable for use as drinking water. A 120' by 200' well drilling pad and short well pad access road would be constructed to facilitate the drilling and testing. Should the exploratory well be determined to be a viable source of water, DWS would pursue the approvals necessary to convert the well into a production facility, including preparation of an environmental assessment. Figure 2.1 contains a site plan showing the proposed layout; Figure 2.2 presents photographs showing the existing conditions on the property. Details concerning the site preparation, well drilling, pump installation, and testing are provided below.

Site Preparation. DWS would acquire from the property owner the development rights to an area of approximately 370' X 394' (3.35 acres) for the project. Approximately 62 trees would have to be removed and about 43,000 square feet of orchard land cleared to make room for the well pad (see Figure 2.3). DWS estimates that site grading would require the excavation of 3,110 cubic yards of soil and the embankment of 2,725 cubic yards (see Figure 2.4). The well pad itself would then be compacted and covered with gravel to permit efficient operation of the drilling and testing equipment.

Well Drilling. Preliminary plans call for the well to be drilled from the project site elevation (planned finish grade at the well site about +773 feet MSL) to an elevation of less than -52 feet MSL. Groundwater is believed to occur at this location at an elevation of about +23 feet MSL. The borehole would have a diameter of 21 inches. As shown in Figure 2.5, solid steel casing (18" inner diameter) would be installed in the upper 750 feet of the hole. Below that, approximately 75 feet of perforated casing would extend into the aquifer. The upper 740 feet of the annulus space between the outside of the boring and the solid casing would be filled with cement grout. The exploratory well would be drilled and tested using diesel-powered equipment. Hence, it would not require electrical power during the exploratory phase of development.

Pump Testing. Pump testing would be at rates up to 700 gallons per minute (GPM) and may continue up to 5 consecutive days. The water produced from these tests would be discarded into an irrigation ditch or used for irrigation, as determined by the landowner.

Schedule. Table 2.1 lists the preliminary project schedule.

Table 2.1 Preliminary Project Schedule

<i>Task</i>	<i>Approximate Duration</i>	<i>Estimated Completion Date</i>
Final Design	1 month	June 1, 2009
Design Review	2 months	August 1, 2009
Bid Solicitation	2 months	October 1, 2009
Bid Evaluation, Contracting, Notice-to-Proceed	1 month	November 1, 2009
Well Construction and Testing	6 months	May 1, 2010
Source: Tom Nance Water Resource Engineering		

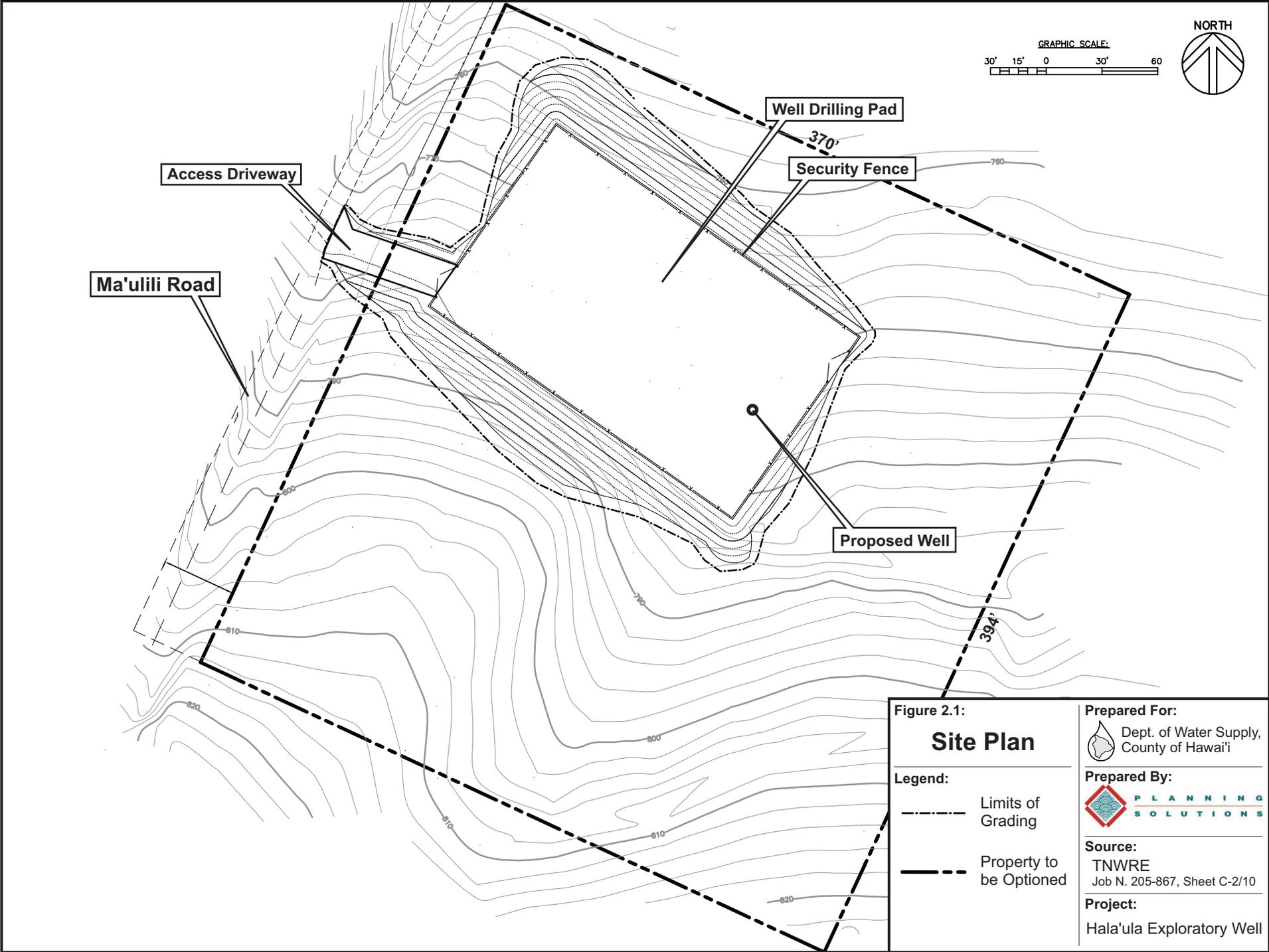


Figure 2.1:

Site Plan

Legend:

- Limits of Grading
- Property to be Optioned

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Source:
 TNWRE
 Job N. 205-867, Sheet C-2/10

Project:
 Hala'ula Exploratory Well

Figure 2.1 Site Plan 2009-03-27.dwg



A. View of access road, looking mauka from existing water tank .



B. View from access road looking makai from near the proposed well site.

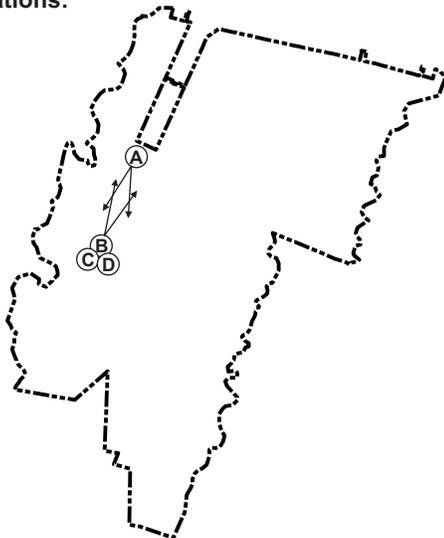


C. View across macadamia nut orchard in the vicinity of proposed well site.



D. View makai through macadamia nut orchard from the vicinity of proposed well site.

Photograph Locations:



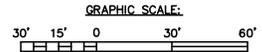
**Figure 2.2:
Photographs of
Exploratory Well Site**

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Prepared By:
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SOLUTIONS**

Source:
 Planning Solutions, Inc.
 Photos taken January 30, 2007

Project:
 Hala'ula Exploratory Well



Entry Way

Limits of Grading

PROPOSED LIMITS OF DEVELOPMENT

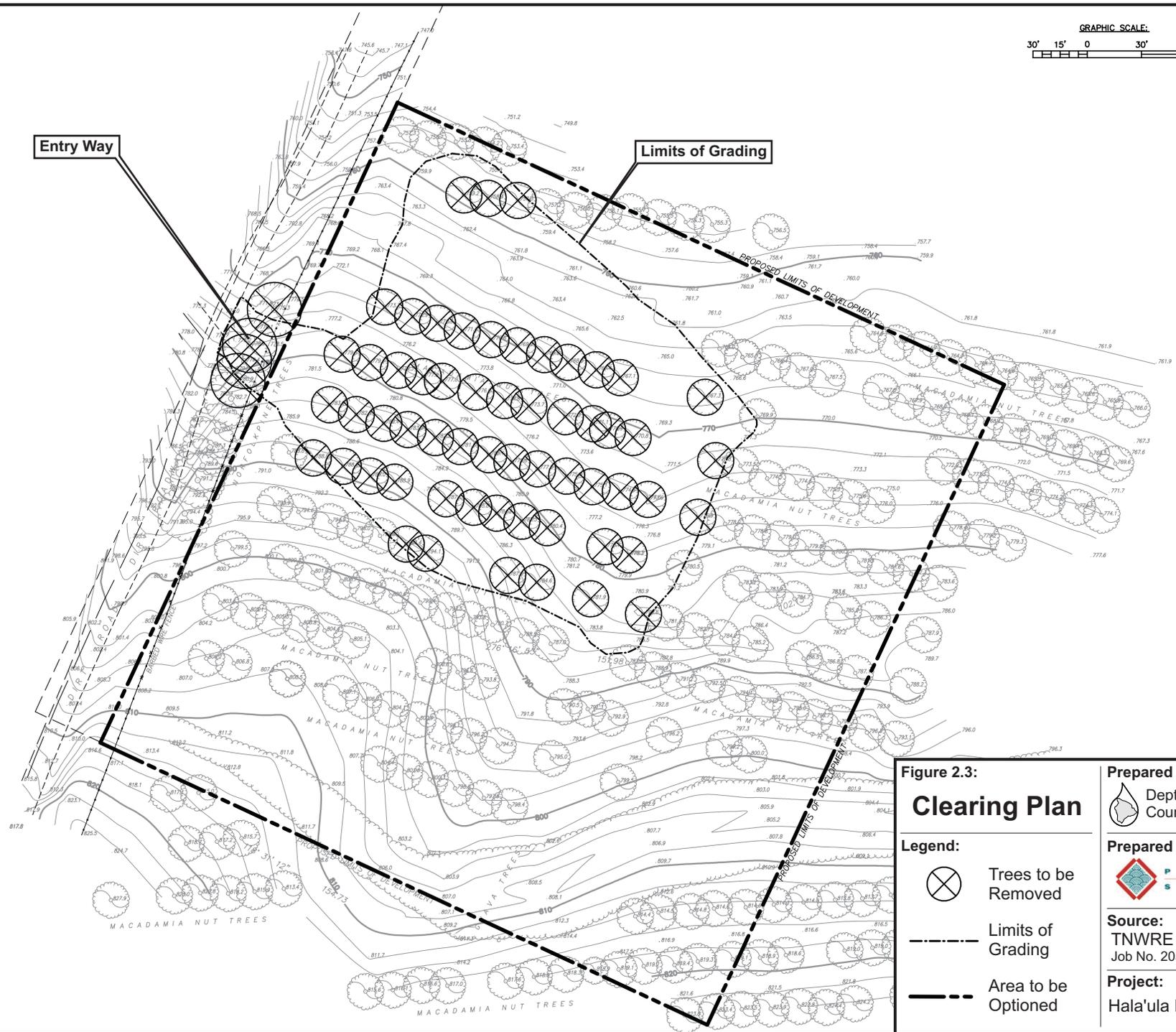
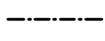


Figure 2.3:
Clearing Plan

- Legend:
-  Trees to be Removed
 -  Limits of Grading
 -  Area to be Optioned

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Source:
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 Job No. 205-867, Sheet C-4/10

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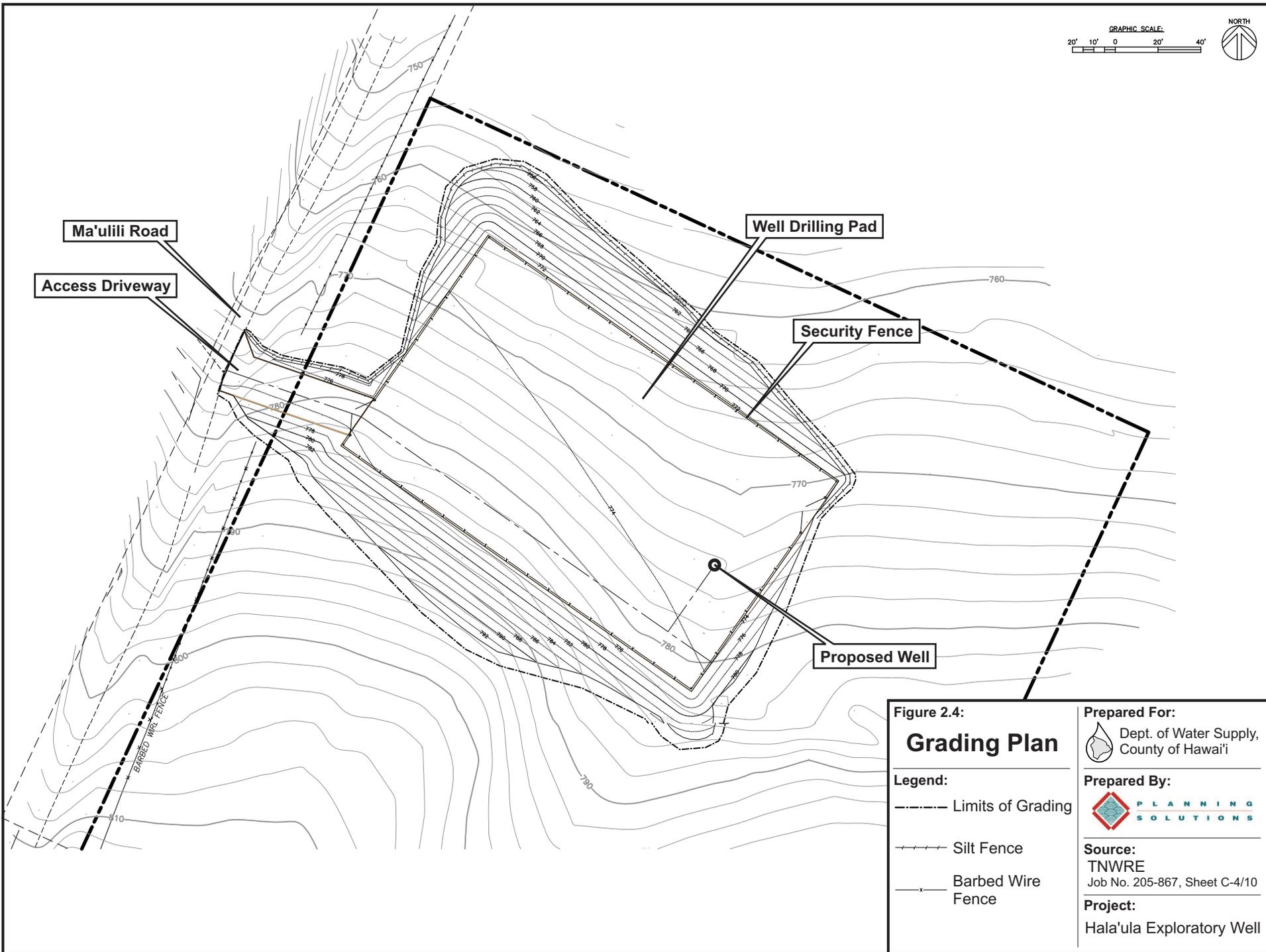
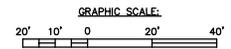


Figure 2.4:
Grading Plan

- Legend:**
- Limits of Grading
 - - - - - Silt Fence
 - x - Barbed Wire Fence

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Source:
 TNWRE
 Job No. 205-867, Sheet C-4/10

Project:
 Hala'ula Exploratory Well

Figure 2.4 Grading Plan 2009-03-30.cdr

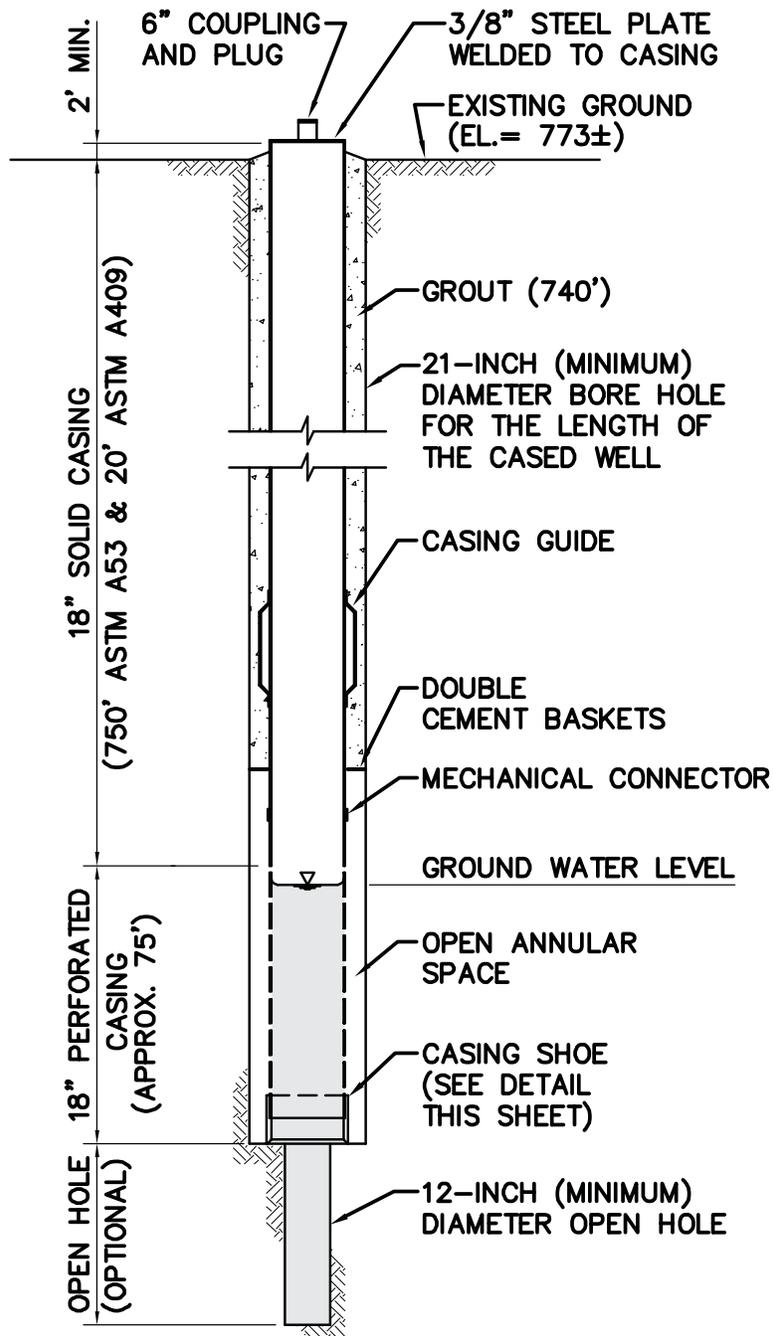


Figure 2.5:
Well Shaft Sections

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Source:
TNWRE
Job No. 2005-867, Sheet C-9/10

Project:
Hala'ula Exploratory Well

2.1.2 PROJECT COST

Table 2.2 presents preliminary estimates of the construction costs. The project would be funded by the Department of Water Supply, County of Hawai'i. The proposed exploratory well's development and pump testing has been authorized and identified as DWS Job No. 2005-867, Hala'ula Well Development, Phase 1. It may also be funded by Federal funds through the State of Hawai'i's Drinking Water State Revolving Fund (DWSRF) program, which would constitute a Federal action and would require the project to meet all of the Hawai'i DWSRF program requirements (see Section 4.1.4 for further information).

Table 2.2 Preliminary Project Cost Estimate

<i>Item</i>	<i>Estimated Cost</i>
Exploratory Well Construction	\$750,000
Well Testing	\$138,000
Other Well Development Costs	\$234,000
Contingency (Approx. 10%)	\$114,000
Total Cost	\$1,236,000
Source: Tom Nance Water Resource Engineering	

2.2 FRAMEWORK FOR CONSIDERATION OF ALTERNATIVES

Title 11, Chapter 200 of the Hawai'i Administrative Rules (HAR §11-200) contains the Department of Health's Environmental Impact Statement Rules. HAR §11-200-5 deals with "agency actions" such as the one that DWS is proposing. It requires that, for all agency actions that are not exempt as defined in HAR §11-200-8, the agency must consider environmental factors and available alternatives and disclose these in an environmental assessment or environmental impact statement. HAR §11-200-9 requires the proposing agency to analyze alternatives, in addition to the proposed action in the environmental assessment. HAR §11-200-10 establishes the required contents of environmental assessments. Among the requirements listed, HAR §11-200-10 (6) calls for an identification and summary of impacts and alternatives considered (emphasis added).

In accordance with these requirements, DWS considered a number of alternatives before determining that the proposed project is the best course of action. These included "No Action", enhanced water conservation, reduced scale action, alternate locations, and delayed action. DWS concluded that only two of these alternatives, merit consideration in the impact analysis portion of this Draft EA. They are "No Action" (as required by Chapter 343), and the proposed action of constructing and testing the Hala'ula Exploratory Well as currently designed. The following two subsections describe the alternatives considered in preparation of this Draft EA and the criteria DWS used to decide whether to include them in the impact analysis presented in Chapter 4.

2.3 ALTERNATIVES ADDRESSED IN DETAIL

2.3.1 PROPOSED ACTION: DRILLING, CASING, & PUMP TESTING EXPLORATORY WELL

This alternative consists of the proposed action as described in Section 2.1 above. DWS believes constructing and testing an exploratory well at the proposed site would best enable it to assure that adequate source capacity remains available for the Hala'ula Water System, and thus it represents their preferred course of action.

2.3.2 NO ACTION ALTERNATIVE

The “No Action” Alternative consists of not constructing an exploratory well at the Hala‘ula site. This would go against what has already been recommended in the DWS’ Water Master Plan. Hence, “No Action” is not a viable alternative. It is evaluated in the Draft EA solely to fulfill the requirements of HRS Chapter 343, HAR 11-200, and NEPA.

2.4 ALTERNATIVES ELIMINATED FROM DETAILED ANALYSIS

2.4.1 CONSTRUCT AND TEST WELLS IN ALTERNATE LOCATIONS

Because the groundwater flux through the area is believed to be high, it is likely that wells drilled in other locations would also be productive. However, the proposed site has several characteristics that make it unlikely that a different location would be superior from an economic, environmental, or operational viewpoint. These include:

- The proposed exploratory well site’s location uphill from the existing 0.10 MG Hala‘ula Tank avoids additional costs associated with building and operating booster pumps.
- The exploratory well site’s elevation will make it possible at the site to install a storage reservoir with an overflow elevation of 810 feet. This will match the overflow elevation of the existing storage tank in Hāwī, permitting efficient, gravity-driven flows from either tank to the other. The connection between the reservoirs will allow for redundancy and reliability, especially in the event of pump failure or when one reservoir becomes temporarily disabled.
- The proposed site’s location in an existing agricultural area means that construction and operation of the proposed facilities will not conflict with other uses of the area.
- The proposed well site’s proximity to the existing water transmission and distribution system avoids the need for substantial new water line construction.

A detailed analysis of potential environmental impacts from development of alternative water sources was beyond the scope of this assessment. However, in view of the absence of adverse effects documented above and in Chapter 3, it seems unlikely that other well locations might be better from an environmental standpoint.

2.4.2 CONSTRUCT EXPLORATORY WELL AND PRODUCTION WELL IN ONE PHASE

The proposed project consists only of the exploratory well and related testing. DWS considered combining the exploratory and production well into one project as it has done for many other jobs, but decided against it in this instance. Its decision stemmed from the fact that the capabilities of the resource that the well would tap are more poorly understood than those of the water resource in locations where a combined approach has been used.

2.4.3 DELAYED ACTION

Currently, the Hāwī-Hala‘ula Water System depends entirely upon the two Hāwī wells. Should either of these wells fail for any reason, DWS would not be able to provide sufficient water to its customers in this system. Delay in moving forward with this project would only continue this liability into the future. There are no existing activities or conditions at the site or in the project area that would make delaying the project desirable or that would reduce the impacts associated with it appreciably if delayed. DWS wants to act quickly to ensure that it maintains adequate storage and a safe drinking water supply for its customers in Hala‘ula. Therefore, it does not consider delayed action a viable alternative.

2.4.4 ENHANCED WATER CONSERVATION ALTERNATIVE

The primary purpose of the proposed exploratory well is not to accommodate a substantial increase in demand. Instead, it is to confirm that the resource is present and could be developed when needed. Conserving water will decrease the demand on the existing wells, but it would not provide information concerning the viability of alternate sources of supply. DWS has already requested extensive water conservation measures of its customers countywide, and it is very unlikely that further conservation measures could decrease the demands sufficiently to eliminate the need for the project.

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3.0 EXISTING ENVIRONMENT & PROBABLE IMPACTS

3.1 TOPOGRAPHY, GEOLOGY, AND SOILS

3.1.1 EXISTING CONDITIONS

The Hala‘ula area is on the lower slope of the northeastern flank of the Kohala Mountains. Geologists divide the rocks of the Kohala Volcano into two series. The older, the Pololū Volcanic Series, consists very largely of flows of basalt. Ash layers are rarely found, but near the top of that series they become more numerous. The younger series, the Hāwī Volcanic Series, is separated from the rocks of the Pololū Series by an eroded surface covered with red soil and in places is underlain by as much as 15 meters of decomposed, weathered rock. (Macdonald, Abbott, and Peterson 1983).

The U.S. Soil Conservation Service classifies the soil as ‘Āinakea silty clay loam, 12 to 20 percent slopes. The surface layer is a dark brown silty clay loam about 10 inches thick. The subsoil is dark-brown silty clay loam generally about 20 inches thick. The substratum is soft, weathered basic igneous rock. The surface layer is extremely acidic, and the subsoil is medium to strongly acidic. Runoff is medium, and the erosion hazard is moderate (USDA-NRCS 2008). ‘Āinakea silty clay loam is well suited to agricultural use, and the State has classified the general area as prime agricultural soil.

As previously described, the Hala‘ula site is located within a macadamia nut orchard. The project site slopes consistently downwards from north to south from an elevation of 810 feet at its upper end to 750 feet at the lowest point of the project site, averaging about 15% percent.

3.1.2 PROBABLE IMPACTS

Grading and other land disturbance for the proposed project would require excavation of approximately 3,110 cubic yards of material, but most of this soil (2,725 yd³) will be used as fill on the lower side of the pad; the remainder would be used on the property by the landowner or would be properly disposed at the landowner’s discretion. As noted above, ‘Āinakea silty clay loam is classified as prime agricultural soil even though the land is moderately steep, and the construction of the well pad would preclude its continued agricultural use unless and until the pad is removed.¹

The proposed project would not substantially change exposure to geological hazards or bar the use of significant geological resources. No commercially useful minerals are present.

3.2 HYDROLOGY

3.2.1 EXISTING CONDITIONS

3.2.1.1 Surface Water

The project site is located between two streams designated as perennial by the State of Hawai‘i (State of Hawai‘i, 2002), the Wainai Stream, approximately 1,250 feet to the south-southwest at its closest point and the Halelua Gulch, approximately 3,100 feet to the east. The Wainai Stream watershed, in which the project site is located, encompasses approximately 4.30 square miles and has five existing diversions on it.² Halelua Stream has a drainage area of 2.28 square miles; there are no registered

¹ The contractor would remove approximately 60 macadamia nut trees to allow construction of the exploratory well.

² Taken from *Water Resource Protection Plan*, Section 3, Inventory and Assessment of Resources, June 2008, The Water Resource Protection Plan (WRPP) is one of five major plans that comprise the Hawaii Water Plan (HWP), established pursuant to Chapter 174C, Hawaii Revised Statutes (HRS §174-C) (State Water Code). The Water Resource Protection Plan, together with the Water Quality Plan (WQP), State Water Projects Plan (SWPP), Agricultural Water Use and Development Plan (AWUDP), and the County Water Use and Development Plans (WUDPs), provides the overall guidance and direction for managing Hawaii’s water resources.

EXISTING ENVIRONMENT & PROBABLE IMPACTS

diversions. Neither of these streams is designated by the National Park Service to be a “Scenic River”, (U.S. National Park Service, 2009), and the State Department of Health Clean Water Branch has classified the waters as Inland Class 2 (CWB, 1987). An emptied and overgrown irrigation pond, once fed by the Kohala Ditch, is located approximately 1,400 feet uphill to the south, and an apparently inactive branch of the Kohala Ditch, trending down the hill to the north, is located 500 to 600 feet to the east of the project site.

3.2.1.2 Groundwater

The proposed exploratory well would tap water in the Hāwī Aquifer System as designated by the State Commission on Water Resource Management (CWRM 1995). Along the shoreline, the System extends from Pu‘uepa on the north to Akoakoa Point on the south, a distance of about 12 miles (see Figure 3.2). The sustainable yield of the Hāwī Aquifer System is 27 MGD, while the existing water use (July 2005 estimate) is only 0.582 MGD (Wilson Okamoto, 2008).

3.2.2 PROBABLE IMPACTS**3.2.2.1 Surface Water**

The proposed project does not involve any activities that would alter existing stream channels, wetlands, or other surface water bodies, but construction work would disturb the existing ground cover and create a temporary potential for increased soil erosion. DWS will require the contractor to use best management practices as necessary during construction to prevent contaminants such as sediment, petroleum products, and debris from leaving the site via storm water runoff. It will also require it to attempt to schedule work for periods of minimal rainfall and to place permanent erosion control measures on lands denuded of vegetation as quickly as possible. Since the disturbed area is expected to be under an acre, NPDES Construction Storm Water General Permit coverage is not required.³

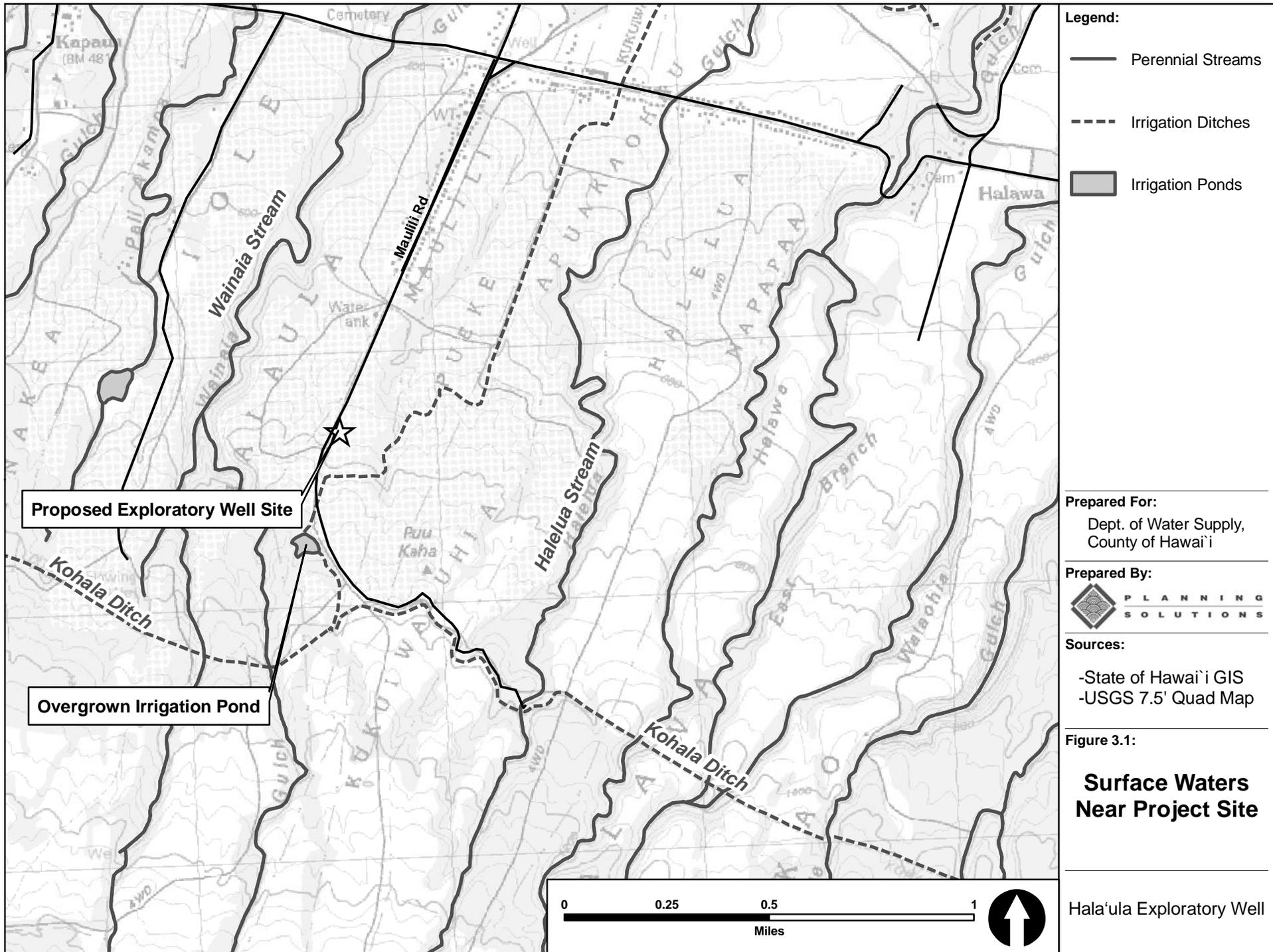
During the testing phase, a temporary diesel engine-powered pump would be used to develop the exploratory well (i.e., to remove sediment and well cuttings that are a by-product of the drilling) and to determine its hydraulic capacity. Well water produced during these tests will be discharged into an adjacent unnamed depression. The project site is in the watershed of the Wainai Stream, which is about a quarter of a mile away from the site (see Figure 3.1). The BMPs that the contractor would implement during construction (see Figure 2.4) would minimize any sediment entrainment or contamination of these discharges and storm water runoff.

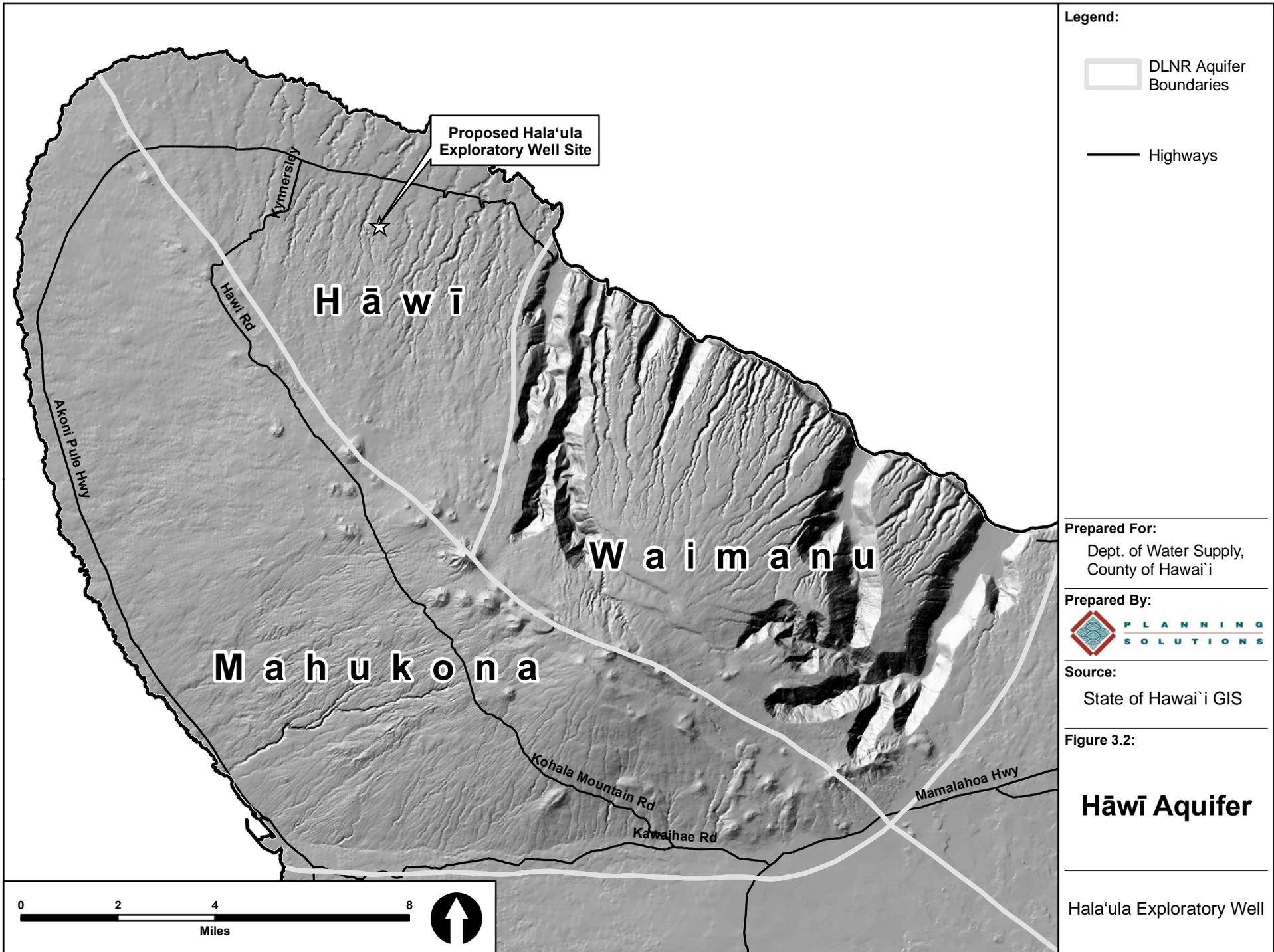
3.2.2.2 Ground Water

As noted above, only a small fraction of the sustainable yield for the Hāwī Aquifer is currently being used. The pump testing would draw water from the screened portion of the casing (below +23 feet MSL); this is too deep for there to be a potential effect on streamflow.⁴

³ National Pollutant Discharge Elimination System administered through the Clean Water Branch of the State Department of Health (Hawai‘i Administrative Rules, 11-55, Appendix C)

⁴ The same is true for pumping that would occur if the tests proved successful and the County converted this into a production well.





3.3 GROUNDWATER CONTAMINATION

For reasons outlined below, there is a low probability that the groundwater that the proposed well would tap is, or would become, contaminated:

- No chemical contaminants have been detected in active wells of the Hāwī Aquifer System.
- According to the County of Hawai'i Department of Environmental Management, Solid Waste Division, the nearest landfill to the project site is in Pu'uana'hulu, about 16 miles away. The nearest transfer station is in Ka'auhuhu, west of the project site, about 2.5 miles away. Both are too distant and the groundwater flow direction such that there is no potential for contamination from either of these sources to affect the well.
- The well site is entirely surrounded by agricultural land, with the nearest dwelling located more than 2,000 feet down-gradient with respect to groundwater flow. Because of this, there is no potential for contamination of the well from leaking sanitary systems.
- As described above in Section 2.1.1, the upper 740 feet of the well would be cased with grout, isolating it from surface water inputs. This, together with the absence of up-gradient sources of pollution and the distance to the nearest residence, make it very unlikely that the well could be contaminated by existing sources.
- Based on the State Department of Health Office of Hazard Evaluation and Emergency Response (DOH 2008), no identified site of concern to the State Department of Health is located within the proposed well site area.⁵
- The proposed well site does not contain any hazardous materials at the present time.
- Any hazardous materials used during the well construction and testing (primarily petroleum products used for construction equipment and pumping) would be handled appropriately to eliminate the potential for contaminating the site.

3.4 CLIMATE AND AIR QUALITY

3.4.1 EXISTING CONDITIONS

The rain gauging station at Hāwī, located at an elevation of 580 feet above sea level over 4 miles west of the project site, provides the best indication of conditions at the project site. The median annual precipitation between 1971 and 2000 was 54.39 inches (NOAA 2002). March was the wettest month of the year during this period, with an average rainfall of 6.55 inches; with an average of 2.48 inches during the period, September was the driest month. Rainfall varies significantly according to time of day as well as time of year, with the mid-day being generally much drier than the nighttime.

Temperatures at the project site are moderate. Between 1971 and 2000, the median annual temperature, measured at O'ōkala (the most comparable location from which temperature data are available) was 72.9° F. February had the lowest monthly average low temperature at O'ōkala (64°), while September had the highest monthly average high temperature (81.6°).

No site-specific wind data are available. However, information from other investigations strongly suggests that the wind pattern at the site reflects the influence that the island's large land mass has on the prevailing trade winds. During the daytime, the winds normally blow out of the east with speeds averaging between 10 to 12 miles per hour. During the nighttime, the down-slope movement of cool air opposes the trade winds and the wind direction is from the southwest.

⁵ The nearest listed site is an abandoned tannery in Hala'ula, a little more than one mile from the site. The EPA has determined that the site's cleanup is complete, that it does not present any health risks to the surrounding environment, and that no further action is required. It has been archived (Reference No. HID980894216).

EXISTING ENVIRONMENT & PROBABLE IMPACTS

There are no substantial sources of anthropogenic air emissions and very little chance for the development of air inversions on the mountain slope. Emissions from the currently active volcanic eruptions are usually carried to the southwest around the island and are not likely to affect the project site. Consequently, air quality is generally excellent.

3.4.2 PROBABLE IMPACTS

As mentioned, grading for the proposed well site would disturb less than one acre of land. No more than a few pieces of construction equipment would operate on the site at any one time. Moreover, work would be limited to period of a several months. The site’s relatively high rainfall, generally moderate wind speeds, and distance from sensitive receptors means that fugitive dust is unlikely to be a problem during construction. The contractor would ensure that the work conforms with the State Department of Health’s guidelines for controlling fugitive dust as outlined in Hawai‘i Administrative Rules §11-60.1. Consequently, pollutant emissions from construction do not have the potential to affect the local or regional air quality substantially.

3.5 TERRESTRIAL FLORA AND FAUNA**3.5.1 EXISTING CONDITIONS**

The project site has been a macadamia nut (*Macadamia integrifolia*, *M. tetraphylla*, and other *Macademia sp.*) orchard for several decades (see photos in Figure 2.2). The understory vegetation includes California grass (*Brachiaria mutica*), albizia (*Albizia chinensis*), *Mimosa pudica*, and other weeds. No faunal survey was conducted, but the disturbed nature of the habitat and anecdotal information strongly suggests that it is limited to introduced birds and mammals. No rare or endangered species are known or expected to be present.

3.5.2 PROBABLE IMPACTS

Construction of the proposed facilities will affect less than an acre of land. The affected land is a cultivated orchard that contains approximately 60 trees; it is managed for commercial production and currently supports introduced and invasive species. It does not contain suitable habitat for any rare or endangered species. Consequently, the proposed action will not have any substantial direct impacts on terrestrial flora or fauna.

3.6 NOISE**3.6.1 EXISTING CONDITIONS**

Trucks, motorcycles, and cars traveling between Akoni Pule Highway and the residences on the lower part of Ma‘ulili Road are the most significant existing noise sources in the area. However, because the site is more than 2,000 feet from the highway, traffic noise is normally not a dominant noise source there. Wind, birdcalls, and the occasional farm vehicle passing the site are the most apparent noise sources under most conditions. Based on measurements made in other, similar areas, ambient noise levels during regular trade wind weather is probably near 55 dBA. Noise levels during periods of calm winds and no traffic are probably less than 45 dBA.

3.6.2 PROBABLE IMPACTS

Construction of the well and reservoir on the site would involve the operation of diesel-powered drilling equipment for a period of several months. Noise source levels from un-muffled equipment of this sort could be as high as 80 to 85 dBA measured at a distance of 50 feet. This could result in sound levels of about 53 - 58 dBA at the property line of the nearest residence (> 2,000 feet from the project site); this is enough to be audible above background noise levels during periods of low wind speed, but would not be as noticeable as existing vehicle noise during such periods.

With the exception of the well pump-testing, construction activities would be limited to daytime hours. Well testing utilizes diesel-powered pumps and requires continuous (i.e., 24-hour-per-day) pumping for a period of at least five days. Consequently, noise from this activity necessarily extends through the night.

Hawaii Administrative Rules §11-46 (Community Noise Control) establishes noise limits for construction, agricultural, and industrial activities. The noise limit for “Class C Districts” [which §11-46-3(3) defines as “...all areas equivalent to lands zoned agriculture, country, industrial, or similar type.”] is 70 dBA at any time. The noise limit for “Class A Districts” [which §11-46-3(3) defines as “...all areas equivalent to lands zoned residential, conservation, preservation, public space, open space, or similar type.”] is 55 dBA during the day and 45 dBA at night (see Table 3.1). The limits are applicable at the property line. Based on the 2,000-foot distance to the dwelling closest to the well site, any of these activities that are conducted at night could exceed the 45 dBA limit. It is possible that careful selection of equipment used for the nighttime tests will allow the contractor to keep noise levels below the regulatory limit. Otherwise, a construction noise permit may be needed from the State Department of Health as provided for in HAR §11-46.

3.7 AQUATIC RESOURCES

3.7.1 EXISTING CONDITIONS

3.7.1.1 Wainaia Stream

As previously noted, the site drains into Wainaia Stream. This perennial stream has a total stream length 10.1 miles and a watershed area of 4.6 square miles. The watershed extends from an elevation of just over +2,800 feet msl at its upper end to the ocean. The watershed's DAR cluster code is 5, meaning that it is medium size, steep in the upper watershed, and has little embayment. Nearly 90 percent is in the State Agricultural Land Use District; the remainder is split evenly between the Urban and Agricultural Districts. A detailed breakdown is presented in Table 3.2.

Past surveys of Wainaia Stream have identified a number of introduced fish species in the headwaters of the stream. These include *Carassius auratus*, *Lepomis* sp., *Micropterus salmoides*, and unidentified *poeciliidae*. Of the five separate assessments that have been conducted of the stream biota, none have deemed the stream worthy of protection.⁶ The Native Insect Diversity does not exceed 19 species, no native species are abundant, there are more than five introduced species present, and there is no Endangered Newcomb’s Snail Habitat.

⁶ <http://www.hawaiiwatershedatlas.com/watersheds/hawaii/81009.pdf>

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Table 3.1 Maximum Permissible Sounds Levels in dBA (HAR §11-46)

<i>Zoning Districts</i>	<i>Daytime (7 a.m. to 10 p.m.)</i>	<i>Nighttime (10 p.m. to 7a.m.)</i>
Class A	55	45
Class B	60	50
Class C	70	70

Notes:

- (a) The maximum permissible sound levels apply to any excessive noise source emanating within the specified zoning district, and at any point at or beyond (past) the property line.
- (b) Noise levels may not exceed the maximum permissible sound levels for more than ten per cent of the time within any twenty minute period, except by permit or variance issued under sections 11-46-7 and 11-46-8.
- (c) For mixed zoning districts, the primary land use designation shall be used to determine the applicable zoning district class and the maximum permissible sound level.
- (d) Measurements values are for “A” weighting network and "slow" meter response unless otherwise stated. Sound level meters and calibrators must conform to American National Standard, ANSI S1.4-1983, specifications. The maximum permissible sound level for impulsive noise is ten dBA above the maximum permissible sound levels shown and is measured using the “Fast” meter response.
- (e) The limits do not apply to the operation of emergency generators, provided the best available control technology is implemented.
- (f) For the purpose of the regulations, the following definitions apply:
"Construction activities" means any or all activities, including but not limited to those activities necessary or incidental to the erection, demolition, assembling, renovating, installing, or equipping of buildings, public or private highways, roadways, premises, and parks.
"Construction equipment" means any device designed and intended for use in construction, including but not limited to any air compressor, pile driver, bulldozer, pneumatic hammer, steam shovel, derrick, crane, tractor, grader, loader, power saw, pump, pneumatic drill, compactor, on-site vehicle, and power hand tool.
"Construction site" means any or all areas, necessary or incidental for the purpose of conducting construction activities.
- (g) Class A zoning districts include all areas equivalent to lands zoned residential, conservation, preservation, public space, open space, or similar type.
Class B zoning districts include all areas equivalent to lands zoned for multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type.
Class C zoning districts include all areas equivalent to lands zoned agriculture, country, industrial, or similar type.

Source: Hawaii Administrative Rules, Title 11, Chapter 46, Community Noise Control

Table 3.2 Land Use Within the Wainaiia & Halelua Stream Watersheds

<i>Land Use Category</i>	<i>Wainaiia Stream</i>		<i>Halelua Stream</i>	
	<i>Percent</i>	<i>Square miles</i>	<i>Percent</i>	<i>Square miles</i>
High Intensity Developed	0.7	0.03	0.9	0.01
Low Intensity Developed	1.2	0.06	1.1	0.02
Cultivated	10.5	0.48	10.0	0.17
Grassland	48.0	2.21	51.7	0.88
Scrub/Shrub	0.2	0.01	0.2	0.00
Evergreen Forest	39.2	1.80	36.1	0.62
Palustrine Forested	0.0	0.00	0.0	0.00
Palustrine Scrub/Shrub	0.0	0.00	0.0	0.00
Palustrine Emergent	0.0	0.00	0.0	0.00
Estuarine Forested	0.0	0.00	0.0	0.00
Bare Land	0.1	0.01	0.0	0.00
Unconsolidated Shoreline	0.1	0.01	0.0	0.00
Water	0.0	0.00	0.0	0.00
Unclassified	0.0	0.00	0.0	0.00
Total	100	4.61	100	1.7

Source: *Atlas of Hawaiian Watersheds & Their Aquatic Resources* (April 7, 2008), #81009 & 81010.

Table 3.3 Wainaiia Stream Characteristics

<i>Item</i>	<i>Reach Type Category</i>				
	<i>Estuary</i>	<i>Lower</i>	<i>Middle</i>	<i>Upper</i>	<i>Headwaters</i>
Reach Type					
Percent of Total	0.0	3.1	26.1	66.6	4.2
DAR Rapid BioAssessment Surveys	0	0	1	0	0
Reservoir Surveys	0	0	0	0	1

Source: *Atlas of Hawaiian Watersheds & Their Aquatic Resources* (April 7, 2008), #81009.

3.7.1.2 Halelua Stream

Halelua Stream is perennial. Its total stream length is 4.6 miles and the watershed has an area of 1.7 square miles. The watershed extends from an elevation of just over 2,000 msl at its upper end to the ocean. The State of Hawai'i Division of Aquatic Resources has not yet established a cluster code for it. According to the *Atlas of Hawaiian Watersheds & Their Aquatic Resources* (April 7, 2008), 94 percent of the watershed area is in agricultural use, 4.4 percent is in Urban use, and 1.5 percent is in Conservation; a further breakdown is presented in Table 3.2.

EXISTING ENVIRONMENT & PROBABLE IMPACTS

Table 3.4 Halelua Stream Characteristics

<i>Item</i>	<i>Reach Type Category</i>				
	<i>Estuary</i>	<i>Lower</i>	<i>Middle</i>	<i>Upper</i>	<i>Headwaters</i>
Reach Type					
Percent of Total	0.2	3.5	57.9	38.5	0.0
DAR Rapid BioAssessment Surveys	0	0	1	0	0
Reservoir Surveys	0	0	0	1	0
Source: <i>Atlas of Hawaiian Watersheds & Their Aquatic Resources</i> (April 7, 2008), 81010					

Past surveys of Halelua Stream have identified a number of introduced fish species. These include *Carassius auratus*, an unidentified *cyprinidae*, and an unidentified *poeciliidae*. Only the *Carassius auratus* is present in the middle, upper, and headwater reaches of the stream.

Of the five separate assessments that have been conducted of the stream biota, none have deemed the stream worthy of protection. The Native Insect Diversity does not exceed 19 species, no native species are abundant, there are no Priority 1 native macrofauna, there are more than 5 introduced species present, and there is no Endangered Newcomb’s Snail Habitat.

3.7.2 PROBABLE IMPACTS

The data that are available from the *Atlas of Hawaiian Watersheds & Their Aquatic Resources* indicate that neither stream contains high-value aquatic habitat, particularly important native species, or other important aquatic fauna. As discussed above in Section 3.2.2.1, the withdrawal of water from the well operation would not substantially alter the flow in either stream as it is being withdrawn at less than 23 feet above sea level. Neither would it have the potential to introduce pollutants into the stream. Consequently, the proposed action would not have substantial direct or indirect effects on the aquatic communities in streams or nearshore waters. In view of the foregoing, the proposed project does not have the potential to have significant adverse impacts on aquatic biota.

3.8 ARCHAEOLOGICAL, HISTORIC AND CULTURAL FEATURES**3.8.1 EXISTING CONDITIONS**

The project area has evidently been extensively modified and developed during historic times, as indicated by the existing modified condition and the present vegetation cover. Furthermore, there is no indication of any kind that the project area has resources necessary to or currently being used either by Native Hawaiian cultural practitioners exercising traditional and customary access and use rights for any purposes or by individuals of any other cultural affiliation for any traditional cultural purposes. The State Historic Preservation Division (SHPD) was contacted during preparation of this environmental assessment. After reviewing plans for the proposed project and viewing photographs of the area in which it would be constructed, SHPD determined that no historic properties would be affected by the project because intensive cultivation has previously altered the land. A copy of the SHPD determination letter is included in Appendix A.

3.8.2 PROBABLE IMPACTS

Based on the findings of the above-referenced archaeological and cultural impact assessment, the State Historic Preservation Division (SHPD) has concluded that the information now available indicate that the project should have no effect on historic properties. There is always the possibility that subsurface remains may be encountered during construction. Consequently, the construction contract for the proposed work will require that in the event that historic resources, including skeletal

remains, cultural materials, lava tubes, or lava blisters/bubbles are identified during construction work, the contractor will immediately cease work in the vicinity of the find, protect the area from additional disturbance, and contact SHPD. In the absence of any known traditional native Hawaiian cultural practices, beliefs, and/or properties of any kind, no impacts to these resources are anticipated.

3.9 NATURAL HAZARD DESIGNATIONS

3.9.1 EXISTING CONDITIONS

The proposed well site is in the region of the Big Island that the U.S. Geological Survey (1997b) has designated as Volcanic Lava Flow Hazard level 8 (as measured on a scale of 1 to 9, with 9 being the least hazardous). This rating means that none of the area has been covered by lava within the last 750 years and that only a few percent of the area has been covered by lava within the last 10,000 years.

For the purposes of structural design, the entire Island of Hawai'i is classified as Zone 4 by the Uniform Building Code adopted by the County of Hawai'i in 1999 (USGS 1994, 1997a). Defining hazard zones for the effects of earthquakes is more difficult than for eruptions and has not been attempted in any great detail for the Island of Hawai'i. For the most part, earthquakes on Hawai'i are concentrated beneath Kīlauea and Mauna Loa, and particularly beneath the south flanks of both volcanoes and in the Ka'ōiki region between them. The likelihood of a damaging earthquake on Kīlauea or Mauna Loa probably increases with long-lived activity of the rift zones, but its precise time and magnitude are impossible to predict. Large earthquakes unrelated to volcanic activity also occur at irregular intervals on the Island. At 7:07 AM on October 15, 2006, a relatively large earthquake struck the island. With an epicenter near Kiholo Bay on the Northwestern part of the island, the quake registered a magnitude of 6.7 on the Richter scale and caused more than \$100 million dollars in damage. Numerous people suffered minor injuries, and over 1,100 buildings were damaged, in some cases, extensively. Power outages occurred throughout the Hawaiian Islands. Damage estimated at 73 million dollars. The earthquake was felt as intensity VII-VIII in northern and western Hawai'i. A tsunami with a wave height of 10 cm was recorded at Kawaihae Harbor.

The proposed well site is not located within a designated Flood Hazard Safety Area nor within a Tsunami Evacuation area (State of Hawai'i 2002).

3.9.2 PROBABLE IMPACTS

As discussed above, the proposed exploratory well would not be subject to significant hazards from volcanic flows, flooding, or tsunami, and the project does not include construction of any significant structures. The risk of earthquake damage is low, but not absent. However, nothing about the project would lead a failure of the exploratory well installation, caused by an earthquake or volcanic flow, to affect surrounding uses or to endanger people.

3.10 SCENIC AND AESTHETIC RESOURCES

3.10.1 EXISTING CONDITIONS

Ma'ulili Road, which fronts the proposed exploratory well, is used only by the landowner. Tourists use Akoni Pule Highway, which is about a mile northeast of the site to access Pololū Trail and Pololū Valley Lookout, popular tourist destinations. The proposed site is not visible from the main highway. The exploratory well would not be visible to the nearest residence, which is about half a mile north of the proposed site. On the road between Hala'ula and Pololū Valley, the existing scenic views include occasional roadside views of historic properties with occasional distant views of the ocean.

EXISTING ENVIRONMENT & PROBABLE IMPACTS

3.10.2 PROBABLE IMPACTS

The construction and testing of the proposed exploratory well would not substantially change the visual character of the area or interfere with significant views across the site. As shown in the photos in Figure 2.2, the site would not be seen from the main road or from the residences situated along the lower portion of Ma‘ulili Road.

3.11 TRAFFIC**3.11.1 EXISTING CONDITIONS**

Access to the proposed well site would be via Ma‘ulili Road. The road intersects Akoni Pule Highway northeast of the site. Virtually all of the traffic along the road by the project site consists of vehicles directly affiliated with the landowner.

3.11.2 PROBABLE IMPACTS

Construction vehicles will increase the traffic along Ma‘ulili Road past the residential development, and the construction activities may close the road for short periods during the construction work. The impacts will be noticeable to the residents along this road, but will be short in duration and will occur only during the work day. No substantial impacts will occur to traffic along the Akoni Pule Highway.

3.12 LAND USE, SOCIOECONOMIC AND CULTURAL ENVIRONMENT**3.12.1.1 Existing Conditions**

The parcel on which the proposed exploratory well would be constructed is owned by Kohala Preserve Conservation Trust LLC (P.O. Box 335, Hāwī, HI 96719). The site has been used as a macadamia nut orchard for many years. The site is in the State Agriculture District, and the County zoning is also Agriculture (Ag-20a). The proposed exploratory well and the potential production well facility are allowable uses under both of these land use designations.

There are no existing commercial, industrial, or economic activities, other than agricultural and residential, in the vicinity. The proposed site is approximately a mile *mauka* of the community of Hala‘ula. The nearest home is located nearly half a mile below the proposed well site.

The project site is located within Census Tract 218, which includes the communities of Hāwī and Hala‘ula. The year 2000 resident population of this census tract was 6,038 people, or about 4% of the island’s population. Of these, 938 resided in the Hāwī Census Defined Place (CDP) and 495 resided in the Hala‘ula CDP. Median household income was higher than the county average, at \$47,733 compared to \$39,805. Unemployment within the civilian labor force was 2.6%, lower than the countywide average or 4.9%.

3.12.2 PROBABLE IMPACTS

The proposed exploratory well is compatible with the existing use of the area. Aside from the temporary minor construction employment and expenditures that it would create, the project would not stimulate or otherwise promote population growth or economic activity.

4.0 RELATIONSHIPS TO RELEVANT PLANS, POLICIES & CONTROLS

4.1 STATE AND COUNTY REGULATIONS

4.1.1 COUNTY OF HAWAI'I GENERAL PLAN

4.1.1.1 *Relevant Provisions*

The Department of Water Supply operates and maintains over twenty separate water systems in the County of Hawai'i, including the Hāwī-Hala'ula Water System. The 2005 *Hawai'i County General Plan* contains goals and policies concerning the development and operation of essential water supply facilities. The *General Plan* recognizes that water supply facilities are needed to support the patterns of development which the *General Plan* seeks to achieve. It makes planning for the location of utility facilities such as wells, reservoirs, and pumping stations an integral part of the land planning process.

The 2005 *General Plan* identifies the following County policies with regards to public water systems that are relevant to the proposed project:

- (a) *Water system improvements shall correlate with the County's desired land use development pattern.*
- (b) *All water systems shall be designed and built to Department of Water Supply standards.*
- (c) *Improve and replace inadequate systems.*
- (d) *Water sources shall be adequately protected to prevent depletion and contamination from natural and man-made occurrences or events.*
- (e) *Water system improvements should be first installed in areas that have established needs and characteristics, such as occupied dwellings, agricultural operations and other uses, or in areas adjacent to them if there is need for urban expansion.*
- (f) *A coordinated effort by County, State and private interests shall be developed to identify sources of additional water supply and be implemented to ensure the development of sufficient quantities of water for existing and future needs of high growth areas and agricultural production.*
- (g) *The fire prevention systems shall be coordinated with water distribution systems in order to ensure water supplies for fire protection purposes.*
- (j) *Cooperate with appropriate State and Federal agencies and the private sector to develop, improve and expand agricultural water systems in appropriate areas on the island.*
- (k) *Promote the use of ground water sources to meet State Department of Health water quality standards.*
- (m) *Seek State and Federal funds to assist in financing projects to bring the County into compliance with the Safe Drinking Water Act.*
- (n) *Develop and adopt a water master plan that would consider water yield, present and future demand, alternative sources of water, guidelines and policies for the issuing of water commitments.*
- (o) *Expand programs to provide for agricultural irrigation water.*

The 2005 *Hawai'i County General Plan* identifies a number of actions to implement these policies in the North Kohala District. Specifically, it directs DWS to:

- (a) *Pursue a ground water source for the Makapala-Keokea water system.*

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- (b) Explore further sources for future needs.*
- (c) Improve and replace inadequate distribution mains and storage facilities.*
- (d) Encourage efforts to improve the Kohala ditch system and its use for agricultural purposes.*

4.1.1.2 Conformance with the Plan

The proposed exploratory well is being constructed by DWS in response to the *General Plan* policy for Hala‘ula that encourages groundwater source investigation for this area of the island. The proposed project meets all applicable design standards. The proposed project is compatible with existing uses in the surrounding area and allowable under existing State and County zoning and development regulations. Testing of the exploratory well would not produce substantial air or noise emissions that would disturb existing uses on adjacent properties.

4.1.2 COUNTY OF HAWAI‘I ZONING ORDINANCE

The County zoning in the project area is Agriculture (Ag-20a). The Hawai‘i County Code (2000 Edition), Section 25-4-11(b) states:

Any substation used by a public utility for the purpose of furnishing telephone, gas, electricity, water, radio, or television shall be a permitted use in any district provided that the use is not hazardous or dangerous to the surrounding area and the director has issued plan approval for such use.

Construction of an exploratory well is a permitted use under the existing County zoning designation. Should the well produce water of appropriate quality and quantity, the additional facilities (such as a reservoir and pipeline needed for it to serve the Hāwī-Hala‘ula Water System) would be installed. Before committing to that action, DWS would prepare a Chapter 343 Environmental Assessment for the production well and related facilities, obtain *Plan Approval* from the Hawai‘i County Department of Planning, and obtain other required permits.

4.1.3 STATE OF HAWAI‘I LAND USE LAW

The site is in the State Agriculture District. HRS Chapter 205 §205-4.5 (7) lists public utility facilities such as water wells as permissible uses within the State Agricultural District.

4.1.4 COMPLIANCE WITH THE STATE OF HAWAI‘I’S DRINKING WATER STATE REVOLVING FUND (DWSRF) PROGRAM REQUIREMENTS

This project may be funded by Federal funds through the State of Hawai‘i’s Drinking Water State Revolving Fund (DWSRF) program. The U.S. Congress established the DWSRF program as a new section 1452 of the Safe Drinking Water Act (SDWA), 33 U.S.C. 300j-12, by the SDWA Amendments of 1996, Public Law 104-182. It emphasizes the needs of small water systems, such as Hala‘ula. The proposed project is consistent with the program emphasis on small water systems. This document includes all of the environmental information required for compliance with the DWSRF program.

4.2 CROSS-CUTTING FEDERAL AUTHORITIES

The following sub-sections address the proposed project’s relationship to other Federal “cross-cutting” environmental, economic, social, and miscellaneous federal authorities as required by the State of Hawai‘i’s Drinking Water State Revolving Fund (DWSRF) program.

4.2.1 ENVIRONMENTAL POLICY AUTHORITIES

4.2.1.1 *Archeological and Historic Preservation Act (16 U.S.C. § 469a-1) and National Historic Preservation Act (16 U.S.C. § 470)*

As discussed in Section 3.8, the project site is located in an area that has been used extensively for agriculture for many years and no known archaeological or historic features exist at the site. The State of Hawai‘i Historic Preservation Division (SHPD) of the Department of Land and Natural Resources has determined that the project will have no effect on historic properties, and the impact assessment conducted for the project detected no evidence that the site is used or valued for cultural purposes. Consequently, the proposed action complies with these regulations.

4.2.1.2 *Clean Air Act (42 U.S.C. § 7401)*

As discussed in Section 3.4, air quality at the site of the proposed project is good. The site is in an air quality attainment area as defined by the State of Hawai‘i Department of Health in its EPA-approved Air Quality program. Only minor amounts of grading and excavation will be required for the project. This, along with the wet climate, means that fugitive dust will not be a problem during construction.

It is anticipated that diesel-powered construction equipment will be used to construct the proposed well and reservoir. Emissions from the diesel will slightly degrade air quality for the short period of time they are in operation. However, all applicable emission and ambient air quality standards will continue to be met. Normal operation of the proposed facilities will not produce on-site air emissions, will not alter airflow in the vicinity, and will have no other measurable effect on the area’s micro-climate. Consequently, the proposed project complies with the provision of the Clean Air Act.

4.2.1.3 *Coastal Barrier Resources Act (16 U.S.C. § 3501)*

Coastal Barrier Resources Act (CBRA), Public Law 97-348 (96 Stat. 1653; 16 U.S.C. 3501 et seq.), enacted October 18, 1982, designated various undeveloped coastal barrier islands, depicted by specific maps, for inclusion in the Coastal Barrier Resources System (System). Areas so designated were made ineligible for direct or indirect Federal financial assistance that might support development, including flood insurance, except for emergency life-saving activities.

This Act does not apply to the State of Hawai‘i at this time. Consequently, the proposed project is consistent with the provisions of the Coastal Barrier Resources Act.

4.2.1.4 *Coastal Zone Management Act (16 U.S.C. § 1451)*

Enacted as Chapter 205A, HRS, the Hawaii Coastal Zone Management (CZM) Program was promulgated in 1977 in response to the Federal Coastal Zone Management Act of 1972. The CZM area encompasses the entire state, including all marine waters seaward to the extent of the state’s police power and management authority, including the 12-mile U.S. territorial sea and all archipelagic waters.

The Hawai‘i Coastal Zone Management Program focuses on ten policy objectives:

- Recreational Resources. To provide coastal recreational opportunities accessible to the public and protect coastal resources uniquely suited for recreational activities that cannot be provided elsewhere.

- Historic Resources. To protect, preserve, and where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.
- Scenic and Open Space Resources. To protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.
- Coastal Ecosystems. To protect valuable coastal ecosystems, including reefs, from disruption and to minimize adverse impacts on all coastal ecosystems.
- Economic Uses. To provide public or private facilities and improvements important to the state's economy in suitable locations; and ensure that coastal dependent development such as harbors and ports, energy facilities, and visitor facilities, are located, designed, and constructed to minimize adverse impacts in the coastal zone area.
- Coastal Hazards. To reduce hazard to life and property from tsunamis, storm waves, stream flooding, erosion, subsidence, and pollution.
- Managing Development. To improve the development review process, communication, and public participation in the management of coastal resources and hazards.
- Public Participation. To stimulate public awareness, education, and participation in coastal management; and maintain a public advisory body to identify coastal management problems and provide policy advice and assistance to the CZM program.
- Beach Protection. To protect beaches for public use and recreation; locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion.
- Marine Resources. To implement the state's ocean resources management plan.

Other key areas of the CZM program include: a permit system to control development within a Special Management Area (SMA) managed by the Counties and the Office of Planning; a Shoreline Setback Area which serves as a buffer against coastal hazards and erosion, and protects view-planes; and the Marine and Coastal Affairs. Finally, a Federal Consistency provision requires that federal activities, permits and financial assistance be consistent with the Hawai'i CZM program.

The proposed Hala'ula Exploratory Well project is located approximately 2 miles from the coastline. It does not involve the placement, erection, or removal of materials near the coastline. The type and scale of the activities that it involves typically do not have the potential to affect coastal resources. Finally, it is consistent with the CZM objectives that are relevant to a project of this sort.

A copy of this Draft EA is being sent to the Office of Coastal Zone Management at the State of Hawai'i Department of Business, Economic Development, and Tourism. The Department's response is expected to confirm the consistency of the project with the CZM Act.

4.2.1.5 Endangered Species Act (16 U.S.C. 1531)

The Endangered Species Act (16 U.S.C. §§ 1531-1544, December 28, 1973, as amended), provides broad protection for species of fish, wildlife, and plants that are listed as threatened or endangered in the U.S. or elsewhere. The Act mandates that federal agencies seek to conserve endangered and threatened species and use their authorities in furtherance of the Act's purposes. Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species. The Act outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species, and contains exceptions and exemptions.

Sections 3.5 and 3.7 of this EA describe existing biota on and near the project site. The discussion documents the fact that there are no known rare or endangered species on or immediately around the site of the Hala'ula Exploratory Well project. Similarly, the site does not contain unique or valuable wildlife habitat. Copies of the Draft EA are being provided to the U.S. Fish and Wildlife Service and

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to the State Department of Land and Natural Resources for review and comment, and their responses (if any) will be included in the *Final EA*.

4.2.1.6 Environmental Justice (Executive Order 12898)

The Environmental Justice Executive Order was issued in 1994 for the purpose of protecting low-income and minority residents of the United States from disproportionate exposure to environmental and health hazards. Section 1-101 of the Executive Order States:

To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

As discussed in Section 3.12.1.1, the Census Tract 218 exhibits a median household income that is higher than the countywide average, and an unemployment rate that is slightly lower. The project area is not considered a low-income area. The purpose of the proposed exploratory well is to determine a viable source of potable water that conforms to State and Federal standards. The project will not have adverse secondary environmental, economic, or social impacts, as discussed in detail in Chapter 3. Moreover, the State and Federal regulations regarding safe drinking water are applicable to all water systems in Hawai'i, irrespective of the economic or demographic characteristics of their residents. Thus, the proposed project complies with this Executive Order.

4.2.1.7 Farmland Protection Policy Act (7 U.S.C. § 4201)

The U.S. Congress adopted the Farmland Protection Policy Act (FPPA) (Public Law 97-98) on December 22, 1981). The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) has national leadership for administering the FPPA. The effective date of the FPPA rule (part 658 of Title 7 of the Code of Federal Regulations) is August 6, 1984.

The stated purposes of the FPPA are to:

- Minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses.
- Assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government, and private programs and policies to protect farmland.

“Farmland”, as used in the FPPA, includes prime farmland, unique farmland, and land of statewide or local importance. “Farmland” subject to FPPA requirements does not have to be currently used for cropland. Because the Hala'ula Exploratory Well project will result in the use of just under an acre of prime agricultural land for the proposed well and related support facilities and might use funding assistance from a Federal agency, the proposed action is subject to FPPA.

The area that would be affected is a small fraction of the agricultural land in the area. The project will remove approximately 60 macadamia nut trees to accommodate the construction of the exploratory well. It will not impact continued agricultural use for the remaining portion of the private parcel. The proposed project is intended to confirm the availability of a viable source of potable water to serve the Hāwī and Hala'ula Water System. Consequently, the project is in compliance with FPPA.

4.2.1.8 Fish and Wildlife Coordination Act (16 U.S.C. § 661)

The Fish and Wildlife Coordination Act, as amended, authorizes the Secretaries of Agriculture and Commerce to require consultation with the Fish and Wildlife Service and the fish and wildlife

agencies of States where the “waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted . . . or otherwise controlled or modified” by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of “preventing loss of and damage to wildlife resources.”

As documented in this report, the proposed Hala'ula Exploratory Well project does not require the diversion of any stream or the modification of any other water body and will not result in impacts on fish or wildlife resources. Nonetheless, the U.S. Fish and Wildlife Service and the State Department of Land and Natural Resources are being asked to comment on this Draft EA and to confirm that the project will not cause the loss of wildlife resources.

4.2.1.9 Floodplain Management (Executive Order 11988 (1977), as Amended by Executive Order 12148 (1979))

Based on the latest available (December, 2001) Flood Insurance Rate Map for the area, the project site lies outside a defined floodplain. The project does not involve property acquisition, management, or construction within a 100-year flood plain (Zones A or V), and it does not involve a “critical action” within a 500-year flood plain. Consequently, it is consistent with applicable regulations and guidance relating to floodplain management.

4.2.1.10 Protection of Wetlands (Executive Order 11990 (1977), as Amended by Executive Order 12608 (1997))

There are no wetlands on or near the site. Neither are there food resources on the site that are important to wildlife that use wetlands elsewhere on the island. Copies of the *Draft EA* are being sent to the administrator of the Pacific Island Eco-Region, U.S. Fish & Wildlife Service, and to the State Department of Land and Natural Resources Department of Aquatic Resources to ensure adequate consideration of this topic in the environmental review for this project.

4.2.1.11 Safe Drinking Water Act (42 U.S.C. § 300(f))

The Safe Drinking Water Act (SDWA) is the principal federal law that ensures the quality of Americans' drinking water. Under SDWA, the EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The Safe Drinking Water Act requires that all public water systems meet stringent water quality standards. These standards cover a long list of potential chemical, radiological and biological contaminants. The standards distinguish between surface water and groundwater sources, with the testing and monitoring requirements for surface water and GWUDI sources being far greater than those for groundwater sources.

Extensive testing of the water withdrawn from the well will be carried out by the County of Hawai'i to determine if it is suitable for development as a potable water source.

The Safe Drinking Water Act also provides the impetus behind the development of regulatory protection of principal or sole source aquifers. Part C of this Law pertains specifically to the protection of underground sources of drinking water, including the establishment of regulations on the injection of materials into subsurface aquifers in those areas of the United States where only one aquifer (principal or sole source aquifer) exists. Section 1424(e) of PL 93-523 states:

(e) If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of the determination in the Federal Register. After the publication of any such notice, no commitment for Federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for Federal financial assistance may, if authorized under

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another Provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer.

As identified by the U.S. Environmental Protection Agency, Region IX Groundwater Office (<http://www.epa.gov/OGWDW/swp/ssa/reg9.html>), there are only two Sole Source Aquifers in Hawai'i. They are the Southern O'ahu Basal Aquifer on the Island of O'ahu and the Moloka'i Aquifer on the island of Moloka'i. There are no sole source aquifers on the Island of Hawai'i where the proposed project is located.

4.2.1.12 Wild and Scenic Rivers Act (16 U.S.C. §1271)

The purpose of this act, as stated in Section (b) of its preamble is as follows:

It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

There are no designated Wild and Scenic Rivers in the State of Hawai'i at this time. Consequently, the proposed project is consistent with the provisions of the Wild and Scenic Rivers Act.

4.2.1.13 Essential Fish Habitat Consultation Process Under the Magnuson-Stevens Fishery Conservation and Management Act (16 USC §1801)

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), which was reauthorized and amended by the Sustainable Fisheries Act (1996), requires the eight regional fishery management councils to describe and identify essential fish habitat (EFH) in their respective regions, to specify actions to conserve and enhance that EFH, and to minimize the adverse effects of fishing on EFH. Congress defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). The EFH guidelines under 50 CFR 600.10 further interpret the EFH definition as follows:

Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

The Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Act support one of the Nation's overall marine resource management goals - maintaining sustainable fisheries. Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with NMFS regarding the potential effects of their actions on EFH. The Western Pacific Regional Fishery Management Council Website lists EFH areas in Hawai'i and the Pacific Islands (<http://www.wpcouncil.org/maps.htm>). All of the identified areas are offshore marine environments. The proposed Hala'ula Exploratory Well site is about 2 miles from the ocean and has no potential to impact any of the identified EFH areas.

4.2.2 ECONOMIC POLICY AUTHORITIES

4.2.2.1 Administration of the Clean Air Act and the Water Pollution Control Act with Respect to Federal Contracts or Loans (Executive Order 11738)

Requirement. This Executive Order prohibits the provision of Federal assistance to facilities that do not comply with either the Clean Water Act or the Clean Air Act unless the purpose of the assistance is to remedy the cause of the violation.

Compliance. As discussed in Sections 3.2 and 3.4, the proposed exploratory well will comply with applicable provisions of the Clean Air Act and Clean Water Act. Consequently, it is consistent with the intent of this Executive Order.

4.2.2.2 Demonstration Cities and Metropolitan Development Act of 1966, Public Law 89-754, as Amended (42 USC § 3331)

Requirement. In 1966, Congress enacted the Demonstration Cities and Metropolitan Development Act to ensure that federal grants were not working at cross-purposes. Section 204 of that act was significant in asserting federal interest in improving the coordination of public facility construction projects to obtain maximum effectiveness of federal spending and to relate such projects to area wide development plans. Section 204 requires that all applications for the planning and construction of facilities be submitted to an area wide planning agency composed of local elected officials for review and comment. To demonstrate compliance with this Act, the Hawai‘i State Department of Health requires DWSRF assistance recipients to describe the proposed project’s effect on local development plans.

Compliance. Section 4.1.1 of this report addresses this requirement by demonstrating the proposed exploratory well’s consistency with the County of Hawai‘i General Plan.

4.2.2.3 Procurement Prohibitions (Executive Order 11738, Section 306 of the Clean Air Act)

Requirement. This Executive Order requires recipients of Federal assistance to certify that they will not procure goods, services or materials from suppliers who are on the EPA’s list of Clean Air Act violators.

Compliance. DWS will comply with this requirement in selecting contractors, construction materials, and other services for the Hala‘ula Exploratory Well project.

4.2.2.4 Procurement Prohibitions (Section 508 of the Clean Water Act)

Requirement. This Executive Order requires recipients of Federal assistance to certify that they will not procure goods, services or materials from suppliers who are on the EPA’s list of Clean Water Act violators.

Compliance. DWS will comply with this requirement in selecting contractors, construction materials, and other services for the Hala‘ula Exploratory Well project.

4.2.3 SOCIAL POLICY AUTHORITIES

4.2.3.1 Age Discrimination Act of 1975 (42 USC § 6102)

Requirement. This Act stipulates that no person in the United States shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Compliance. DWS will comply with this requirement in hiring contractors and other staff for its Hala‘ula Exploratory Well project.

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4.2.3.2 Civil Rights Act of 1964, Title VI (42 USC §2000(d))

Requirement. This Act stipulates that no person in the United States shall, on the grounds 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.

Compliance. DWS will comply with this requirement in hiring contractors and other staff for its Hala‘ula Exploratory Well project.

4.2.3.3 Equal Employment Opportunity (Executive Order 11246, as amended)

Requirement. This Executive Order requires all recipients of Federal contracts to include certain non-discrimination and “affirmative action” provisions in all contracts. The provisions commit the contractor or subcontractor to maintain a policy of non-discrimination in the treatment of employees, to make this policy known to employees, and to recruit, hire and train employees without regard to race, color, sex, religion and national origin.

Compliance. DWS will include these provisions in all contracts for the Hala‘ula Exploratory Well project.

4.2.3.4 Minority Business Enterprise Development (Executive Order 12432)

Requirement. This Executive Order sets forth in more detail the responsibilities of Federal agencies for the monitoring, maintaining of data and reporting of the use of minority enterprises.

Compliance. DWS will comply with all applicable requirements pertaining to this Executive Order.

4.2.3.5 National Program for Minority Business Enterprise (Executive Order 11625)

Requirement. This Executive Order directs Federal agencies to promote and encourage the use of minority business enterprises in projects utilizing federal funds.

Compliance. DWS will comply with this Executive Order in selecting contractors, goods, and services for its Hala‘ula Exploratory Well project.

4.2.3.6 National Women’s Business Enterprise Policy and National Program for Women’s Business Enterprise (Executive Order 12138)

Requirement. This Executive Order directs each department or agency empowered to extend Federal financial assistance to any program or activity to issue regulations requiring the recipient of such assistance to take appropriate affirmative action in support of women’s business enterprises and to prohibit actions or policies which discriminate against women’s business enterprises on the grounds of sex.

Compliance. DWS will comply with this Executive Order in selecting contractors, goods, and services for its Hala‘ula Exploratory Well project.

4.2.3.7 Rehabilitation Act of 1973 (29 USC § 794)

Requirement. This Act stipulates that no otherwise qualified handicapped individual in the United States shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Compliance. DWS will comply with this requirement for its Hala‘ula Exploratory Well project.

4.2.3.8 Small Business Administration Reauthorization and Amendment Act of 1998 (Pub. L. 100-590, Section 129)

Requirement. This Amendment directs Federal agencies to promote and encourage the use of small business enterprises in projects utilizing federal funds.

Compliance. DWS will comply with this Act in selecting contractors, goods, and services for its Hala'ula Exploratory Well Project.

4.2.3.9 Department of Veterans Affairs and Housing and Urban Development, and Agencies Appropriations Act (1993, Pub. L. 102-389)

Requirement. This Act requires the Administrator of the Environmental Protection Agency to ensure that at least 8 per centum of Federal funding for prime and subcontracts awarded in support of authorized programs, including grants, loans and contracts for wastewater treatment and for leaking underground storage tanks, be made available to businesses or other organizations owned or controlled by socially and economically disadvantaged individuals (within the meaning of Section 8(a)(5) and (6) of the Small Business Act (15 USC 637(a)(5) and (6)), including historically black colleges and universities.

Compliance. DWS will comply with applicable provisions of this Act in selecting contractors, goods, and services for its Hala'ula Exploratory Well project.

4.2.3.10 Disadvantaged Business Enterprise Rule (2008, 40 CFR Part 33)

Requirement. This Rule sets forth the responsibilities of entities receiving an identified loan under a financial assistance agreement capitalizing a revolving loan fund, for the monitoring, maintaining of data and reporting of the use of disadvantaged business enterprises (DBEs). It requires the Applicant to fully comply with 40 CFR Part 33, entitled "Participation by Disadvantaged Business Enterprises in Procurement Under Environmental Protection Agency (EPA) Financial Assistance Agreements" and ensure that all contracts funded by a DWSRF loan include a term or condition requiring compliance with 40 CFR Part 33. The Rule further stipulates that the applicant shall not discriminate on the basis of race, color, national origin, or sex in the performance of its contract and that the applicant carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements.

Compliance. DWS will comply with all applicable provisions of this rule for its Hala'ula Exploratory Well project, including timely completion and submission of the DBE Subcontractor Performance and Utilization Forms (respectively, EPA Forms 6100-3 and 6100-4), as appropriate.

4.2.4 MISCELLANEOUS AUTHORITIES

4.2.4.1 Debarment and Suspension (Executive Order 12549)

Requirement. Prior to the award of a consultant or construction contract, the Applicant (County) shall fully comply with Subpart C of 40 CFR Part 32, entitled "Responsibilities of Participants Regarding Transactions" and ensure that any lower tier covered transaction and subsequent lower tier transaction, includes a term or condition requiring compliance with Subpart C. The Applicant shall certify that the General Contractor, Consultant, sub-consultants, subcontractors and suppliers are not on the Excluded Parties List. The Applicant acknowledges that failing to disclose the information required under 40 CFR 32.335 may result in the delay or negation of payment, or pursuance of legal remedies, including suspension and debarment. The Applicant may access the Excluded Parties List System at <http://epls.arnet.gov>.

Compliance. DWS will include a condition in all contracts funded for this project that would terminate the contract should the contractor be determined to be an Excluded Party under this Executive Order.

PLANS, POLICIES, AND CONTROLS

4.2.4.2 *Uniform Relocation and Real Property Acquisition Policies Act (Pub. L. 91-646 (1971), as Amended, 42 USC 4601-4655)*

Requirement. The Act establishes a policy for fair and equitable treatment of persons who are displaced from their homes, farms or businesses to make way for a federally assisted project.

Compliance. No such displacements are anticipated for the Hala'ula Exploratory Well project. However, should any such displacements occur as a result of the project, DWS will ensure that the affected parties would receive fair and equitable treatment consistent with this law.

4.2.4.3 *Preservation of Open Competition and Government Neutrality towards Contractor's Labor Relations on Federal and Federally Funded Construction Projects (Executive Order 13202 (2001), as amended by Executive Order 13208 (2001))*

Requirement. DWSRF assistance recipients must ensure that bid specifications, project agreements, and other controlling documents for construction contracts awarded after February 17, 2001 do not require or prohibit agreements with labor organizations. Further, DWSRF assistance recipients and any construction manager acting upon their behalf must not otherwise discriminate against bidders, offerors, contractors, or subcontractors for entering into, or refusing to enter into, agreements with labor organizations.

Compliance. DWS will comply with applicable provisions of this Act in selecting contractors, goods, and services for its Hala'ula Exploratory Well project and will include this provision in the specifications of all contracts funded for this project.

5.0 ANTICIPATED DETERMINATION

5.1 SIGNIFICANCE CRITERIA

Hawaii Administrative Rule §11-200-11.2 establishes procedures for determining if an environmental impact statement (EIS) should be prepared or if a finding of no significant impact is warranted. §11-200-11.2 (1) provides that proposing agencies should issue an environmental impact statement preparation notice (EISPN) for actions that it determines may have a significant effect on the environment. Hawaii Administrative Rules §11-200-12 lists the following criteria to be used in making that determination:

In most instances, an action shall be determined to have a significant effect on the environment if it:

- 1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;*
- 2. Curtails the range of beneficial uses of the environment;*
- 3. Conflicts with the State's long-term environmental policies or goals as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;*
- 4. Substantially affects the economic or social welfare of the community or State;*
- 5. Substantially affects public health;*
- 6. Involves substantial secondary impacts, such as population changes or effects on public facilities;*
- 7. Involves a substantial degradation of environmental quality;*
- 8. Is individually limited but cumulatively has considerable effect on the environment or involves a commitment for larger actions;*
- 9. Substantially affects a rare, threatened, or endangered species, or its habitat;*
- 10. Detrimentally affects air or water quality or ambient noise levels;*
- 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;*
- 12. Substantially affects scenic vistas and viewplanes identified in county or state plans or studies; or,*
- 13. Requires substantial energy consumption.*

5.2 FINDINGS

The potential effects of constructing the proposed Hala'ula Exploratory Well described earlier in this document were evaluated using these significance criteria. The findings with respect to these criteria are summarized below:

5.2.1 IRREVOCABLE LOSS OR DESTRUCTION OF VALUABLE RESOURCE

The proposed project would be constructed on a macadamia nut orchard uphill from an existing Department of Water Supply facility. It does not involve the loss of any significant cultural or natural resources.

ANTICIPATED DETERMINATION

5.2.2 CURTAILS BENEFICIAL USES

Construction of the proposed exploratory well would not curtail beneficial uses of the site. The development affects less than an acre of land and would not preclude or disrupt future use of the surrounding agricultural land.

5.2.3 CONFLICTS WITH LONG-TERM ENVIRONMENTAL POLICIES OR GOALS

The proposed project is consistent with the County of Hawai‘i’s General Plan (see Section 4.1) and with the State’s long-term environmental policies and goals as expressed in Chapter 344, Hawaii Revised statutes and elsewhere in State law.

5.2.4 SUBSTANTIALLY AFFECTS ECONOMIC OR SOCIAL WELFARE

The proposed exploratory well is intended to identify and confirm a viable groundwater source addition to the existing Hāwī-Hala‘ula Water System. It would not have a substantial adverse effect on economic or social welfare. Rather, it allows the DWS to assure its customers that they have access to an adequate supply of high-quality potable water, consistent with the maintenance of environmental quality.

5.2.5 PUBLIC HEALTH EFFECTS

The proposed project would not adversely affect air or water quality. Neither would it generate solid waste or produce other emissions that would have a significant adverse effect on public health. Construction noise has the potential to exceed noise standards at the property line, but the potential adverse effects of this can be mitigated by the noise abatement and attenuation measures that the County would require of the construction contractor.

5.2.6 PRODUCE SUBSTANTIAL SECONDARY IMPACTS

The proposed project would not produce significant secondary impacts. It is not designed to foster population growth or to promote economic development.

5.2.7 SUBSTANTIALLY DEGRADE ENVIRONMENTAL QUALITY

The proposed project would not have substantial long-term environmental effects. Noise from construction and pump testing is the only impact of note, and it would be of limited duration. So long as adequate measures are taken to control the intensity of the construction noise and the time of day during which it would occur, its effects on nearby properties can be managed.

5.2.8 CUMULATIVE EFFECTS OR COMMITMENT TO A LARGER ACTION

Construction and operation of the proposed exploratory well do not constitute a commitment to a larger action and are not intended to facilitate substantial population growth. Instead, the project is intended to primarily confirm the availability of a viable source of potable water to serve the Hāwī and Hala‘ula Water System.

5.2.9 AFFECTS A RARE, THREATENED, OR ENDANGERED SPECIES

The proposed project would be constructed on a privately owned portion of a macadamia nut orchard that has been heavily disturbed for agricultural use, which is near to an existing DWS facility. It would not utilize a resource needed for the protection of rare, threatened, or endangered species.

5.2.10 AFFECTS AIR OR WATER QUALITY OR AMBIENT NOISE LEVELS

Construction and operation of the proposed exploratory well would not have a measurable effect on air or water quality. Neither would they have a long-term effect on noise levels. The project does have the potential to increase noise levels during the construction phase. Adequate mitigation measures would be taken to limit these to reasonable levels.

5.2.11 ENVIRONMENTALLY SENSITIVE AREAS

There are no environmentally sensitive areas or resources in the immediate vicinity of the proposed project. While the Island of Hawai'i as a whole is subject to certain geologic hazards, such as earthquakes, tsunamis, and lava flows, the project site is in an area that has a relatively low frequency of lava flows and is above the tsunami evacuation zone. All structures would be constructed consistent with the Hawai'i Uniform Building Code for Earthquake Zone 4.

5.2.12 AFFECTS SCENIC VISTAS AND VIEWPLANES

The appearance of the proposed exploratory well would not significantly alter the visual character of the site or change views across it.

5.2.13 REQUIRES SUBSTANTIAL ENERGY CONSUMPTION

Construction and testing of the well would require only modest and temporary amounts of transportation fuels. Should DWS decide to convert the exploration well into a production facility (not included in this proposed action), the energy required for operation of the well would be offset by the gravity-driven delivery of water to the customers of the Hāwī-Hala'ula Water System and should result in a net savings of energy use compared with the existing system.

5.3 ANTICIPATED DETERMINATION

In view of the foregoing, DWS concludes that the proposed project would not have a significant adverse impact on the environment. Consequently, it anticipates issuing a Finding of No Significant Impact for the proposed action.

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7.0 PARTIES CONSULTED

7.1 CONSULTATION

The Hawai'i County Planning Department was consulted during the preparation of this EA. The public would have an opportunity to review and comment on the document in accordance with HRS Chapter 343.

7.2 DISTRIBUTION

This EA will be distributed to the individuals and organizations listed in Table 7.1.

Table 7.1 Preliminary Draft EA Distribution List

Federal Agencies	
Environmental Protection Agency, Pacific Islands Contact Office	District Engineer, U.S. Army Engineer District, Honolulu
U.S. Department of Agriculture, Natural Resources Conservation Service	U.S. Fish & Wildlife Service, Pacific Island Eco-Region
District Chief, Geological Survey, Department of the Interior	
State Agencies	
Office of Environmental Quality Control (2 copies + electronic file)	Department of Business and Economic Development & Tourism, Planning Office
Department of Hawaiian Home Lands	Department of Health, Clean Water Branch
Office of Hawaiian Affairs	Department of Health, Environmental Planning Office
Department of Accounting and General Services	Department of Health, Safe Drinking Water Branch (1 copy-Honolulu, and 1 copy-Hilo)
Department of Agriculture	Department of Land and Natural Resources (5 copies)
Commission on Water Resource Management	DLNR Historic Preservation Division
Department of Transportation (DOT)	Environmental Center, University of Hawai'i
DOT Highways Division	Water Resources Center, University of Hawai'i
County of Hawai'i	
Planning Department	Fire Department
Department of Public Works	Police Department
Department of Parks and Recreation	Department of Environmental Management, Solid Waste Division
Utilities	
Hawaiian Electric Light Company	Hawaiian Telcom
Libraries and Depositories	
Hawai'i State Library Hawai'i Documents Center	Hilo Public Library
University of Hawai'i, Hilo Campus Library	Bond Memorial Public Library, Kapa'au
DBEDT Library	
Non-Government Organizations	
Kohala Hawaiian Civic Club	Bill Shantelle, Surety Kohala

PARTIES CONSULTED

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8.0 APPENDIX A: HISTORIC PRESERVATION REVIEW

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

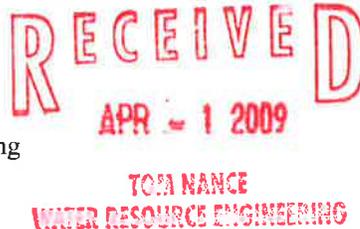
RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
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

March 25, 2009

Greg Fukumitsu
Tom Nance Water Resource Engineering
680 Ala Moana Boulevard, Suite 406
Honolulu, Hawaii 96813-5411



LOG NO: 2009.1589
DOC NO: 0903MD54
Archaeology

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GF _____
TY _____
GS _____
LT _____
ACCG _____
JOB _____

Dear Mr. Fukumitsu:

**SUBJECT: Chapter 6E-8 Historic Preservation Review –
Request for Comment on a Grading Permit Application for the Halaula Well
Development, Phase I
Halaula Ahupua`a, North Kohala District, Island of Hawaii
TMK: (3) 5-3-004:001 (por.)**

Thank you for the opportunity to comment on the aforementioned project, which we received on March 23, 2009. This project will involve construction of the well drilling pad for the new proposed Halaula Well. Please note that the Grading Notes on Sheet C-3 need to be changed: should cultural materials or human remains be encountered, it is SHPD – not the County Planning Department – who must be notified and clear the project to proceed (as detailed below). We determine that **no historic properties will be affected** by this project because:

- Intensive cultivation has altered the land
- Residential development/urbanization has altered the land
- Previous grubbing/grading has altered the land
- An accepted archaeological inventory survey (AIS) found no historic properties
- SHPD previously reviewed this project and mitigation has been completed
- Other:

In the event that historic resources, including human skeletal remains, cultural materials, lava tubes, and lava blisters/bubbles are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, Hawaii Island Section, needs to be contacted immediately at (808) 933-7653. If you have questions about this letter please contact Morgan Davis at (808) 933-7650.

Aloha,

Nancy McMahon, Deputy SHPO/State Archaeologist
and Historic Preservation Manager
State Historic Preservation Division