UNITED STATES NAVY

SOIL AND WATER CONSERVATION PLAN
FOR
AGRICULTURAL OUTLEASE
UNITS 1 AND 3
NAVY PUBLIC WORKS CENTER
PEARL HARBOR, HAWAII

PREPARED BY

NATURAL RESOURCES MANAGEMENT STAFF
REAL ESTATE DIVISION

DEPARTMENT OF THE NAVY
PACIFIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND

MARCH 1985
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I. INTRODUCTION

A. General Information: This Soil and Water Conservation Plan is for the properties being offered for lease at the Navy Public Works Center, Pearl City Peninsula, Pearl Harbor, Hawaii. The plan includes specific conservation practices required to protect and improve the productivity and fertility of the land, contains a schedule for the completion of prescribed practices, and provides for restoration of the land area(s) upon termination of the lease if required by the Government. This Soil and Water Conservation Plan has been prepared in accordance with requirements presented by the Real Estate Procedural Manual (NAVFAC P-73), Chapter 19, Paragraph 24, and shall be effective for the entire lease period. The Soil Conservationist, Real Estate Division, Pacific Division, Naval Facilities Engineering Command, Pearl Harbor, telephone [redacted], is responsible for the plan preparation, and will be the field representative for the Navy in administering the lease.

B. Location and Size of the Lease Area: The agricultural outlease area is located at Pearl City Peninsula, and extends from Lehua Avenue to Waimano Stream channel and is adjacent to the Lehua Elementary School. The property, situated on Pearl City Peninsula, is bounded on the west by Lehua Avenue and Lehua Elementary School, on the north by the H-1 Freeway, on the east by the Waimano Stream flood control channel, and the south side backs up to the irregular shoreline of East Loch. Agricultural outlease areas will hereinafter be referred to as Unit No. 1, containing 19.5 acres, and Unit No. 3, containing 18.2 acres. Figure I-1 shows the location of the agricultural outlease property and the immediate vicinity.
Vehicle and pedestrian access to the lease units is possible by way of Lehua Avenue and an access road paralleling the northern boundary and the H-1 Freeway overpass.

C. Climate: Major climatic influences in the Pearl Harbor region are modified by the State's location within the geographic tropics. The surrounding ocean and Pacific anticyclone are primarily responsible for the area's mild temperatures and persistent northeasterly trade winds. Temperatures vary by seasons as well as diurnally in the Pearl Harbor area. Highs of 87 to 89 degrees are not uncommon during mid-afternoon in the summer. During the winter and early spring, daytime highs average between 76°F and 78°F and nighttime lows may reach the high 50's or low 60's. August and September are the warmest months of the year and January and February are the coolest.

The prevailing wind throughout the year is the east-northeasterly trade. High winds are most likely between November and March and can occur from almost any direction. During the summer months, periods of no wind occur occasionally, but do not persist for more than a day or two.

Average annual rainfall for the region ranges between 20 and 30 inches dependent upon the frequency of southerly winds and their accompanying heavy rains. Relative humidity varies between lows of 58% to 60% and highs of over 80%. The latter occurs during periods of rainfall in mid-summer.

The area's uniform climate affords farmers the opportunity to produce, on a continuous basis, a large variety of crops. However,
due to the uneven and insufficient distribution of rainfall, water supplementation by means of irrigation may be necessary to protect the farmer against crop failure.

D. Soils: The area soils are primarily of marine origin, having been formed from coral reefs and alluvial sediments. The soils owe their identity to the coarseness of the sediments deposited and belong to the Lualualei-Fill land-Ewa association. This association consists of well-drained, fine textured and moderately fine textured soils on pans and in drainageways on the southern coastal plans of the island. The primary soils are in the series: Honouliuli clay (HxA) and Pearl Harbor clay (Ph). A soils map of the lease area is provided as Appendix A. Guides revealing distinctive soil identification, interpretation and capability data (Appendices A-1, A-2 and A-3) have been prepared and are a part of this plan for guidance in adopting management and cropping requirements to site and soil.

E. Description and Use of Lease Area: Unit No. 1, consisting of 19.5 acres, more or less, is leased solely for agricultural use; specifically, truck and orchard crop farming. Principal truck crops that can be grown include cabbage, lettuce, cucumber, snap beans, tomatoes, peppers, onions, broccoli, corn, eggplant, squash and other vegetable crops. Primary orchard crops that may be grown include bananas and papayas. This unit is relatively level and has previously been used for farming. Water for irrigation is available from one of several artesian wells located nearby on the adjacent parcel, Unit No. 3 and by installing an irrigation line from Well 2358-02 as prescribed in Section III, Conservation Measures.
Unit No. 3, consisting of 18.2 acres, more or less, was designated under House Resolution No. 235, HD-1, State of Hawaii, as "unique agricultural lands" and in keeping therewith, Navy policy is that the wetland areas within this unit shall be farmed solely for specialty paddy crops such as watercress, lotus root, taro, swamp cabbage and water chestnuts. Any use which proposes to change the quality or character of the wetland areas is not permitted. This unit is low and at least three artesian wells are located on the property which supply enough water for flooding watercress beds and irrigating crops. Appendix G depicts the locations of existing artesian wells.

Absolutely no other use(s) of the lease properties will be permitted without prior written consent of the Director, Real Estate Division, Pacific Division, Naval Facilities Engineering Command.

All conservation practices, including liming and fertilization, shall be performed in accordance with the standard specifications of the United States Department of Agriculture, Soil Conservation Service and/or as recommended by the College of Tropical Agriculture and Human Resources, University of Hawaii. Soil tests shall be used to determine amounts of lime and fertilizer needed. The Navy will take soil samples for testing to insure compliance with this requirement. Commercial fertilizers shall not be used in watercress cropping on Unit No. 3. The lessee shall utilize the technical services of the local Soil Conservation Service or Cooperative Extension Service, University of Hawaii, in the design, layout, construction and supervision of the conservation practices performed.
II. COORDINATION WITH MILITARY

A. Military Use: Current military use of the land is to provide buffer and peripheral areas without obstruction to permit public works maintenance and support services for Navy and Marine Corps activities in Hawaii. The agricultural lease operation is secondary and subject to military requirements for the land. The lessee shall conduct his operations in a manner which will not interfere with Government use. The leased land must be protected during use from damage to both crops and land.

B. Notification and Coordination: The lessee or his representative shall closely coordinate scheduling of conservation improvements prescribed herein with the Activity Civil Engineer (ACE), Navy Public Works Center, Pearl Harbor, or an authorized representative. For this purpose, the lessee shall contact:

Ms. Trina H. Nagasawa, Activity Civil Engineer
Building A-4 (1st Deck)
Navy Public Works Center

The lessee shall provide the ACE with current telephone numbers where the lessee and/or his representative may be contacted during working and non-working hours. The lessee or his representative shall be available at all times to correct emergency situations with regard to the lease.

C. Other Activities: The right is reserved for others, at the direction of the Activity and/or Pacific Division, Naval Facilities Engineering Command (PACNAVFACENGCOM), to conduct conservation programs, fire control and prevention, and weed/pest control on the lease area. The lessee and all persons in his employ or supervision shall adhere to Navy regulations regarding vehicle travel, security, and safety.
III. CONSERVATION MEASURES

A. General. Conservation measures prescribed are intended to:
(1) provide for multiple purpose use of these lands for military activities and security, agricultural production, wildlife, and soil and water conservation; and (2) protect the ecological balance to insure the continued productivity of the land while permitting economic returns to the lessee. It is the intent of the Government that the land be utilized in accordance with sound agricultural management practices consistent with concurrent multiple purpose use. The protection of the Activity's resources from deterioration by erosion, flooding, wildfire, noxious weeds, pest infestations or other detriments is considered inherent in the sound agricultural management to be practiced by the lessee.

B. Conservation Measure Expenses.

1. Lessee's expenses. The lessee will be required to perform specific conservation measures at his own expense. These measures are detailed below and in Appendix C. Additionally, under Article A of Part II of this lease, the lessee will be responsible at his own expense to protect, preserve, repair and otherwise generally maintain the leased property.

2. Rent Credit. The Government is authorized by Federal law to ask that lessees undertake additional improvements which contribute to the usefulness or productivity of the land as a part or all of the consideration (rent) for the lease. Once approved by the Government, the expenses incurred in performing this work are applied
as a credit to the rent the lessee would otherwise pay to the Government. To the extent the rental value established in the lease exceeds the approved cost of the additional improvements undertaken on a credit basis, the lessee is obligated to pay the difference as cash rent. No cash rent is required in the event the rent amount does not exceed the cost of the additional improvements. These additional improvements are described below. Also, Appendix C details which specific conservation measures are to be performed at the lessee's expense and which are to be performed on a credit basis. The precise details of the credit plan appear in Article B of Part II of this lease.

C. Conservation Improvements and Services. The lessee will be required to complete on schedule, the planned conservation improvements depicted on the Conservation Plan Map Appendix B and as outlined in Appendix C herein. Action will be taken by the Government to terminate this agreement for breach in accordance with Article F of Part II of this lease if the Appendix C improvements are not completed to the satisfaction of the Government within the prescribed time period. Title to all improvements constructed or installed hereunder passes to the Government upon satisfactory completion of the work and written approval by the Government of the "Actual Costs" in accordance with Article B of Part II of this lease. These improvements and services include:

1. Tillage: Tillage operations will be required on Unit No. 1 for preparing the fields, planting and harvesting crops.
Substantial disk harrowing followed by plowing and smoothing will be required initially to properly prepare fields in this unit. When fields are repeatedly worked, the implement depth should be varied from time to time to prevent a "plow pan" from forming. Narrow non-tilled strips should be maintained along edges of ditch banks to prevent soil from sloughing into the ditches.

2. **Cropping System and Yields:** The lessee shall establish a conservation cropping system for both leased units. Yearly cropping plans shall be submitted to PACNAVFACEENGCOM. Also, an annual report of the average per acre yields of principal crops grown shall be submitted to PACNAVFACEENGCOM to cover the preceding calendar year production or fraction thereof.

3. **Crop Residue Utilization:** All plant residues will be incorporated into the soil to provide mulch and general soil improvement to farming Unit No. 1. Burning of crop residues is strictly prohibited.

4. **Drainage:** The lessee shall on a credit basis, in accordance with Section IV herein, mechanically clean the existing drainage ditches as shown in Appendix B in accordance with the schedule given in Appendix C. The lessee shall clean ditches with a dragline and regular bucket or other suitable mechanical means in accordance with the standards provided in Appendix D. Soil sediment removed during the dragline operation shall be spread and leveled to blend with existing field surfaces. Similarly, all brush cleared in the process of this work shall be disposed of promptly.
Drainage ditch maintenance shall be conducted so as not to disturb side slopes any more than absolutely necessary. Subsequent to the ditch clearing performed on a credit basis as outlined in Appendix C, the lessee shall at his own expense maintain all drainage ditches free of weeds, silt, and debris that may interfere with efficient and continuous drainage. In this regard, all drainage ditches shall be cleaned a minimum of one time per year and additionally as necessary. Annual maintenance required by the lessee is summarized in the Record of Conservation Plan, Appendix C. Absolutely no deviation from drainage improvements, as outlined in this plan, shall be permitted without prior written consent of the Director, Real Estate Division, PACNAV FACENGCOM.

5. **Culvert Maintenance:** The lessee, at his own expense, shall routinely inspect and maintain all drainage culverts associated with the leased property. All culverts, inlet and outlet ditches shall be kept free of silt and debris to facilitate drainage and properly intercept and channel water under road surface areas. Culvert maintenance shall be conducted during the first year of the lease, preferably in conjunction with drainage ditch maintenance.

6. **Debris Removal:** The lessee, at his own expense, shall insure proper cleanup of the leased area used by his personnel and agents and promptly remove all debris, refuse, garbage, pesticide and/or herbicide containers, etc., used in farm operations.

7. **Pesticides:** As used herein, the term "pesticides" includes herbicides, insecticides, fungicides, rodenticides,
algaeicides and avicides. With regard to all actions relating to pest control undertaken by the lessee or his agents, the lessee shall assume full responsibility for complying with all Federal, state, and local standards for the prevention, control and abatement of environmental pollution. Any pesticides used for insect, disease, or weed control shall be approved and registered by the Environmental Protection Agency for the crops being grown. In addition, any state or county permits required for application of a particular pesticide shall be obtained by the lessee. All applications of pesticides shall be accomplished in compliance with Department of Defense requirements for safety, effectiveness and environmental protection. In this regard, the services of PACNAVFACEGCOM Applied Biology Branch, Code 114 (telephone (8 8 8)), will be provided as needed. Specific and complete information concerning the lessee's proposed pesticide application program will be furnished annually by the lessee prior to any pesticide applications. This information will include the following: (a) common name and concentration of product (pesticide); (b) formulation of product; (c) approximate amount of product to be used; (d) target pest or weed; (e) crop and approximate acreage to be treated; and (f) application rate (per acre). Said information shall be provided directly to:

Commander
Attn: Code 248
Pacific Division
Naval Facilities Engineering Command

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Only those pesticides reported to and approved by PACNAVFACENGCOM shall be utilized by the lessee. The Government may provide a trained and certified pest controller to observe and approve all pest control operations conducted on the leased area. The lessee shall keep records of pesticides used for reporting purposes. An annual report of pesticides used shall be made each year to cover the preceding calendar year or fraction thereof following the format and outline in Appendix E, entitled Pesticide Use Information - Agricultural Outleases. This report shall be submitted to PACNAVFACENGCOM using the above noted address for inclusion in Pest Management Reports as required by NAVFACENGCOM Instruction 6250.3F.

8. Brush and Weed Control: Weeds and brushy species shall be controlled on the lease units with chemicals or by machine or hand weeding. California grass has become well established on much of the area and is considered a serious weed problem. Other areas have been invaded with grasses, haole koa, and other scrub vegetation.

The lessee, at his own expense, will be required to control and/or eradicate undesirable vegetation and destructive weeds on the lease area and maintain agricultural units in a most productive state. Additionally, the lessee will be required to control weeds in and along drainage ditches and clear and maintain a minimum five-foot wide pathway along each side of all fence lines by pruning and spraying to a maximum height of twelve inches.

For chemical control, both preemergence and contact herbicides shall be used. Application can be by either pump-up or
backpack sprayers and herbicides shall possess a high killing efficiency and desired selective characteristics.

Brush and other plant residues accumulated in mechanicial weeding operations shall be cleared and disposed of immediately upon completion of such work. Absolutely no burning of ditches, brush, stubble, grass or weeds will be permitted.

9. Maintenance of On-Site Improvements: The lessee, at his own expense, shall maintain in good condition all facilities presently associated with the lease area and additional approved facilities constructed during the lease period. Existing roads, culverts, utility lines, structures and other facilities damaged by operations of the lessee shall be repaired or replaced at the lessee's own expense. Emergency repairs, as determined necessary by the ACE or an authorized representative, shall be made by the lessee within 48 hours after notification. Repaired or replaced work shall be in a condition as good as existed prior to the start of the lease. Similarly, the lessee shall repair, at his own expense, all said facilities damaged by others or by natural hazards (unless the Government determines the damage from said causes to be excessive, i.e., above and beyond normal wear and tear). In such cases, the Government will appraise the damages and determine appropriate restitution.

Any materials required to maintain Government owned facilities shall be of at least the same type and quality as those used in the original construction. All materials used for such repairs shall become the property of the Government.
10. New Fence Construction: The lessee shall construct on a credit basis, in accordance with Section IV herein, new, permanent, security fencing, as shown in Appendix B to separate and secure the agricultural outlease area.

The lessee shall construct approximately 1,800 lineal feet of chain-link, security fencing along designated portions of the outlease perimeter; 689 lineal feet, 350 lineal feet, and 761 lineal feet along the northern, eastern and western boundaries, respectively. Portions of the security fencing to be constructed shall include the installation of three 10'x8'+1 single drive gates; two along the western boundary and one along the northern boundary as depicted in Appendix B. Chain-link fabric, posts, tops, rails, braces, gates and other miscellaneous fence components and accessories shall be in compliance with specifications contained in Appendix F. Prior to construction of new, security fencing, it is imperative that the lessee receive specific written approval from PACNAVFAV CENGCOM (as outlined in Section IV herein) for materials and costs associated with fence construction as required.

11. Recasing of Well No. 2358-02: The lessee shall on a credit basis, in accordance with Section IV herein, provide for the recasing of Well No. 2358-02 and installation of a gate-valve assembly as shown on the sketch accompanying Appendix H, the location depicted on Appendix B, in accordance with the schedule given in Appendix C. The lessee shall coordinate the performance of this work with the Division of Water and Land Development, Department of Land
and Natural Resources, State of Hawaii and obtain all necessary permits as required.

The well casing shall be cut to remove the existing deteriorated valve assembly and other above ground appurtenances having a casing extension of about one (1) foot above ground. The well shall be sounded or logged to determine total depth and condition of the open well bore and existing casing. The well casing shall then be cleared from the top of the casing to a depth of 58 feet below existing ground level. Upon evaluation of the logging data, the well shall be recased using 6-inch polyvinyl chloride (PVC) plastic pipe. The annulus formed between the existing casing and the 6-inch PVC casing shall be grouted using the tremie method. Replacement of the existing valve assembly, clearing of the well casing, logging, recasing and clean up operations shall be performed in accordance with specifications provided in Appendix H.

12. Installation of Irrigation Line: The lessee shall install on a credit basis, in accordance with Section IV herein, a main irrigation line from Well No. 2358-02 to agricultural outlease Unit No. 2 as shown in Appendix B and scheduled in Appendix C. The main delivery line shall consist of approximately 1,200 lineal feet of Schedule 40, 260 psi, 3-inch polyvinyl chloride (PVC) plastic pipe. The main delivery pipe line shall be buried underground to a depth of no less than 6 inches. During installation of the irrigation line, the lessee shall identify the exact location of the underground PVC pipe by installing permanent markers at all
angle-points using galvanized or conduit pipe, metal posts, etc. The lessee shall be responsible for designing the type of irrigation system, i.e., sprinklers, laterals, risers, pump and spacing requirements, etc., best suited to satisfy his particular cropping situation and supplemental water needs.

13. **Fire Prevention:** The lessee, his agents, and all persons in his employ shall perform all operations in a manner so as to prevent and/or reduce fire hazards. The lessee shall comply with Navy fire control and prevention regulations (a copy of which may be obtained from the ACE). The following precautions and practices are required and must be undertaken by the lessee at his own expense:

a. **Equipment:** All engine-driven equipment utilized by the lessee on the lease premises must be equipped with operable spark arresters, mufflers, and tail pipe assemblies. In addition, any 1976 or newer vehicle having a catalytic converter pollution control device may not be driven off of access or improved roads due to the fire hazard created by the extreme heat generated by this device.

b. **Storage of Equipment and Flammable Materials:** Equipment, fuel, and oil may be stored only in an area approved by the ACE. Said storage area(s) shall be kept in a neat and orderly condition at all times. Extreme care shall be taken by the lessee to reduce the risk of an accidental fire in these areas.

14. **Road Protection:** The lessee shall not maneuver "track-laying" or spike-wheeled vehicles over outlease access roads or city paved roads adjoining Navy property unless road protective
measures are taken. The lessee shall be liable for the costs of repairing any Activity road which is damaged, impaired or cut by any equipment under his supervision or authorization. Existing roads used by the lessee shall, at all times, be maintained usable and shall be kept passable and clear for official Navy use.

15. Fertilization: The lessee, on a non-credit basis, shall incorporate an improved fertilization and liming program for Unit No. 1 based on soil tests. Fertility and pH levels shall be checked by soil sampling and testing by either the Soil Conservation Service or the Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawaii. Lime and fertilizer shall be applied, as determined by soil tests, to maintain the desired pH and fertility for optimum crop yields.
IV. PROCEDURES FOR ACCOMPLISHING SOIL AND WATER CONSERVATION WORK AND LONG TERM MAINTENANCE PROJECTS ON A CREDIT BASIS

A. The following procedures apply to projects for which specifications are included in this plan:

1. Lessee shall request, in writing, permission to begin work from PACNAVFACENGCOM (with a copy to the Activity) and shall provide three bids, if possible, but no less than two competitive bids from qualified contractors for completing the work. In the event the lessee elects to do the work himself, no other bids are necessary, provided the lessee submits a bid price which is equal to or below the Government's fair cost evaluation.

2. PACNAVFACENGCOM shall review the bids and, if acceptable, notify the lessee in writing (with a copy to the Activity ACE) to proceed with the project on the basis of the bid which is most favorable to the Government (i.e., completion of the project at a reasonable price and in a sound, efficient, and timely manner).

3. Upon receipt of written notification from PACNAVFACENGCOM, the lessee shall notify the Activity ACE concerning the details of the work, starting dates and times, location of where work is to begin, etc. The lessee shall closely coordinate with the Activity in all aspects of the work to be performed. The lessee shall insure that he and his contractor comply with Activity regulations regarding health, safety, and security as set forth in the lease.

4. Upon completion of the project, the lessee shall submit to PACNAVFACENGCOM, Code 24B, copies of all bills of sale and receipts for labor and material used in connection with the project. In the event the
lessee performs the work himself, he shall submit an itemized bill for his labor and material.

5. PACNAVFACEENGCOM, Code 24B, shall inspect the work for adherence to specifications and quality of workmanship.

6. Upon completion and satisfactory performance of work, the lessee shall receive credit against the Maximum Amount to be Expended specified in Article 4 of Part I of this lease and Section III-B of this plan.

B. When new projects are proposed during the term of this lease for which specifications are not included in this plan, the following procedures apply:

1. The Activity will furnish technical specifications and justification for conservation projects or long-term maintenance work to PACNAVFACEENGCOM for review by the Natural Resources Management Staff. (Note: Technical assistance in preparing specifications is available from the Natural Resources Management Staff, PACNAVFACEENGCOM).

2. PACNAVFACEENGCOM will, upon approval and modification of specifications as necessary, provide the lessee with specifications and notice to obtain bids for the project. Copies of all such correspondence will be sent to the Activity.

3. The lessee will obtain three bids if possible, but not less than two bids, from qualified contractors and forward them to PACNAVFACEENGCOM (with copies to the Activity). If the lessee elects to do the work himself, he shall submit an itemized bid proposal covering all aspects of the project.

4. Follow procedures set forth in paragraphs IVA2 through IVA6 above.
V. TECHNICAL ASSISTANCE

Technical assistance on the application of prescribed conservation practices is available to the lessee from the following offices:

Commander, Pacific Division
Naval Facilities Engineering Command
Real Estate Division, Code 24B
Pearl Harbor, [redacted]

Activity Civil Engineer
Navy Public Works Center
Building A-4 (1st Deck)
Pearl Harbor, [redacted]

U. S. Department of Agriculture
Soil Conservation Service
Prince Kuhio Federal Building

Cooperative Extension Service
College of Tropical Agriculture and Human Resources
University of Hawaii at Manoa

Division of Water and Land Development
Department of Land and Natural Resources
State of Hawaii

Department of the Interior
United States Geological Survey
Water Resources Division
SOILS MAP

UNIT BOUNDARY

SOIL SYMBOL
HxA
Ph

SOIL NAME
Honouliuli clay
Pearl Harbor

(REFER TO SEC. I-D)

APPENDIX A
IDENTIFICATION OF THE SOILS
AGRICULTURAL OUTLEASE UNITS 1 AND 3
NAVY PUBLIC WORKS CENTER
PEARL CITY PENINSULA
PEARL HARBOR, HAWAII

<table>
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<th>MAP SYMBOLS</th>
<th>SOIL NAME</th>
<th>INTERPRETATIVE DESCRIPTION OF THE SOIL</th>
</tr>
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<tbody>
<tr>
<td>HxA</td>
<td>Honouliuli clay</td>
<td>This soil is dark reddish-brown, very sticky and very plastic. The surface layer is about 15 inches thick. The subsoil and substratum both have subangular blocky structure. Permeability is moderately slow and the soil is neutral to mildly alkaline. Surface runoff is slow and erosion hazard is no more than slight. Available water capacity is about 1.8 inches per foot of soil. Workability is slightly difficult because of the very sticky and plastic nature of the clay soil. Slopes range from 0.2 percent.</td>
</tr>
<tr>
<td>Ph</td>
<td>Pearl Harbor</td>
<td>This soil is poorly drained and runoff is very slow to ponded. The surface layer is very dark gray and about 12 inches thick. The subsoil is about 19 inches thick and is very dark gray to grayish-brown. The subsoil has both an angular and subangular blocky structure. The subsoil is moderately alkaline while the surface layer is neutral. The substratum is muck or peat and workability is very difficult. The available water capacity is about 1.4 inches per foot in the surface layer and subsoil.</td>
</tr>
</tbody>
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INTERPRETATIONS OF THE SOILS

AGRICULTURAL OUTLEASE UNITS 1 AND 3
NAVY PUBLIC WORKS CENTER
PEARL CITY PENINSULA
PEARL HARBOR, HAWAII

<table>
<thead>
<tr>
<th>MAP SYMBOLS</th>
<th>MAPPING UNIT</th>
<th>CAPABILITY CLASSIFICATION: IRRIGATED AND NON-IRRIGATED CROPLAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>HxA</td>
<td>Honouliuli clay</td>
<td>Capability I (Irrigated): These soils have few limitations when used for crops if irrigated. The soils are silty clays and clays that are moderately well drained to well drained. These soils can be cultivated within a narrow range of moisture content. Non-irrigated soils of this series have severe limitations - IVc.</td>
</tr>
<tr>
<td></td>
<td>0 to 2 percent slopes</td>
<td></td>
</tr>
<tr>
<td>Ph</td>
<td>Pearl Harbor</td>
<td>Capability IVw (Irrigated and Non-Irrigated): These soils have severe limitations because of excess water and are poorly to very poorly drained. Plant invasion and competition from California grass is severe on the wetter soils.</td>
</tr>
</tbody>
</table>
CAPABILITY DESCRIPTIONS OF THE SOILS AND SOIL SYMBOLS

The capability classification is a grouping of soils that shows in a
general way how suitable soils are for various kinds of farming, i.e.,
cropland, pasture, and woodland suitability. The grouping is based on
limitations of the soil, the risk of damage when they are used and the way
they respond to treatment.

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<th>Capability Classes</th>
<th>Capability subclasses</th>
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<tr>
<td>CLASS I Soils with few limitations that restrict their use.</td>
<td>e-erosion hazard</td>
</tr>
<tr>
<td>CLASS II Soils with some limitations that reduce the choice of plants or require moderate conservation practices.</td>
<td>w-wetness or flooding hazard</td>
</tr>
<tr>
<td>CLASS III Soils with some limitations that reduce special conservation practices, or both.</td>
<td>s-soil limitations such as stoniness, shallowness, or dryness</td>
</tr>
<tr>
<td>CLASS IV Soils with very severe limitations that restrict the choice of plants, require special conservation practices with careful management, or both.</td>
<td>c-climate limitations, i.e., too cold or dry (used in Hawaii)</td>
</tr>
<tr>
<td>CLASS V Soils with limitations impractical to remove without major reclamation. Use limited largely to pasture, woodland, or wildlife habitat.</td>
<td></td>
</tr>
<tr>
<td>CLASS VI Soils with severe limitations that make them generally unsuited for cultivation. Generally suited to pasture, woodland, or wildlife habitat.</td>
<td></td>
</tr>
<tr>
<td>CLASS VII Soils with very severe limitations that make them unsuited for cultivation. Use restricted largely to pasture, woodland, wildlife habitat.</td>
<td></td>
</tr>
<tr>
<td>CLASS VIII Soils and land forms preclude use for cultivation. Use restricted solely to recreation, wildlife habitat, water supply or esthetic purposes.</td>
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APPENDIX A-3
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<th>PLANNED</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Minimum Tillage Land Preparation</td>
<td>19.5 Acres</td>
<td>1st thru 5th</td>
<td>Minimum tillage to property prepare fields. Non-credit work.</td>
</tr>
<tr>
<td>1 &amp; 3</td>
<td>Cropping System and Yields</td>
<td>37.7 Acres</td>
<td>1st thru 5th</td>
<td>Non-credit work.</td>
</tr>
<tr>
<td>1</td>
<td>Crop Residue Utilization</td>
<td>19.5 Acres</td>
<td>1st thru 5th</td>
<td>Non-credit work.</td>
</tr>
<tr>
<td>1 &amp; 3</td>
<td>Drainage Ditch Mechanical Cleaning</td>
<td>2,100 L.F.</td>
<td>1st</td>
<td>From Pt. A to Pt. B and from Pt. C to Pt. D. Refer to Soil &amp; Water Plan, Sec. III.C.4 and Appendices B &amp; D. Credit work.</td>
</tr>
<tr>
<td>1 &amp; 3</td>
<td>Drainage Ditch Maintenance</td>
<td>Entire Leased Area</td>
<td>Continuous Responsibility</td>
<td>Non-credit work. Refer to Soil &amp; Water Plan, Sec. III.C.4.</td>
</tr>
<tr>
<td>1 &amp; 3</td>
<td>Culvert Maintenance</td>
<td>Entire Leased Area</td>
<td>Continuous Responsibility</td>
<td>Non-credit work.</td>
</tr>
<tr>
<td>1 &amp; 3</td>
<td>Debris Removal</td>
<td>Entire Leased Area</td>
<td>Continuous Responsibility</td>
<td>Non-credit work.</td>
</tr>
<tr>
<td>1 &amp; 3</td>
<td>Pest Control (Rodents &amp; Insects)</td>
<td>Entire Leased Area</td>
<td>As Required</td>
<td>Non-credit work. Refer to Soil &amp; Water Plan, Sec. III.C.7 and Appendix E.</td>
</tr>
<tr>
<td>1 &amp; 3</td>
<td>Brush and Weed Control</td>
<td>Entire Leased Area</td>
<td>As Required</td>
<td>Non-credit work. Refer to Soil &amp; Water Plan, Sec. III.C.8.</td>
</tr>
<tr>
<td>UNIT NUMBER</td>
<td>CONSERVATION MEASURES AND IMPROVEMENTS</td>
<td>PLANNED</td>
<td>AMOUNT</td>
<td>YEAR</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------------</td>
<td>---------</td>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>1 &amp; 3</td>
<td>Maintenance of On-Site Improvements</td>
<td>Entire</td>
<td>As required</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Fence Construction (Chain-link with one (1) gate)</td>
<td>1,040 LF*</td>
<td>2nd</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>New Fence Construction (Chain-link with two (2) gates)</td>
<td>760 LF*</td>
<td>3rd</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Well Recasing (No. 2358-02)</td>
<td>Recase to depth of 58' or more with 6&quot; PVC Pipe*</td>
<td>1st</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Installation of Irrigation Line</td>
<td>1,200 LF (3&quot; PVC Pipe)</td>
<td>1st</td>
<td></td>
</tr>
<tr>
<td>1 &amp; 3</td>
<td>Fire Prevention</td>
<td>Entire</td>
<td>Continuous</td>
<td>Responsibility</td>
</tr>
<tr>
<td>1 &amp; 3</td>
<td>Road Protection</td>
<td>Entire</td>
<td>Continuous</td>
<td>Responsibility</td>
</tr>
<tr>
<td>1</td>
<td>Fertilization</td>
<td>19.5 Acres</td>
<td>1st thru 5th</td>
<td></td>
</tr>
</tbody>
</table>

*As authorized by PACNAVACENTCOM.
Construction of FARM DRAINAGE DITCHES

Drainage Ditches May Be Dug And Maintained In Several Ways

A RIGHT WAY

Dug straight and true, Sides neatly sloped, Spoils leveled, Fenced to keep stock out, Weeds cut from banks each year.

AN ASSET TO YOUR FARM
Enhances the appearance and value of the farm

A WRONG WAY

A crooked, Poorly aligned ditch, Banks roughly machine sloped, Spoils still piled, Stock trample banks, No annual maintenance is evident.

A LIABILITY TO YOUR FARM
Looks unkempt and may mean a decreased sale value of farm

Before digging a ditch get a survey!

Getting The Right Kind Of Drainage Ditch

A Survey made with level, and stakes set to show depth and width of ditch every 100 feet can result in a ditch shaped thus

Depth and size of ditch are determined by the conditions at the site, including the amount of water that is to be removed by the ditch.

U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

APPENDIX D
Grade of ditch should be controlled as digging progresses so that water will have proper chance to move down the ditch and away from the farm land area. For digging to an accurate grade the method shown below may be used. It is known sometimes as the Swede Level method. The Swede Level sighting stakes cost little in the overall cost of the ditch. They can be of wood but are best made of metal. They may be furnished by the machine owner.

Swede level stakes A and A' are of metal, with sharp points, and cross bars at 5' above the step plate S and S' (see sketch for more detail).

Man has shovel with a mark 5' up on handle. He checks grade in the already dug ditch by sighting back down the completed ditch over the cross bars. In position shown above he quickly discovers that where he holds the shovel it is too high. He signals to machine operator with his fingers (4 inches too high, etc.), gets out of the ditch so operator can use bucket to remove more dirt before he moves the machine ahead.

For more detailed information and on-site technical assistance, contact your local Soil Conservation District representative.
Typical layout - individual farm drainage system

(Where the ground surface is undulating, ditches and drains will meander)
Figure 3-4, Parallel system
(Illustrates field layout suited to growing a variety of row crops, including cotton, corn, soybeans, sugarcane, grain sorghum, etc.)
After the ditches have been constructed, smooth or grade the area between the ditches. This will eliminate all the minor depressions and humps that obstruct the free flow of surface water.

Farming operations up and down slope across field ditches up to approximately 2% slope depending upon erosion hazard and parallel to field ditches on slopes above 2%.

TYPICAL FLAT BOTTOM SECTION

Fill depressions with material excavated from ditch

Spread out excess excavated material near so that ridge will not interfere with equipment.

TYPICAL V-CHANNEL SECTION

Natural Ground Level

Min. Depth

Side Slopes

Natural Ground Level

Min. Depth

Side Slopes

Cross slope system on slight to moderate slopes
PESTICIDE USE INFORMATION - AGRICULTURAL OUTLEASES

Date ____________

1. General Information
   a. Lessee's Name: ____________________________________________
   b. Contract Number: __________________________________________
   c. Lease Location (Naval Installation): __________________________

2. Pest to be Controlled (Common Name): _________________________
   ____________________________________________________________

3. Purpose (List specific crop to be protected): ___________________
   ____________________________________________________________

4. Pesticide Information
   a. Common Name: ____________________________________________
   b. Percent of active ingredient or pounds per gallon of active
      pesticide: _________________________________________________
   c. Registered Use: ___________________________________________
   d. Registration Number on Label: _______________________________

5. Application
   a. Form Applied (Dust, granule, emulsion, bait, solution, gas, other
      (specify)): _______________________________________________
   b. Use Strength (List strength of formulation in percent active
      ingredient when diluted or mixture of concentrate with diluent): _______
c. Pounds of active ingredient per acre or other applicable unit of area: ________________________________

d. Method Used: ________________________________

e. Number of acres or units of area to be treated (best estimate): ________________________________

f. When applied (month or months): ________________________________

g. Number of applications: ________________________________

6. Sensitive Areas

a. Areas to be avoided completely: ________________________________

b. Areas to be treated with caution: ________________________________

7. Other Information

a. Precautions (describe any specific precautions being taken to protect sensitive areas, personnel, etc.): ________________________________

b. Are personnel trained to do the work and to supervise the application of the pesticides? ________________________________

8. Additional Information and Remarks

________________________________________

________________________________________

________________________________________

________________________________________

________________________________________

_____________   ________________________
Date                     Signature

*Refer to Section III(B)(7) of Soil and Water Conservation Plan. This report shall be submitted yearly.
1. DESCRIPTION OF WORK: The work to be performed as a Government-directed conservation improvement project on a credit basis under Agricultural Outlease includes installation of approximately 1,800 lineal feet of new, permanent, chain-link, security fencing along designated portions of the outlease perimeter; 689 lineal feet, 350 lineal feet, and 761 lineal feet along the northern, eastern, and western boundaries, respectively. Portions of the security fencing to be constructed shall include the installation of three 10'x8'x1 single drive gates; two along the western boundary and one along the northern boundary as depicted in Appendix B and sketch accompanying this specification, in accordance with the schedule given in Appendix C. The lessee, or his contractor, shall coordinate the performance of this work with the Activity Civil Engineer (ACE), Navy Public Works Center, Pearl Harbor, telephone (808)471-0211 and the Natural Resources Staff, Pacific Division, Naval Facilities Engineering Command (PACNAVFACENGCOM), Pearl Harbor, Hawaii, telephone (808)471-3217, prior to commencement of operations.

2. APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

   a. Federal Specifications (Fed. Spec.):

      | Specification Code | Description |
      |-------------------|-------------|
      | RR-F-191J/GEN     | Fencing, Wire and Post Metal (and Gates, Chain-Link Fence Fabric, and Accessories) (General Specification) |
      | RR-F-191/1C       | Fencing, Wire and Post, Metal (Chain-Link Fence Fabric) (Detailed Specification) |
      | RR-F-191/2C       | Fencing, Wire and Post, Metal (Chain-Link Fence Gates) (Detailed Specification) |
      | RR-F-191/3C       | Fencing, Wire and Post, Metal (Chain-Link Fence Posts, Top Rails and Braces) (Detail Specification) |
      | RR-F-191/4C       | Fencing, Wire and Post, Metal (Chain-Link Fence Accessories) (Detail Specification) |
b. American Society for Testing and Materials (ASTM) Publications:

A 240-82 (Rev. A)  Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Fusion-Welded Unfired Pressure Vessels

C 94-81  Ready-Mixed Concrete

The Government specifications and forms mentioned, non-Government publications, and other information necessary may be examined at the Natural Resources Office, PACNAVFACENGCOM.

3. SUBMITTALS:

a. Manufacturer's Certificates of Conformance:

(1) Fabric  (5) Rails
(2) Posts  (6) Tension Wire
(3) Braces  (7) Gates
(4) Framing  (8) Post Caps for H-Section

b. Descriptive Data: Prior to delivery of any materials to the building site, descriptive data of fencing materials shall be submitted to and approved by the Natural Resources Staff at PACNAVFACENGCOM for certification that materials to be provided conform with the specifications. The acceptance of certification shall in no case jeopardize the Government's right to test materials when tests are deemed necessary to assure compliance.

4. DELIVERY, STORAGE, AND PROTECTION: All materials shall be delivered to the site in an undamaged condition. Any damaged materials shall be replaced or repaired at no expense to the Government. Delivered materials shall be stored off the ground to provide protection against oxidation caused by ground contact.

5. MATERIALS:

a. Chain-link fencing, fabric, gates, posts, braces, and accessories shall conform to the requirements of Federal Specification RR-F-191/Gen and detailed specifications as referenced herein.

b. Fencing Fabric: Fencing fabric will be in accordance with Fed. Spec. RR-F-191/1; Type I, zinc-coated steel, 9-gage coated wire size, 9-gage core wire size. Mesh size shall be 2 inches. Top and bottom selvages shall be twisted and barbed. Height and Type of fabric shall be as indicated.

c. Fencing, Posts, Rails, and Braces: Per Fed. Spec. RR-F-191/3 line posts shall be Class 1, steel pipe, Grade A. End, corner, and pull posts shall be Class 1, steel pipe, Grade A. Braces and rails shall be Class 1, steel pipe, Grade A. Material shall be zinc-coated steel. Braces shall be the minimum sizes listed in RR-F-191/3 for each class and grade.
d. Fencing Gates: Gates will be in accordance with Fed. Spec. RR-F-191/2; Type I, single swing. Shape and size of the gate frame shall be as indicated. Framing and bracing members shall be of round steel. Steel member finish shall be zinc-coated. Gate frames and braces shall be the minimum sizes listed in RR-F-191/3 for each class and grade except that steel pipe frames shall be 1.90 inches o.d. x 0.120 inches minimum wall thickness. Gate fabric shall be as specified herein for chain-link fencing fabric. Barbed wire top on gate shall be as specified herein. Coating on latches, stops, hinges, keepers, and accessories shall be zinc-coated steel. Gate latches shall be plunger bar type. Gate leaves more than 8 feet wide shall have intermediate members as necessary to provide rigid construction, free from sag or twist. Gate leaves less than 8 feet wide shall have truss roads or intermediate braces. Attach gate fabric to the gate frame in accordance with the manufacturer's standards, except that welding will not be permitted. Arrange padlocking latches to be accessible from both sides of the gate, regardless of latching arrangement.

e. Fencing Accessories: Fencing accessories shall conform to Fed. Spec. RR-F-191/4. All accessories shall have coatings similar to that specified for the chain-link fabric.

f. Concrete: Concrete shall conform to ASTM C 94, having 3/4-inch maximum-size aggregate, and having minimum compressive strength of 3000 psi at 28 days. Proportion grout one part portland cement to three parts clean, well-graded sand and minimum amount of water to produce a workable mix. Slump shall be 4".

6. INSTALLATION:

a. Clearing: Clearing shall consist of the satisfactory disposal of vegetation designated for removal, including brush, shrubs and rubble occurring within the areas to be cleared. Trees, stumps, roots, brush and other vegetation in areas to be cleared (fence line) shall be cut off flush with or below the original ground surface. The extent of clearing shall be 5 feet on both sides of the fence for a total clear swath width of 10 feet.

b. Erection: The fence shall be erected on previously prepared surfaces to line and grade as indicated. Fence installation shall be in accordance with the manufacturer's written installation instructions as modified herein.

c. Grading: A graded fence line shall be established prior to the installation of fencing. The grade shall be such that a clearance of approximately 2 inches between the fence fabric and the pavement or ground shall be held along the line of the fence. The ground along the line of the fence shall be solid and fill dirt used to establish the fence line shall be thoroughly compacted.

d. Excavation: Excavate for concrete-embedded items to dimensions indicated, except in bedrock. If bedrock is encountered before
reaching required depth, continue excavation to depth indicated or 18 inches into bedrock, whichever is less, and a minimum of 2 inches larger than outside diameter of post. Clear post holes of loose material.

e. Post Spacing: Provide line posts spaced equidistant apart, not to exceed 10-foot centers maximum. Provide gate posts spaced as necessary for the size of gate openings. Straight runs between braced posts shall not exceed 500 feet. Provide corner posts or pull posts for any change in direction of 15 degrees or more, or for any abrupt change in grade, with bracing in both directions.

f. Post Setting: Set posts plumb. Provide concrete bases of dimensions indicated except in bedrock. Thoroughly compact concrete to eliminate voids, and finish in a dome. In bedrock, set posts with a minimum of 1 inch of grout around each post. Thoroughly work grout into the hole to eliminate voids, and finish in a dome. Cure concrete and grout a minimum of 72 hours before any further work is performed on posts.

g. Bracing: Brace gate, corner, end, and pull posts to the nearest post with a horizontal brace used as a compression member and a diagonal truss rod and truss tightener used as a tension member.

h. Post Caps: Install post caps as recommended by the manufacturer.

i. Rails: Top rails shall be installed prior to the installation of chain-link fabric and shall pass through intermediate post tops to form a continuous brace from end to end of each stretch of fence. Top rails shall be joined with expansion couplings spaced to adequately allow for expansion and contraction of fence. The top rail shall be securely attached to each pull, brace, corner, and end post.

j. Supporting Arms: Install supporting arms as recommended by the manufacturer. In addition to manufacturer's standard connections, securely anchor supporting arms to posts to prevent easy removal with hand tools. Studs driven by low-velocity powder-actuated tools may be used with steel, wrought iron, ductile iron, or malleable iron. Studs driven by any powder-actuated tool will not be used with gray iron or other material that will be fractured.

k. Top and Bottom Tension Wires: Install top and bottom tension wires before installing chain-link fabric, and pull wires taut. Top and bottom tension wires shall be within 8 inches of the respective fabric line.

l. Fabric: Pull fabric taut and secure fabric to top wire and bottom wire, close to both sides of each post and at intervals of not more than 24 inches on centers. Secure fabric to posts using stretcher bars and ties or clips or by integrally weaving to integral fastening loops of end, corner, pull, and gate posts for full length of each
post. Install fabric on opposite side of posts from area being secured. Install fabric so that bottom of fabric is 2 inches above ground level. Install fence fabric to provide approximately 2-inch deflection at center of fabric span between two posts, when a force of approximately 30 pounds is applied perpendicular to fabric. Fabric should return to its original position when force is removed.

m. Barbed Wire: Install barbed wire on supporting arms above fence posts. Extend each end member of gate frames sufficiently above top member to carry three strands of barbed wire in horizontal alignment with barbed wire strands on the fence. Pull each strand taut and securely fasten each strand to each supporting arm extended member. The method of securing wires shall be positive and complete and in accordance with the fence manufacturer's recommendations.

n. Existing Utilities: Existing utilities and facilities, locations of which are delineated on the Conservation Plan Map, Appendix B of the Soil and Water Conservation Plan, shall be protected from damage, and if damaged, shall be repaired at no additional cost to the Government. If utility lines that are not shown on the drawing are encountered, the Navy shall be notified immediately in order that necessary measures can be taken to minimize interruption of the service and/or fence construction. The lessee, or his contractor, shall perform all work with extreme care to avoid damage to existing facilities and shall take all necessary precautions to keep interferences to a minimum as regards scheduling of work and storage of materials.

o. Cleanup: Upon completion of the work, the lessee, or his contractor, shall remove all waste fencing materials and other foreign matter resulting from the fencing project and leave the job site in a neat and orderly condition. All debris and rubbish shall be removed and transported in a manner that will prevent spillage on streets or adjacent areas. The lessee, or his contractor, shall comply with Federal, State and local hauling and disposal regulations.

7. PAYMENT: Fence line clearing, delivery of materials, installation of security fence ready for use and cleanup operations will be on a lump sum basis, which price shall be full compensation for furnishing all materials, labor, tools, equipment and miscellaneous items, and for accomplishing all work involved in furnishing and installing all materials and components thereof as required by this improvement. Additional materials and labor not shown or listed in the specifications which are necessary to complete this project shall be considered incidental to the work and no additional compensation will be allowed therefor. Payment will be in accordance with Section IV of the Soil and Water Conservation Plan.
ARTESIAN WELL LOCATIONS

PARCEL NO. 1

PARCEL NO. 3

WELL LOCATIONS

NOT TO SCALE

APPENDIX G
1. DESCRIPTION OF WORK: The work to be performed as a Government-directed conservation improvement project on a credit basis under Agricultural Outlease includes also re-casing of Well No. 2358-02 and installation of a new PVC well head valve assembly as shown in Appendix B, in accordance with the schedule given in Appendix C. The lessee shall coordinate the performance of this work with the Division of Water and Land Development (DOWALD), Department of Land and Natural Resources (DLNR), State of Hawaii, and obtain all necessary permits as required. Further, the lessee shall coordinate all operations with the Activity Civil Engineer, Navy Public Works Center, telephone ( ), and the Pacific Division, Naval Facilities Engineering Command, Pearl Harbor, Hawaii telephone , prior to commencement of work.

2. MATERIALS: Materials shall meet the requirements specified below:

   a. Polyvinyl chloride (PVC) plastic pipe (6-inch diameter) shall conform to the requirements of ASTM 1785, Schedule 80. PVC plastic pipe fittings shall conform to the requirements of ASTM D 2466 or D 2467. The coupling rubber ring gasket shall consist of synthetic rubber compound which conforms to the requirements of ASTM D·1869, Rubber Rings for Asbestos Cement Pipe.

   b. All pipe and fittings shall bear the seal of approval of "nSf" trade mark of the National Sanitation Foundation Testing Laboratory, Inc., School of Public Health, University of Michigan, Ann Arbor, Michigan. Solvent cement shall be compatible with and of the kind recognized by the industry as proper for use.

3. WORK REQUIREMENTS: The work on the well shall be performed by a licensed well driller. The order of work for this project shall be as follows:

   a. Establishing a Reference Mark: A reference mark shall be established in a safe location at the job site. The existing measuring point is the top of the horizontal flange on the 12-inch steel casing (13.17 feet above mean sea level). After all work is completed, the elevation of the measuring point for the new system shall be transferred back from the established reference mark to the top of the gate-valve. This elevation point is a USGS datum standard and is necessary for determining the height of the water above mean sea level.
b. Access to the well shall be provided for vehicles and equipment. The work area shall be cleared of all ground and overhead obstructions.

c. Removal of Existing Well Head: The existing 12-inch steel casing shall be cut to remove the valve assembly and other aboveground appurtenances leaving a casing extension of about 1 to 2 feet aboveground. A temporary standpipe shall be installed to prevent artesian flow of water during logging and re-casing operations.

d. Logging: The well shall be sounded by DOWALD to determine total depth and existing condition of the open well bore and casing. Logging data shall be used to determine depths for and setting the new PVC casing and packer. Two days advance notice of readiness to log shall be given by the lessee, or his contractor, to DOWALD. The State's point of contact for such operations is Mr. Ed Sakoda, telephone [redacted].

e. Clearing of the Well: All obstructions shall be cleared and removed from the portion of the well to be re-cased as determined by DOWALD. Clearing of the well shall be judged by the unimpeded passage of a 12-inch diameter drilling bit or equivalent.

f. Well Re-casing: The well shall be re-cased using 6-inch PVC, Schedule 80, plastic pipe, as generally depicted in the attached diagram and as approved by DOWALD in the field. A pneumatic rubber packer shall be installed in the open hole below the existing casing at a depth determined by DOWALD. A grout seal consisting of 1+ foot of sand and 5+ feet of neat cement shall be placed above the packer and allowed to set for 24 hours before grouting the remaining annular space. The remaining annular space shall be grouted through a tremie pipe placed above the grout seal and withdrawn as the grout rises in the annulus.

g. Well head valve assembly: A 6-inch PVC gate-valve assembly shall be installed as depicted on the drawing. A 6-inch threaded cap with a 3/4-inch threaded plug shall be installed on top of the PVC pipe.

h. Cleanup: At the completion of the project, the lessee, or his contractor, shall remove all excess materials and debris not incorporated in or necessary to the re-cased well and leave the job site in a neat and orderly condition. Any damage to the ground and/or existing structures shall be immediately repaired by the lessee or his contractor upon completion of re-casing operations.

4. COMPLETION OF WORK

a. Re-casing of the well shall be considered completed when the well is grouted, well head assembly installed, and site has been cleaned up.
b. Payment: Removal of the existing valve assembly, preparing the well site for logging and re-casing work, clearing any obstructions in the well, installing and grouting PVC casing, installing new PVC well head valve assembly, and cleanup operations shall be paid for on a lump sum basis, which price shall be full compensation for furnishing all materials, labor, tools, equipment and miscellaneous items, and for accomplishing all work involved in furnishing and installing, modifying or repairing the components for combinations thereof as required by this re-casing work. All additional materials and labor not shown or listed on the plans or called for herein which are necessary to complete the re-casing of the well, shall be considered incidental to the work and no additional compensation will be allowed therefor. Payment shall be in accordance with Section IV of the Soil and Water Conservation Plan.
SKETCH OF RECASING OF WELL 2358-02

- 6" THREADED CAP
- 6"x6" THREADED NIPPLE, PVC, SCHED. 80
- TOP OF GATE VALVE = 12' MSL
- 3/4" THREADED PLUG
- STD. HOSE BIB
- NEW 6" PVC SCH 80 CASING
- 6" PVC GATE VALVE
- THREAD JOINT GROUND ELEV. = 0.1 FT
- EXISTING 12" STEEL CASING
- NEAT CEMENT GROUT
- COUPLING 20' O.C.
- CEMENT BASKET
- APPROX. 1' SAND
- PNEUMATIC RUBBER PACKER
- 6" PVC COUPLING TO PREVENT PACKER FROM SLIPPING OFF

NOT TO SCALE
December 6, 1990

Pacific Division Naval Facilities
Engineering command
Pearl Harbor, HI

SUBJECT: Information on Well no. 2358-02 and usage requirements to irrigate Nursery.

I. Present Data on well #2358-02

Casing diameter: 8 inches
Casing depth: 70 feet
Well depth: 336 feet
Ground elevation: 9 feet
Chloride data (@ time of drilling): 1,280-1,800 ppm.

*Information provided by Hawaii State Water resource management.

II. Takano Nakamura Landscaping's requirements to irrigate parcel number one (19.5 Acres)

Approx. amount of plants: 5,700
Water requirements: 15,000-30,000 gal. per day
Main line: 3" Sched. 40 PVC pipe
Pump requirements: 80 gpm.
       60 psi.
Power requirements: 3 phase

*Pump specifics are currently being obtained. As information becomes available, we will pass it on to you.
If you have any questions, please feel free to call me.

Very Truly Yours,

Craig Nakanishi
Project Supervisor
FACSIMILE TRANSMITTAL COVER SHEET

TOTAL NUMBER OF PAGES INCLUDING COVER LETTER: 5

TO: Bruce Eilerts
FROM: Craig Nakanishi

FAX: 471-5870

☐ FOR YOUR COMMENT AND/OR APPROVAL
☐ FOR YOUR INFORMATION
☐ FOR YOUR FILES

OTHER: This is the specification of the plan we plan to use. If you need more information or have any questions, please call.

IF YOU DO NOT RECEIVE ALL PAGES OR IF YOUR COPIES ARE ILLEGIBLE, PLEASE NOTIFY US IMMEDIATELY.

PHONE NO.: [Redacted]
CROWN SUBMERSIBLES

MANUFACTURED UP TO QUALITY, NOT DOWN TO PRICE

DISCHARGE MANIFOLD
Rigidly constructed sturdy casting to resist bending and stresses imposed by extreme depth settings. Grease packed shaft bearing insures lubrication and substantially prolongs the life of this important bearing.

PUMP SHAFT
Polished and precision straightened, oversized shaft assures trouble-free operation and increases the rigidity of bowl unit. Stainless steel shafting is standard in all units.

INTERMEDIATE BEARINGS
Cutless rubber bearings are standard, lending resistance to sand abrasion wear on shaft bearing surface, while providing maximum support of intermediate stage impellers.

IMPELLER COLLETS
Stainless steel tapered wedge to match impeller bore, split to simplify assembly and disassembly and provide a positive lock.

MOTOR COUPLING
Large stainless steel coupling accurately machined for perfect alignment, balance and power transmission.

TOP BEARING PLUG
Not only seals grease packed shaft bearing, it restricts excessive vertical upthrust on pump shaft during startup, imposed hydraulically or by positive suction pressures.

INTERMEDIATE BOWLS
Extra heavy wall section high density castings, hydraulically designed for optimum performance. Flanged construction assures ease of assembly and disassembly when using specialized materials.

IMPELLERS
Enclosed impellers are precision cast, machined and balanced for maximum efficiency and vibration-free operation.

MOTOR ADAPTER
Rigidly constructed sturdy casting supports lower shaft bearing and allows use of extra large motor capacity - without stress distortion during operation. Enclosed coupling area restricts entrance of abrasive materials and protects motor seal. Hydraulically designed to minimize entrance losses.
SUBMERSIBLE PUMPING,
THE WAVE OF THE FUTURE.

Submersible pumps have made tremendous gains over line shaft turbine pumps in recent years. Important technological innovations are responsible for a whole new generation of submersible equipment - including pumps, motors, controls, tanks, and fittings for a wide range of applications.

Submersible pumps save dollars.

Submersible pumps are not only less expensive to purchase than turbine pumps, they're less expensive to install, operate, and maintain under normal circumstances. Installation costs less because the pump and motor assemble together and become one complete unit. This unique design requires less work for the installer, which means a savings of both time and labor.

Operation costs are less because the energy efficient motor is attached directly to the pump, reducing energy consumption due to friction losses inherent in line shaft turbine pumps - due to numerous bearings and long drive shafts. Maintenance costs are less because submersible pumps are water lubricated, periodic oil and grease lubrication is not required. There are no gear drives or ratchets or no long drive shaft vibrations which could result in breakdowns and costly repairs.

Submersible pumps go to great lengths (and depths) to meet your needs.

It is important to save money, but there are other reasons to specify submersible pumps rather than turbine pumps. In some instances, a submersible pump is the only choice. For example, in deep wells where line shaft turbine pumps are impractical, or in wells that are too crooked for a line shaft turbine pump. Submersibles can be operated vertically, horizontally or at any degree of angle, because the pump and motor are underground, only the controls are above ground and normally located inside a building. The submersible pump system is virtually free from vandalism and rodent damage. No above ground equipment or pump house is necessary because the motor is underground where it should be - directly at the water source.

Some typical applications for submersible pumps are:

- Agricultural (irrigation)
- Industrial (factories, plants)
- Municipal (water supply & fire protection)
- Institutional (hospitals, schools)
- Deep wells
- Mineral mining (solution method)
- Offshore platforms (exploration, or production)
- PLANTMONT
- In-line boosters

Warriors of weather and environment.

Because submersible pumps operate in a well environment of constant temperature, there's no freezing problem. A submersible pump is immune to flood damage, because it's already under water, and there's no environmental sight or noise pollution.
MODEL 5 MC-85
PERFORMANCE CHARACTERISTICS

BOWL: CAST IRON or NI-RESIST -- DIA. 5" O.D. CHANGE EFFICIENCY AS FOLLOWS
IMPELLER: BRONZE or NI-RESIST
DISCHARGE: 4" STANDARD
K FACTOR: 1.6
MAX. O.D. W/CABLE GUARD: 5¾"
BEARING: CUTLESS RUBBER or BRONZE

POWER: ELECTRIC
CYCLE: 60 Hz
R P M: 3450
IMPELLER TYPE: ENCLOSED
BOWL TYPE: FLANGED
CURVE SHEET NO. 1

NOTE: EFFICIENCY PERFORMANCE BASED ON CAST IRON BOWLS - POLISHED BRONZE
IMPELLERS AND 6 FEET SUBMERGENCE.

THIS CHARACTERISTIC CURVE IS BASED ON FACTORY TESTS WHEN PUMPING CLEAR, FRESH, NON-
AERATED WATER AT A TEMPERATURE NOT EXCEEDING 80° F. AND UNDER SUCTION CONDITIONS AS
INDICATED.

PUMP PERFORMANCE RATING IS FOR THE DESIGNATED POINT ONLY AND IS SUBJECT TO TEST
TOLERANCES AND PROCEDURES AS SPECIFIED IN THE STANDARD OF THE HYDRAULIC INSTITUTE.
TYPICAL INSTALLATIONS

WBLL INSTALLATION

CONTROL PANEL

CABLE STRAPPED TO RISER PIPE

SURFACE PLATE OR WELL SEAL

PUMP

MOTOR

HORIZONTAL

Inlet

Discharge

IN-LINE BOOSTERS
☐ Nothing above ground
☐ Noiseless
☐ Compact

VERTICAL

Inlet

SUMPS

Discharge

Pump located in a shroud to ensure water flow past the motor

LAKEs, QUARRIES, RIVERS
☑ Floodproof
☑ Out of Sight
☑ Pump Supported by a Sled

CROWN PUMP CORPORATION

SOLD AND SERVICED BY:
FACSIMILE TRANSMITTAL COVER SHEET

TOTAL NUMBER OF PAGES INCLUDING COVER LETTER: 3

TO: Bruce Hebert

FROM: Craig Nakanishi

------------

FAX:

........................................

X FOR YOUR COMMENT AND/OR APPROVAL

URGENT

X AS REQUESTED

FOR YOUR INFORMATION

FOR YOUR FILES

OTHER

........................................

........................................

IF YOU DO NOT RECEIVE ALL PAGES OR IF YOUR COPIES ARE ILLEGIBLE,
PLEASE NOTIFY US IMMEDIATELY.
December 6, 1990

Pacific Division Naval Facilities
Engineering Command
Pearl Harbor, HI

SUBJECT: Information on Well no. 2358-02 and usage requirements to `irrigate Nursery.

I. Present Data on well #2358-02

- Casing diameter: 8 inches
- Casing depth: 70 feet
- Well depth: 336 feet
- Ground elevation: 9 feet
- Chloride data (@ time of drilling): 1,280-1,800 ppm.

*Information provided by Hawaii State Water resource management.

II. Takano Nakamura Landscaping's requirements to irrigate parcel number one (19.5 Acres)

- Approx. amount of plants: 5,700
- Water requirements: 15,000-30,000 gal. per day
- Main line: 3" Schad. 40 PVC pipe
- Pump requirements: 80 gpm.
- 60 ft. disl.
- Power requirements: 3 phase

*Pump specifics are currently being obtained. As information becomes available, we will pass it on to you.
If you have any questions, please feel free to call me.

Very Truly Yours,

Craig Makanishi
Project Supervisor
May 5, 1987

Department of the Navy
Pacific Division, Naval Facilities
Engineering Command (Makalapa, HI)
Pearl Harbor, [Redacted]

Attention: Mr. Tom Egeland (code 248:TE PACNAVFACENGCOM)

Gentlemen:

Attached for your information and files is a memorandum concerning
Well No. 2358-02 on Navy property (Lease No. N627486 RP00009) at Pearl
City Peninsula, Oahu.

Sincerely,

[Signature]

MANABU TAGOMORI
Manager-Chief Engineer

ES:ko
Attach.
cc: Mr. Michael Watanabe
April 14, 1987

MEMORANDUM FOR THE RECORD

FROM: Ed Sakoda

SUBJECT: Recasing of Well No. 2358-02 on Navy Property (Lease No. N627486 RP00009) at Pearl City Peninsula, Oahu

BACKGROUND

Well No. 2358-02 is an artesian well which taps the Koolau basalt aquifer. The original well had a 12-inch casing extending to 58 feet depth with the open hole extending to 336 feet depth. The well has been a U.S. Geological Survey observation well with records dating back to 1910. The well flowed uncontrolled for many years prior to recasing.

RECASING

The well was recased in October 1986 under a Government-directed rent-credit conservation improvement project for the agricultural outlease. The lessee, Gushing Waters, Inc., with approval of the Navy, contracted and paid Roscoe Moss Co. to do the work, the cost of which the Navy will credit towards the first year's lease rent.

The well was recased with an 8-inch I.D. steel casing to a depth of 70 feet to prevent waste of water from the Koolau basal aquifer and to continue its usefulness as an observation well in the Pearl Harbor Ground Water Control Area.

DISCUSSION

After recasing, the well flowed at an estimated 800 gallons per minute (gpm) with chlorides at over 2000 parts per million (ppm).

Because of the high chloride content, DOWALD was asked to investigate the possibility of backfilling the well to improve the freshness of the water. On January 14, 1987, after the well had been shut in for over a month, seven water samples were taken from various depths (see attached results).

The well probably can be freshened by backfilling the open hole (tremied) with basalt sand from a depth of 336 ft. (bottom of well) to a depth of 245 feet. The well should then be tested for flow rate and chlorides. If results prove satisfactory, a 5'+ neat cement plug should be tremied over the sand fill. Should better-quality water be desired, but at the risk of a reduced flow rate, the well may be backfilled to a depth of 200 feet and retested.
After the well rehabilitation has been completed, the well should be protected from tampering and contamination by installation of a concrete slab and housing.

ES:ko
Attach.

ED SAKODA
LEUHA 2358-02

Top of hole = 5' above seafloor (cl. 14.02' MSL)

WATER SAMPLES ANALYZED AT U.S.G.S. LAB.

<table>
<thead>
<tr>
<th>Depth</th>
<th>SpeC. Cond.</th>
<th>Temp.</th>
<th>Chlorides</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 35'</td>
<td>642.83 x 1.052 = 671.6</td>
<td>22.2° C</td>
<td>25</td>
</tr>
<tr>
<td>#2 80'</td>
<td>551.92 x 1.052 = 581.1</td>
<td>22.2° C</td>
<td>25</td>
</tr>
<tr>
<td>#3 100'</td>
<td>539.95 x 1.049 = 566.6</td>
<td>22.3° C</td>
<td>25</td>
</tr>
<tr>
<td>#4 150'</td>
<td>551.60 x 1.052 = 584.9</td>
<td>22.2° C</td>
<td>25</td>
</tr>
<tr>
<td>#5 200'</td>
<td>1937.90 x 1.047 = 2030</td>
<td>22.4° C</td>
<td>25</td>
</tr>
<tr>
<td>#6 225'</td>
<td>3482 x 1.047 = 3640</td>
<td>22.4° C</td>
<td>25</td>
</tr>
<tr>
<td>#7 329'</td>
<td>13,640 x 1.049 = 14,210</td>
<td>22.4° C</td>
<td>25</td>
</tr>
</tbody>
</table>

Temp. compensated
April 14, 1987

MEMORANDUM FOR THE RECORD

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SUBJECT: Recasing of Well No. 2358-02 on Navy Property
(Lease No. N627486 RP00009) at Pearl City
Peninsula, Oahu

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After the well rehabilitation has been completed, the well should be protected from tampering and contamination by installation of a concrete slab and housing.

ED SAKODA

ES:ko
Attach.
LEUWA 2358-02

Top. of casing: 5' below gr. (El. 14.02' MSL)
WATER SAMPLES ANALYZED AT U.S.E.S. LAB.

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>SPEC. COND.</th>
<th>TEMP.</th>
<th>CHLORIDES</th>
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<tbody>
<tr>
<td>55'</td>
<td>642.83 x 1.052 = 676</td>
<td>22.2 °C</td>
<td>118 mEq/L</td>
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<tr>
<td>80'</td>
<td>551.92 x 1.052 = 581</td>
<td>22.2 °C</td>
<td>131 mEq/L</td>
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<td>539.94 x 1.049 = 566</td>
<td>22.3 °C</td>
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<td>557.46 x 1.052 = 582</td>
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<td>131 mEq/L</td>
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<tr>
<td>200'</td>
<td>1937.90 x 1.047 = 2030</td>
<td>22.4 °C</td>
<td>590 mEq/L</td>
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<tr>
<td>225'</td>
<td>3482 x 1.047 = 3650</td>
<td>22.4 °C</td>
<td>1180 mEq/L</td>
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<td>329'</td>
<td>13.640 x 1.049 = 14360</td>
<td>22.6 °C</td>
<td>4150 mEq/L</td>
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TEMP. COMPENSATED
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<th>SPEC. COND.</th>
<th>TEMP.</th>
<th>CHLORIDES (mg/l)</th>
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<td>50'</td>
<td>551.92 x 1.052 = 581</td>
<td>22.2° C</td>
<td>131</td>
</tr>
<tr>
<td>100'</td>
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<td>22.3° C</td>
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<td>150'</td>
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<td>4150</td>
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TEMP. COMPENSATED
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<th>REMARKS:</th>
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<td>Received well on Navy lease land.</td>
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<td>P.C. Peninsula.</td>
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<tr>
<td>A. CHING</td>
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<td>See Me</td>
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<tr>
<td>D. Lum</td>
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<td>Call</td>
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</tr>
<tr>
<td>E. Sakoda</td>
<td></td>
<td>Review &amp; Comment</td>
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</tr>
<tr>
<td>D. Nakano</td>
<td></td>
<td>Take Action</td>
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<tr>
<td>M. Ohye</td>
<td></td>
<td>Investigate &amp; Report</td>
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<td>S. Miyamoto</td>
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<td>Type Final cc:</td>
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<td>M. Tagomori</td>
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<td>H. Sakai</td>
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<td>Mail</td>
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</tr>
<tr>
<td>G. Morimoto</td>
<td></td>
<td>FOR YOUR</td>
<td></td>
</tr>
<tr>
<td>S. Kokubun</td>
<td></td>
<td>Approval</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Signature</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Information</td>
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</table>
Well 2358-02
Peach Tree Peninsula, Oahu
(Well fluids taken off approximately 1/14/87
(Well shut in for over a month)
WELL 2358-02
Peach City Peninsula, Oahu

Chloride samples taken w/logger on 1/14/67
(Well shut-in for 1/4 month)
**Checklist**

<table>
<thead>
<tr>
<th>Well Name/Location</th>
<th>Lehua Elem. School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Number</td>
<td>2358-02</td>
</tr>
<tr>
<td>Owner/User</td>
<td>Navy Land/Gushing Waters, Inc.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Withdrawal/Supply Permit</th>
<th>Drilling/Modification Permit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Application Received</td>
<td>27 January 1986</td>
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<tr>
<td>Receipt Acknowledged</td>
<td>27 January 1986</td>
</tr>
<tr>
<td>Docket Number</td>
<td>N/A</td>
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<tr>
<td>Filing Fee RCVD/Deposited?</td>
<td>Navy Landowner</td>
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<tr>
<td>Date Approved</td>
<td>Navy Landowner</td>
</tr>
<tr>
<td>Date of Reply</td>
<td>25 March 1986</td>
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<tr>
<td>Suspense Date: 180 days</td>
<td>28 July 1986</td>
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</tbody>
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**Remarks:**

**[ ]**
Chloride readings taken on 1/14/87 - DOWARD LOSSER

Static water level = 130' 137 ppm 160'

(Well not flowing over 1 month)

TOC = 14.02' msf

137 ppm 150'

570 ppm 200'

1700 ppm 225'
TO: Gushing Waters, Inc.

In accordance with Chapter 166 of Title 13, "Rules for the Control of Ground Water Use in the State of Hawaii", your application to recase the well near Lehua Elementary School is approved subject to the following conditions:

1. A Driller's Well Completion Report form (enclosed) shall be submitted to the Division of Water and Land Development within 60 days after completion of the work.

2. An approved flowmeter must be installed to measure water use; a record of the withdrawals must be kept and reported to the Department of Land and Natural Resources, Division of Water and Land Development, on a monthly basis.

3. Upon completion of the work, submit an "as-built" drawing of the well.

4. This Well Modification Permit is for recasing the well only and no water may be used from this well without the Permit to Withdraw Water for Beneficial Use from the Department of Land and Natural Resources.
5. The issuance of this Well Modification Permit shall in no way prejudice any future consideration by the Board of Land and Natural Resources on the issuance or non-issuance of a Permit to Withdraw Water for Beneficial Use for this well.

6. The applicant must comply with all applicable laws, rules and ordinances.

SUSUMU ONO
Chairperson of the Board

3/25/86
Date of Issuance

Enc. (Driller's Report)
cc: USGS
U.S. Navy
Honolulu BWS
SPECIFICATIONS FOR
RECASING OF WELL NO. 2358-02
PEARL CITY PENINSULA, OAHU
AGRICULTURAL OUTLEASE AREA
(LEASE NO. N6274285RP)

1. DESCRIPTION OF WORK: The work to be performed as described herein is a Government-directed reimbursable conservation improvement for Agricultural Outlease N6274285RP and includes recasing of Well No. 2358-02 and installation of a new PVC well head valve assembly as shown in Appendix B, in accordance with the schedule given in Appendix C. The lessee shall coordinate the performance of this work with the Division of Water and Land Development (DOWALD), Department of Land and Natural Resources (DLNR), State of Hawaii, and obtain all necessary permits as required. Further, the lessee shall coordinate all operations with the Activity Civil Engineer, Navy Public Works Center, telephone (808)471-0211 and the Pacific Division, Naval Facilities Engineering Command, Pearl Harbor, Hawaii, telephone (808)471-3217, prior to commencement of work.

2. MATERIALS: Materials shall meet the requirements specified below:

   a. Polyvinyl chloride (PVC) plastic pipe (6-inch diameter) shall conform to the requirements of ASTM 1785, Schedule 80. PVC plastic pipe fittings shall conform to the requirements of ASTM D 2466 or D 2467. The coupling rubber ring gasket shall consist of synthetic rubber compound which conforms to the requirements of ASTM D 1869, Rubber Rings for Asbestos Cement Pipe.

   b. All pipe and fittings shall bear the seal of approval of "nSf" trade mark of the National Sanitation Foundation Testing Laboratory, Inc., School of Public Health, University of Michigan, Ann Arbor, Michigan. Solvent cement shall be compatible with and of the kind recognized by the industry as proper for use.

3. WORK REQUIREMENTS: The work on the well shall be performed by a licensed well driller. The order of work for this project shall be as follows:

   a. Establishing a Reference Mark: A reference mark shall be established in a safe location at the job site. The existing measuring point is the top of the horizontal flange on the 12-inch steel casing (13.17 feet above mean sea level). After all work is completed, the elevation of the measuring point for the new system shall be transferred back from the established reference mark to the top of the gate-valve. This elevation point is a USGS datum standard and is necessary for determining the height of the water above mean sea level.

   b. Access to the well shall be provided for vehicles and equipment. The work area shall be cleared of all ground and overhead obstructions.
c. Removal of Existing Well Head: The existing 12-inch steel casing shall be cut to remove the valve assembly and other above-ground appurtenances leaving a casing extension of 2 feet above ground. A temporary standpipe shall be installed to prevent artesian flow of water during logging and recasing operations.

d. Logging: The well shall be logged by DOWALD to determine total depth and existing condition of the open well bore and casing. Logging data shall be used to determine depths for and setting the new PVC casing and packer. Two days advance notice of readiness to log shall be given by the lessee, or his contractor, to DOWALD. The State's point of contact for such operations is Mr. Ed Sakoda, telephone 548-7543.

e. Clearing of the Well: All obstructions shall be cleared and removed from the portion of the well to be re-cased as determined by DOWALD. Clearing of the well shall be judged by the unimpeded passage of a 12-inch diameter drilling bit or equivalent.

f. Well Recasing: The well shall be recased with 6-inch PVC, Schedule 80, plastic pipe, as generally depicted in the attached diagram and as approved by DOWALD in the field. A pneumatic rubber packer shall be installed in the open hole below the existing casing at a depth determined by DOWALD. A grout seal consisting of 1± foot of sand and 5± feet of neat cement shall be placed above the packer and allowed to set for 24 hours before grouting the remaining annular space. The remaining annular space shall be grouted through a tremie pipe placed above the grout seal and withdrawn as the grout rises in the annulus.

g. Well head valve Assembly: A 6-inch PVC gate-valve assembly shall be installed as depicted on the attached drawing. A 6-inch threaded cap with a 3/4-inch threaded plug shall be installed on top of the PVC pipe.

h. Cleanup: At the completion of the project, the lessee, or his contractor, shall remove all excess materials and debris and leave the job site in a neat and orderly condition. Any damage to the ground and/or existing structures shall be immediately repaired by the lessee or his contractor upon completion of re-casing operations.

4. COMPLETION OF WORK:

a. Recasing of the well shall be considered completed when the well is grouted, well head assembly installed, and site has been cleaned up.

b. Payment: Removal of the existing valve assembly, preparing the well site for logging and re-casing work, clearing any obstructions in the well, installing and grouting PVC casing, installing new PVC well head valve assembly, and cleanup operations shall be paid for on a lump sum basis, which price shall be full compensation for furnishing all materials,
labor, tools, equipment and miscellaneous items, and for accomplishing all work involved in furnishing and installing, modifying or repairing the components or combinations thereof as required by this recasing work. All additional materials and labor not shown or listed on the plans or called for herein which are necessary to complete the recasing of the well, shall be considered incidental to the work and no additional compensation will be allowed therefor. Payment shall be in accordance with Section IV of the Soil and Water Conservation Plan.

Attach.
PROPOSED RECASTING OF WELL 8358-02

3/4" Threaded plug
6" Threaded cap
Std hose bib
6"x6" Threaded nipple, PVC, Schd. 80

Top of gate-valve ≈ 12' msl
6" PVC gate-valve
Threaded joint

CHLORINE:
3/13/85 (24 hr avg) 91.0 mg/l
8/20/86

K(540) = 11.1 msl @ 1115 9/22/86
Top k(540) = 15.96 msl
DTH = 55½' = 4.85 ft K

GROUND ELEV. ≈ 9'

Existing 12" steel casing
New 6" PVC, Sch. 80 Casing

1' of cement grout
≈ 1' sand

Pneumatic rubber packer

6" PVC coupling to prevent flow from shipping out

Not to scale
March 20, 1986

Department of the Navy
Pacific Division, Naval Facilities
   Engineering Command (Makalapa, HI)
Pearl Harbor, [Redacted]

Attention: Mr. Tom Egeland (code 248;TE PACNAVFACENGCOM)

Gentlemen:

This is regarding Well No. 2358-02 on Navy property (Lease No. N627488RP00009) at Pearl City Peninsula, Oahu.

The Division of Water and Land Development sounded and logged the well on February 20, 1986 and offer the following comments:

1. The caliper log of the well indicates that the casing is in poor condition and should be recased. The packer for grouting the bottom of newly installed casing should be set at a depth of 60 feet (-46.83 ft., msl) measured from the top of the horizontal flange.

2. It should be noted that there is an obstruction in the casing between the depths of 10 and 14 feet (+3.17' msl and -0.33' msl, respectively) from the top of the flange.

If you have any questions, please contact Mr. Takeo Fujii at [Redacted]

Sincerely,

MANABU TAGOMORI
Manager-Chief Engineer

ES:dh
cc: Mr. Michael Watanabe,
    Gushing Waters, Inc.
    Honolulu BWS
    USGS
February 27, 1986

Mr. Michael Watanabe  
Gushing Waters, Inc.

Dear Mr. Watanabe:

This is to acknowledge receipt of your application for a Well Modification Permit to recase Well Number 2358-02 located on Navy property at Pearl City Peninsula, Oahu. My staff is presently reviewing the application and will contact you if there are any questions.

We also received your application for a Permit to Withdraw Water for Beneficial Use for the above well. However, this permit is premature pending re-casing, valving and measuring the flow of the well so we are returning it. Upon completion of the work, my staff will work with you in the re-filing of your application.

If you have any questions, please contact Mr. Takeo Fujii at [Redacted]

Sincerely,

MANABU TAGOMORI  
Manager-Chief Engineer

ES:ko  
Enc.

cc: USGS  
Tom Egeland, Navy  
Honolulu BWS
APPLICATION FOR: (check one)
☐ PERMIT TO WITHDRAW WATER FOR BENEFICIAL USE
☐ PERMIT TO SUPPLY WATER FOR BENEFICIAL USE

Instructions: Fill out, sign, and send application with pertinent attachments to Dept. of Land & Natural Resources. A non-refundable filing fee of $100 is required, excepting military, federal, state, and local government agencies.

1. NAME OF APPLICANT
   [Signature]
   Address:
   Phone: 671.054

2. REQUESTED BENEFICIAL USE OF WATER:
   ☐ Domestic ☐ Municipal ☐ Military ☐ Agricultural ☐ Industrial ☐ Other
   (specify)
   Appropriately describe nature and purpose of requested use: Irrigation for crop diversification
   Proposed commencement date of water use: 1986-

3. REQUESTED AMOUNT OF WITHDRAWAL OR SUPPLY:
   Average Annual mgd; Maximum Month mgd; Maximum Day mgd.
   Appropriately describe schedule or times of taking requested withdrawal:

4. NATURE AND TERM OF REQUESTED PERMIT:
   ☐ Temporary ☐ Permanent
   Requested period of permit: FIVE YEARS OR UNTIL TERMINATION OF LEASE

5. PROPOSED SOURCE OF WATER SUPPLY:
   ☐ Existing source ☐ Modification of existing source ☐ New source
   Briefly describe existing or proposed source and any related facilities and submit map, plot plan, and plans or drawings of source of supply:

6. ASSESSMENT OF REQUESTED WATER USE OR SUPPLY
   In a separate attachment to this application, applicant must provide a written assessment addressing the desirability of issuing the requested permit, including such considerations as the availability of water, the beneficial purpose of the proposed water use, and the impact, if any, of the proposed water use on existing permitted uses, preserved uses, and individual household uses.

   [Signature]
   Water User or Supplier
   Date: January 17, 1986

   [Signature]
   Owner of Water Source
   Date: January 17, 1986

In accordance with Department Regulation No. 9, every permit approved and issued by the Board of Land & Natural Resources shall be for a specified period of time, for a specified beneficial use, subject to suspension and revocation, and subject to the shortage and emergency powers of the Board. Consideration of applications for a permit shall include: availability of water, beneficial purpose of water use, non-impairment of the most beneficial use and development of the water resources in the designated area, and no substantial and material interference with existing uses of water.

For Official Use:

Docket No. 180 days
Board Approved Disapproved
Well No. 2358-02
**DIVISION OF WATER AND LAND DEVELOPMENT**

<table>
<thead>
<tr>
<th>FROM:</th>
<th>DATE:</th>
<th>FILE IN:</th>
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**TO:**

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<tr>
<th>INITIAL:</th>
<th>PLEASE:</th>
<th>REMARKS:</th>
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</thead>
<tbody>
<tr>
<td>M. TAGOMORI</td>
<td>See Me</td>
<td></td>
</tr>
<tr>
<td>T. Fujii</td>
<td>Take Action By</td>
<td>Route to Your Branch</td>
</tr>
<tr>
<td>H. Sakai</td>
<td>Review &amp; Comment</td>
<td></td>
</tr>
<tr>
<td>H. Morimatsu</td>
<td>Draft Reply By</td>
<td>Acknowledge Receipt</td>
</tr>
<tr>
<td>A. Ching</td>
<td>Xerox copies</td>
<td></td>
</tr>
<tr>
<td>G. Morimoto</td>
<td>File</td>
<td></td>
</tr>
<tr>
<td>G. Matsumoto</td>
<td>For Information</td>
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<tr>
<td>P. Matsuo</td>
<td></td>
<td></td>
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<tr>
<td>L. Asari</td>
<td></td>
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<tr>
<td>D. Lum</td>
<td></td>
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<tr>
<td>S. Samuel</td>
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<th>INITIAL:</th>
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<th>REMARKS:</th>
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<tr>
<td>J. Sato</td>
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<td>D. Hamada</td>
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<td>L. Nanbu</td>
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<td>J. Siarot</td>
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<tr>
<td>E. Yonamine</td>
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<tr>
<td>K. Oshiro</td>
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</tbody>
</table>

**DATE:** 1/7

**FILE IN:** ___________
APPLICATION FOR (check one)

☐ WELL DRILLING PERMIT
☐ WELL MODIFICATION PERMIT

Instructions: Send completed application and attachments to Department of Land and Natural Resources.

Reference: Regulation 9, Dept. of Land & Natural Resources.

Is the well located in a Designated Ground Water Control Area? ☐ Yes  ☐ No

If "yes", application must be accompanied by a Water Use and/or Water Supply Permit and a non-refundable filing fee of $100 payable to the Department of Land & Natural Resources. However, if application is for minor modification of well, filing fee may be waived. If "no", no filing fee is required. Filing fee is waived for federal, state, and county government agencies.

1. WELL LOCATION: Island  ☐ Tax Map Key __________________. Attach a plot plan showing well location referenced to established property boundaries.

2. WATER USER  ☐ Address __________________ Telephone __________________ Zip Code __________________

3. PROPOSED DRILLING COMPANY: ______________________ ________________

4. PROPOSED WORK:  ☐ Drill new well  ☐ Deepen  ☐ Redrill  ☐ Alter  ☐ Seal  
☐ Abandon  ☐ Install new pump  ☐ Replace pump  ☐ Modify pump

Fill in the diagram and briefly describe the proposed work (use back of form if necessary):

PROPOSED SECTION OF WELL

<table>
<thead>
<tr>
<th>Elevation at top of casing</th>
<th>ft., msl.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement Grout ft.</td>
<td></td>
</tr>
<tr>
<td>Hole Dia. in.</td>
<td></td>
</tr>
<tr>
<td>Total Depth ft.</td>
<td></td>
</tr>
<tr>
<td>Rock Packing ft.</td>
<td></td>
</tr>
</tbody>
</table>

Ground Elev. ft., msl*

Solid casing:
- Material
- Length ft.
- Diameter in.
- Wall thickness in.

Casing: ☐ Perforated  ☐ Screen
- Material
- Length ft.
- Diameter in.
- Wall thickness in.
- Openings sq.in./L.F

Open Hole: Length ft.
- Diameter in.

*Approximate elev. at filing. Final elev. (msl) by a surveyor licensed by the State must be submitted at start of construction.

5. PROPOSED USE:  ☐ Municipal  ☐ Military  ☐ Agriculture  ☐ Domestic  ☐ Disposal  ☐ Industrial  ☐ Other (specify) ________________

6. PROPOSED AMOUNT OF WITHDRAWAL: Check most appropriate box and fill in amount.
☐ Daily __________ gallons  ☐ Monthly __________ gallons  ☐ Yearly __________ gallons

7. PROPOSED PUMP OR FLOW CAPACITY: __________ gallons per minute

Signature: ___________________ Water User
Date: ______________________

Signature: ___________________ Landowner of Well Site
Date: ______________________

For Official Use:

State Well No. 2358-02
DLNR Permit No. __________________
DLNR Application No. __________________
0906  Run TOTAL DEPTH  Coast 52
      'mt from L.A.S (bottom of hole)  Stop 64
      DMI = \( m \) ft. (Depth to Water)

1000  Run CALIPER (\#1x2)  \( = \) 64
      Log uphole from 65 ft

End logging 1050 hrs.

Lehua, Pearl City (2958-02)
Rep top of Flange  Top of ground Ref.

1100  Run CALIPER Log:
      Log uphole from 780' 80'
      Obstruction at 85 ft.
Gushing Waters Inc.

Gentlemen:

We have been informed by the Navy that you are the new lessee of their property near Lehua Elementary School (TMK: 9-7-18:3 and 9-7-28:2), Oahu, and that you will be coordinating the recasing of Well 2358-02 with our Division. The well is a U.S. Geological Survey network well and the proper recasing of the well will ensure that we will be able to continue to collect important hydrologic data from it.

Prior to recasing and using the well, a Well Modification Permit and a Water Withdrawal and Use Permit will be required by our Department. We have enclosed the application forms for your convenience.

We look forward to working with you on this project. If you have any questions, please contact Ed Sakoda at [Redacted]

Sincerely,

MANABU TAGOMORI
Manager-Chief Engineer

ES:ko
cc: Navy, Real Estate Division
    Honolulu BWS
    U.S.G.S.
DIVISION OF WATER AND LAND DEVELOPMENT

FROM: John Smith
DATE: 12/30/83
FILE IN: 

TO: INITIAL:

1 M. TAGOMORI
2 T. Fujii
3 H. Sakai
4 H. Morimatsu
5 A. Ching
6 G. Morimoto
7 G. Matsumoto
8 P. Matsuo
9 L. Asari
10 D. Lum
11 S. Samuels
12 J. Sato
13 D. Hamada
14 L. Nanbu
15 J. Siarot
16 E. Yonamine
17 K. Oshiro

PLEASE:

See Me
Take Action By
Route to Your Branch
Review & Comment
Draft Reply By
Acknowledge Receipt
Xerox copies
File

FOR INFORMATION

REMARKS: 12/30/83

Needed - Need Modification.
Draft & Date the Subject.
Am I to send from "copy of"
then? *
Division of Water and Land Development
Attn: Mr. Manabu Tagomori
Manager-Chief Engineer
Department of Land and Natural Resources
State of Hawaii

Gentlemen:

Reference is made to your letter of April 5, 1982, regarding Well No. 2358-48 on Navy property at Pearl City Peninsula. It was requested that your office be notified if there is a change in the lessee of the Navy lands because the well is located in the Pearl Harbor Ground Water Control Area.

This letter is to advise that Gushing Waters Inc., 8200, 8200, is now the lessee of the Navy property. The lessee does not plan to deviate substantially from past use of the property.

A copy of the lease is attached for your information. Please note that the lessee will be required to recase one of the wells in the area. The lessee will be coordinating this work with your office before any work is actually done.

Sincerely,

[Signature]

J. M. Kilian
Director, Real Estate Division

Encl:
(1) Copy, Lease N6274286RP00009

Copy to: (w/o encl)
Board of Water Supply
LEASE BETWEEN GUSHING WATERS INC.

(HEREINAFTER CALLED "LESSEE") AND THE UNITED STATES OF AMERICA (HEREINAFTER CALLED THE "GOVERNMENT"), CONSISTING OF THIS PART I, THE GENERAL PROVISIONS OF PART II OF GENERAL PURPOSE LEASE (NAVFAC 11011/24A), ATTACHED HERETO AND MADE A PART HEREOF, AND SUCH SPECIAL PROVISIONS AS ARE INCORPORATED BY ARTICLE 8 OF THIS PART I.

1. LEASED PROPERTY: UNDER THE TERMS AND CONDITIONS OF THIS LEASE, THE GOVERNMENT HEREBY LEASES TO THE LESSEE THAT PORTION OF THE NAVY PUBLIC WORKS CENTER, PEARL HARBOR (HEREINAFTER CALLED THE "STATION") DESCRIBED, WHICH PORTION IS HEREAFTER CALLED THE "LEASED PROPERTY". PARCELS NO. 1 AND NO. 3, COMPRISED OF APPROXIMATELY 19.5 AND 50.2 ACRES, RESPECTIVELY, IN THE PEARL HARBOR SECURITY AREA, AS DELINEATED ON NAVY REAL ESTATE DRAWING NO. RE-81-3,

AS DELINEATED ON THE MAP OF THE STATION, MARKED "EXHIBIT A", ATTACHED HERETO AND MADE PART HEREOF;

TOGETHER WITH ALL IMPROVEMENTS THEREON AND APPURTENANCES THEREUNTO BELONGING.

TOGETHER WITH THOSE ITEMS OF PERSONAL PROPERTY IDENTIFIED ON THE LIST, MARKED "EXHIBIT B", ATTACHED HERETO AND MADE PART HEREOF.

TOGETHER WITH RIGHTS OF INGRESS AND EGRESS AND THE RIGHT, IN COMMON WITH OTHERS, TO THE USE OF ALL SUPPORTING FACILITIES, ROADWAYS AND/OR RAILROAD TRACKS SERVING THE LEASED PROPERTY TO THE EXTENT NECESSARY TO ENABLE LESSEE TO USE SAME FOR THE PURPOSES OF THIS LEASE.

ATTACHED HERETO AND MADE PART HEREOF IS A CONDITION REPORT, MARKED "EXHIBIT C", SIGNED BY REPRESENTATIVES OF THE GOVERNMENT AND LESSEE, WHICH SETS FORTH THE CONDITION OF EACH ITEM OF THE LEASED PROPERTY AS DETERMINED FROM THEIR JOINT INSPECTION THEREOF.

2. TERM: THE TERM OF THIS LEASE SHALL BEGIN ON 16 December 1985 AND END ON 15 December 1990, UNLESS SOONER TERMINATED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 8 d OF PART II HEREOF. OR SPECIAL PROVISION 8d HEREOF.

LESSEE MAY EXTEND THE TERM OF THIS LEASE FOR ADDITIONAL PERIODS OF ONE (1) YEAR EACH BY DELIVERY TO THE LOCAL GOVERNMENT REPRESENTATIVE OF WRITTEN NOTICE OF ITS INTENTION TO EXTEND NO LATER THAN NINETY (90) DAYS PRIOR TO THE EXPIRATION OF THE THEN CURRENT TERM; PROVIDED, NO EXTENSION SHALL BE GRANTED WHICH EXTENDS THE TOTAL TERM IN EXCESS OF FIVE (5) YEARS.

DURING THE FOURTH AND FIFTH YEARS OF THIS LEASE,

3. RENT: LESSEE SHALL PAY THE GOVERNMENT AN ANNUAL RENTAL OF $24,000.00, PAYABLE QUARTERLY IN ADVANCE AT THE RATE OF $6,000.00 PER QUARTER IN CONFORMITY WITH THE PROVISIONS OF ARTICLE Y OF PART II HEREOF.

DURING THE FIRST, SECOND AND THIRD YEARS OF THIS LEASE, EXPENDITURES FOR LONG TERM MAINTENANCE: THE "MAXIMUM AMOUNT TO BE EXPENDED" FOR ITEMS OF LONG TERM MAINTENANCE FOR WHICH LESSEE ASSUMES AN OBLIGATION IN ARTICLE B OF PART II HEREOF IS $24,000.00 PER ANNUM AND SHALL ACCRUE ON THE FIRST DAY OF EACH MONTH OF THE TERM OF THIS LEASE AT THE RATE OF $2,000.00 PER MONTH.

5. USE: THE SOLE PURPOSE FOR WHICH LESSEE SHALL USE THE LEASED PROPERTY, IN THE ABSENCE OF PRIOR WRITTEN APPROVAL OF THE GOVERNMENT FOR ANY OTHER USE, IS THE FOLLOWING: FOR AGRICULTURAL PURPOSES, WITH PARCEL NO. 1 DEVOTED TO TRUCK AND ORCHARD TYPE FARMING AND THE WETLAND AREAS OF PARCEL NO. 3 DEVOTED TO GROWING PADDY-TYPE CROPS. ALSO SEE SPECIAL PROVISION B HEREOF.

6. INSURANCE: THE INITIAL MINIMUM AMOUNTS AND TYPES OF INSURANCE WHICH LESSEE SHALL PRO Cure AND MAINTAIN ON THE LEASED PROPERTY IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE C OF PART II HEREOF ARE THE FOLLOWING:

<table>
<thead>
<tr>
<th>Type</th>
<th>NONE</th>
<th>NONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BODILY INJURY</td>
<td>$50,000.00 per person</td>
<td>$100,000.00 per accident</td>
</tr>
<tr>
<td>PROPERTY DAMAGE</td>
<td>$50,000.00 per accident</td>
<td></td>
</tr>
<tr>
<td>LIABILITY</td>
<td>$</td>
<td></td>
</tr>
</tbody>
</table>

7. PERFORMANCE BOND OR SECURITY: TO SECURE THE FAITHFUL PERFORMANCE OF ITS OBLIGATIONS HEREOF, LESSEE SHALL PROVIDE THE GOVERNMENT WITH EITHER: (a) COLLATERAL SECURITY IN THE FORM OF CASH OR NEGOTIABLE GOVERNMENT BONDS, OR (b) A PERFORMANCE BOND ISSUED BY A CORPORATE SURETY AND SATISFACTORY TO THE GOVERNMENT IN ALL RESPECTS, IN THE AMOUNT OF $20,000.00. IF THE GOVERNMENT SHAll AT ANY TIME DETERMINE THAT AN INCREASE IN THE AMOUNT OF SECURITY IS NECESSARY TO MAKE SAME COMMENSURATE WITH LESSEE'S OBLIGATIONS HEREOF, LESSEE SHALL FURNISH SUCH ADDITIONAL SECURITY PROMPTLY UPON REQUEST. THIS SECURITY IS TO COVER ALL PERFORMANCE REQUIREMENTS SET FORTH HEREOF, INCLUDING BUT NOT LIMITED TO ARTICLES 3, 4, AND 8a OF PART I AND ARTICLES F, H, I AND J OF PART II HEREOF.
8. SPECIAL PROVISIONS: THERE ARE HEREBY INCORPORATED INTO THIS LEASE, BY ATTACHMENT HERETO, THE FOLLOWING SPECIFIED ADDITIONAL PROVISIONS WHICH SHALL BE CONTROLLING IN THE EVENT OF ANY CONFLICT WITH THE GENERAL PROVISIONS OF PART II OF THIS LEASE:

SEE ATTACHED SPECIAL PROVISIONS 8a to 8e.

9. EXECUTION BY LESSEE

NAME OF LESSEE: GUSHING WATERS INC.

[Signature]

President

[Date]

[Signature]

Witness

[Title]

10. FOR CORPORATE LESSEE, CERTIFICATION BY SECRETARY OR ASSISTANT SECRETARY OF THE CORPORATION

I CERTIFY THAT THE PERSON WHO SIGNED THIS LEASE ON BEHALF OF LESSEE WAS THEN THE OFFICER INDICATED AND THIS AGREEMENT WAS DULY SIGNED FOR AND ON BEHALF OF SAID CORPORATION BY AUTHORITY OF ITS GOVERNING BODY AND IS WITHIN THE SCOPE OF ITS CORPORATE POWERS.

[Signature]

Secretary/Treasurer

[Title]

11. EXECUTION FOR AND ON BEHALF OF THE GOVERNMENT

THE UNITED STATES OF AMERICA

[Signature]

Contracting Officer

[Date]

Witness

12. NAVY IDENTIFICATION DATA

NAME AND ADDRESS OF NAVAL STATION

Navy Public Works Center

LOCAL GOVERNMENT REPRESENTATIVE/TITLE AND ADDRESS

Commander, Pacific Division

Naval Facilities Engineering Command

Pearl Harbor, [Redacted]

ADDRESS OF LESSEE

[Redacted]

[Redacted]
8. SPECIAL PROVISIONS

a. During the term of this lease, the Lessee shall use the Premises strictly in accordance with the Soil and Water Conservation Plan (the Plan) marked Exhibit "B", attached hereto and made a part hereof, and undertake the conservation measures specified in Part III of the Plan. The following conservation measures specified in Part III of the Plan are hereby designated as items of "Long Term Maintenance" under Article B of Part II (General Provisions) hereof:

<table>
<thead>
<tr>
<th>Item</th>
<th>Plan Reference</th>
<th>Year of Lease for Accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage</td>
<td>III.C.4</td>
<td>1st</td>
</tr>
<tr>
<td>New Fence Construction (2 phases)</td>
<td>III.C.10</td>
<td>2nd and 3rd</td>
</tr>
<tr>
<td>Well Recasing</td>
<td>III.C.11</td>
<td>1st</td>
</tr>
<tr>
<td>Installation of Irrigation Line</td>
<td>III.C.12</td>
<td>1st</td>
</tr>
</tbody>
</table>

Accordingly, Lessee shall receive a credit against the "Maximum Amount to be Expended" specified in Article 4 of this Part I for the "Actual Costs" incurred in satisfactorily completing said items. All other conservation measures specified in Part III of the Plan shall be accomplished at Lessee's expense.

b. The Government may terminate this lease for breach in accordance with Article F of Part II (General Provisions) hereof if the conservation measures specified in Part III of the Plan are not satisfactorily completed within the time periods set forth in Appendix C of the Plan.

c. The Premises shall not be used for any of the following agricultural activities: (1) raising of poultry for personal and/or commercial purposes; (2) raising or training of gamecocks; or (3) raising of hogs or pigs.

d. Article G of Part II herein is hereby deleted in its entirety and replaced as follows:

Lessee shall have the right to terminate this lease on any annual anniversary date hereof by providing the Local Government Representative with written notice of such intent at least ninety (90) days in advance of the desired annual anniversary date of termination.

e. Notwithstanding the uses permitted under this lease, Lessee shall at no time during the term of this lease use the Premises or its interest therein in any manner which shall constitute direct participation in any subsidy program of the Federal Government related to either the use or abstention from use of the Premises. This restriction does not apply at the present time to the agricultural uses permitted herein but shall be automatically activated in the event any subsidy program of the Federal Government should be made applicable in the future to any agricultural uses authorized under this lease.
A. GENERAL MAINTENANCE OBLIGATION

Lessee, at its own expense, shall so protect, preserve, maintain and repair the Leased Property, that the same will at all times be kept in at least as good condition as when received hereunder, subject, however, to ordinary wear and tear and loss or damage for which Lessee is not liable hereunder.

B. LONG TERM MAINTENANCE OBLIGATION

(1) In addition to its general maintenance obligation under Article A, above, Lessee shall, at its own expense, perform such items of "Long Term Maintenance" (as hereinafter defined) as may from time to time be approved or directed by the Local Government Representative; Provided, the Lessee shall receive credit against the Maximum Amount to be Expended specified in Article 4 of Part I hereof for the "Actual Costs" incurred in the performance of said items upon the satisfactory completion of such performance; Provided, further, Lessee shall at no time be obligated hereunder to expend for Long Term Maintenance any amount in excess of the difference between:

(a) the Maximum Amount to be Expended as accrued to such time, and

(b) the total credits allowed against the Maximum Amount to be Expended up to that time.

Such difference is hereinafter called the "Current Obligated Maintenance Amount."

"Long Term Maintenance," as used herein, shall mean any item of protection, preservation, maintenance and repair of the Leased Property, or any part thereof, including property in which Lessee's right of use shall be in common with others, the recurrence of which is not anticipated within the twelve (12) month period following its completion. It shall in no event, however, include any item of protection, maintenance or repair which is solely incidental to Lessee's use of the property hereunder and which Lessee is obligated to perform by Article A above, or any other provision of this lease, such as, but not limited to, guard service, janitorial service, replacement of expendable items, garbage and trash collection or disposal, or clean-up work.

"Actual Costs" as used herein, shall mean the sum of:

(a) direct labor costs, plus 10% thereof for incidental expenses for general supervision, administration and overhead, and

(b) direct material costs, when Lessee has incurred such costs directly in the performance of any item of Long Term Maintenance approved or directed by the Local Government representative, When Lessee contracts with third parties for performance of any item of Long Term Maintenance, "Actual Costs," as used herein, shall mean the amount of such contracts as have been approved in advance by the Local Government Representative.

(2) Pending completion of performance and final determination of the actual costs of any item of Long Term Maintenance approved or directed as aforesaid, there shall be tentatively credited against the Maximum Amount to be Expended at the end of each month of the lease term an estimate of the actual costs incurred in the performance thereof, in order to facilitate administration of this lease and enable the Local Government Representative to properly direct the performance of Long Term Maintenance under this Article.

(3) If Lessee shall undertake the performance of any item of Long Term Maintenance at any time when the Current Obligated Maintenance Amount is insufficient to allow credit for the actual costs thereof, such actual costs shall constitute a credit against the Maximum Amount to be Expended as that amount may subsequently accrue pursuant to the provisions of Article 4 of Part I hereof; Provided, however, that in the event of the expiration of or termination of this lease prior to the allowance of such credit in whole or in part, Lessee shall make no claim against the Government on account of any difference between actual costs incurred and the Current Obligated Maintenance Amount as of the date of such expiration or termination of the lease, and such difference shall be at the sole cost and expense of Lessee.

(4) At the end of each year of the term the Current Obligated Maintenance Amount shall be carried forward to the succeeding year; Provided, however, that in any time during which the Local Government Representative shall so direct, Lessee shall pay the Current Obligated Maintenance Amount, in whole or in part, as cash rent in the manner prescribed by Article Y of this Part I hereof.

(5) Within thirty (30) days from the expiration or prior termination of this lease, Lessee shall pay to the Government, in the manner prescribed by Article Y of this Part II, the Current Obligated Maintenance Amount as finally determined by the Local Government Representative.

(6) Lessee shall keep adequate records and books of account showing the actual cost to it of all items of labor, material, equipment, supplies, services, and other items of cost of any nature constituting an item of Actual Costs incurred by it directly in the performance of any item of Long Term Maintenance. The Lessee shall provide the Government with access to such records and books of account and proper facilities for inspection thereof at all reasonable times. All information obtained from said records and books of account shall be deemed confidential.

C. RISK OF LOSS—INSURANCE

(1) Lessee shall bear all risk of loss of or damage to the Leased Property arising from any cause whatsoever, with or without fault by Lessee; Provided, however, that Lessee’s liability for any loss or damage resulting from risks expressly required to be insured against under the lease shall not exceed the amount of insurance so required or the amount actually procured and maintained, whichever shall be the greater; Provided, further, that maintenance of the required insurance shall effect no limitation on Lessee’s liability with respect to any loss or damage resulting from the willful misconduct, lack of good faith, or negligence of Lessee or any of its officers, agents, servants, employees, subtenants, licensees or invitees.

(2) Lessee shall procure and maintain, at its own expense, insurance on the Leased Property in such initial amounts and types as may exceed, but shall not be less than, the minimum amounts and types specified in Article 6 of Part I hereof. However, Lessee shall provide, maintain, change or discontinue such insurance as the Local Government Representative may from time to time require and direct; Provided, Lessee’s liability for loss of or damage to the Leased Property is modified accordingly; Provided, further, that if any insurance requirement is so changed an equitable adjustment shall be made in the amount of the Rent or Maximum Amount to be Expended specified in Article 3 or 4 of Part I hereof so as to reflect any resultant savings or increased cost to Lessee.

(3) All insurance which this lease requires Lessee to carry on the Leased Property shall be in such form, for such amounts, for such periods of time and with such insurers as...
the Government may from time to time require or approve. Each policy of insurance, shall contain a provision for thirty (30) days written notice to the Local Government Representative prior to the making of any material change in or the cancellation of the policy. Lessee shall deliver promptly to the Local Government Representative a certificate of insurance or a certified copy of each policy of insurance required by this lease and shall also deliver to him, no later than thirty (30) days prior to the expiration of any such policy, a certificate of insurance or a certified copy of each renewal policy covering the same risks. All insurance required or carried by Lessee on any of the Leased Property shall be for the protection of the Government and Lessee against their respective risks and liabilities in connection with the Leased Property. Each policy of insurance shall name both Lessee and the United States of America (Department of the Navy) as the insured, and each policy of insurance against loss of or damage to the Leased Property shall contain a loss payable clause reading as follows:

"Loss, if any, under this policy shall be adjusted with [name of lessee] and the proceeds, at the election of the Government, shall be payable to [name of lessee]; any proceeds not paid to [name of lessee] shall be payable to the Treasurer of the United States."

(4) In the event that any item or part of the Leased Property shall require repair, rebuilding or replacement resulting from loss or damage, the risk of which is assumed by Lessee under paragraph (1) of this Article, Lessee shall promptly give notice thereof to the Local Government Representative and, to the extent of its liability as provided in paragraph (1) thereof, shall, upon demand, either compensate the Government for such loss or damage, or rebuild, replace or repair the item or items of the Leased Property so lost or damaged, as the Government may elect. In the event that the Government shall direct Lessee to effect such repair, rebuilding or replacement which it is required to effect pursuant to this paragraph the Government shall direct the payment to Lessee of so much of the proceeds of any insurance carried by Lessee and made available to the Government on account of loss of or damage to any item or part of the Leased Property as may be necessary to enable Lessee to effect such repair, rebuilding or replacement. In the event the Government shall elect not to require Lessee to repair, rebuild or replace any item or part of the Leased Property lost or damaged, Lessee shall promptly pay to the Government out of any insurance proceeds collected by Lessee such portion thereof as may be allocable to loss of or damage to the Leased Property. When compliance with a Government request to effect any repair, rebuilding or replacement of any lost or damaged item or part of the Leased Property would involve the incurring of costs in excess of Lessee's liability for such loss or damage under this Article, Lessee shall be under no obligation to effect same until after a satisfactory agreement has been reached between the Government and Lessee with regard to Government reimbursement of such excess of costs to Lessee.

D. REPRESENTATIONS

Lessee has examined, knows and accepts the condition and state of repair of the Leased Property and the Station of which it forms a part, and acknowledges that the Government has made no representation concerning such condition and state of repair, nor any agreement or promise to alter, improve, adapt, repair or keep in repair the same, or any item thereof, which has not been fully set forth in this lease which contains all the agreements made and entered into between the Lessee and the Government.

E. SUBJECTION TO EXISTING AND FUTURE EASEMENTS AND RIGHTS OF WAY

This lease is subject to all outstanding easements and rights of way for location of any type of facility over, across, in and upon the Leased Property, or any portion thereof, and to the right of the Government to grant such additional easements and rights of way over, across, in and upon the Leased Property as it shall determine to be in the public interest; Provided, that any such additional easement or right of way shall be conditioned on the assumption by the Grantee thereof of liability to Lessee for such damages as Lessee shall suffer for property destroyed or property rendered unusable on account of Grantee's exercise of its rights thereunder. There is hereby reserved to the holders of such easements and rights of way as are presently outstanding or which may hereafter be granted, to any workers officially engaged in the construction, installation, maintenance, operation, repair, or replacement of facilities located thereon, and to any Federal, State or local official engaged in the official inspection thereof, such reasonable rights of ingress and egress over the Leased Property as shall be necessary for the performance of their duties with regard to such facilities.

F. TERMINATION BY GOVERNMENT

The Government shall have the right to terminate this lease, at any time, without prior notice, and regardless of any lack of breach by Lessee of any of the terms and conditions of this lease. In the event of termination for any reason not involving a breach by Lessee of the terms and conditions of the lease the Government shall make an equitable adjustment of any advance rentals paid by Lessee hereunder.

In the event that the Government shall elect to terminate this lease on account of the breach by Lessee of any of the terms and conditions hereof no adjustment in advance rentals paid by Lessee shall be made, and the Government shall be entitled to recover and Lessee shall pay to the Government:

(1) The costs incurred in resuming possession of the Leased Property.

(2) The costs incurred in performing any obligation on the part of Lessee to be performed hereunder.

(3) An amount equal to the aggregate of all rents, Long Term Maintenance Obligation and charges assumed hereunder and not theretofore paid or satisfied, less the net rentals, if any, collected by the Government on the reletting of the Leased Property, which amounts shall be due and payable at the time such rents, obligations and charges would have accrued or become due and payable under this lease.

G. TERMINATION BY LESSEE

Lessee shall have the right to terminate this lease upon thirty (30) days written notice to the Local Government Representative in the event of damage to or destruction of all of the improvements on the Leased Property or such a substantial portion thereof as to render the Leased Property incapable of use for the purposes for which it is leased hereunder; Provided, (1) the Local Government Representative either has not authorized or directed the repair, rebuilding or replacement of the improvements or has made no provision for payment for such repair, rebuilding or replacement by application of insurance proceeds or otherwise, and (2) that such damage or destruction was not occasioned by the fault or negligence of Lessee or any of its officers, agents, servants, employees, subtenants, licensees or invitees, or by any failure or refusal on the part of Lessee to fully perform its obligations under this lease.
H. SURRENDER
Upon the expiration of this lease or its prior termination, Lessee shall quietly and peacefully remove itself and its property from the Leased Property and surrender the possession thereof to the Government; Provided, in the event the Government shall terminate this lease upon less than thirty (30) days notice, Lessee shall be allowed a reasonable period of time, as determined by the Local Government Representative, but in no event to exceed thirty (30) days from receipt of notice of termination, in which to remove all of its property from and terminate its operations on the Leased Property. During such period prior to surrender, all obligations assumed by Lessee under this lease shall remain in full force and effect; Provided, however, that if the Local Government Representative shall, in his sole discretion, determine that such action is equitable under the circumstances, he may suspend, in whole or in part, any further accruals of Rent or Maximum Amount to be Expended between the date of termination of the lease and the date of final surrender of the Leased Property.

I. RESTORATION OF LEASED PROPERTY
Before the expiration or prior termination of this lease, Lessee shall restore the Leased Property and each item thereof to the condition in which it was received, as set forth in the Condition Report incorporated by Article I of Part I hereof, or to such improved condition as may have resulted from any improvement made therein by the Government or by Lessee during the lease term, subject however, to ordinary wear and tear and loss or damage for which Lessee is not liable hereunder; Provided, in the event the Government shall terminate this lease upon less than thirty (30) days notice Lessee shall have thirty (30) days from receipt of notice of termination to accomplish such restoration.

J. INSTALLATIONS, ALTERATIONS AND REMOVALS
During the term of this lease, or any extension thereof, Lessee shall have the right, at its own expense, to install such of its own machinery and equipment, to make such minor improvements and additions and to attach such removable fixtures in or upon the Leased Property as may be necessary for its use of the Leased Property pursuant to this lease, and to remove same at any time prior to the expiration or termination of this lease or any extension thereof; Provided, that in the event of termination by the Government upon less than thirty (30) days notice Lessee may remove such items within thirty (30) days from the receipt of notice of termination. All property not so removed shall be deemed abandoned by Lessee and may be used or disposed of by the Government in any manner whatsoever without any liability to account to Lessee therefor, but such abandonment shall in no way reduce any obligation of Lessee for restoration under Article I of this Part II.

It is expressly agreed and understood that Lessee will make no substantial alterations, additions or betterments to or installations upon the Leased Property without the prior written approval of the Local Government Representative, and then only subject to the terms and conditions of such approval which may include an obligation of removal and restoration upon the expiration or termination of this Lease. Except as provided as said terms and conditions may expressly provide otherwise, all such alterations, additions, betterments and installations made by Lessee shall become the property of the Government when annexed to the Leased Property or any part thereof.

K. INDEMNIFICATION BY LESSEE—GOVERNMENT NON-LIABILITY
Lessee covenants that it will indemnify and save and hold harmless the Government, its officers, agents and employees for and from any and all liability or claims for loss of or damage to any property owned by or in the custody of Lessee, its officers, agents, servants, employees, subtenants, licensees, or invitees, or for the death of or injury to any of the same which may arise out of or be attributable to the condition, state of repair or Lessee's use and occupancy of the Leased Property, or the furnishing of any utilities or services, or any interruption therein or failure thereof, whether or not the same shall be occasioned by the negligence or lack of diligence of Lessee, its officers, agents, servants or employees.

L. UTILITIES AND SERVICES
In the event that the Government shall furnish Lessee with any utilities and services maintained by the Government which Lessee may require in connection with its use of the Leased Property, Lessee shall pay the Government the charges therefor in addition to the cash rent required under this lease. Such charges and the method of payment thereof shall be determined by the appropriate supplier of such service, in accordance with applicable laws and regulations, on such basis as the appropriate supplier of such service may establish, which may include a requirement for the installation of adequate connecting and metering equipment at the sole cost and expense of Lessee. It is expressly agreed and understood that the Government in no way warrants the continued maintenance or adequacy of any utilities or services furnished by it to Lessee.

M. LIENS
Lessee shall promptly discharge or cause to be discharged any valid lien, right in rem, claim or demand of any kind, except one in favor of the Government, which at any time may arise or exist with respect to the Leased Property or materials or equipment furnished therefor, or any part thereof, and if the same shall not be promptly discharged by Lessee, the Government may discharge, or cause to be discharged, the same at the expense of Lessee.

N. ACCESS
The Government shall have access to the Leased Property at all reasonable times for any purposes not inconsistent with the quiet use and enjoyment thereof by Lessee, including, but not limited to, the purpose of inspection.

O. STATE AND LOCAL TAXES
In the event that as a result of any future Act of Congress, subjecting Government-owned property to taxation, any taxes, assessments or similar charges are imposed by State or local authorities upon the Leased Property (other than upon Lessee's possessory interest therein), Lessee shall pay the same when due and payable and this lease shall be renegotiated so as to accomplish an equitable reduction in the amount of the Rent or Maximum Amount to be Expended specified in Article 3 or 4 of Part I hereof, which reduction shall in no event exceed the amount of such taxes, assessments, or similar charges; Provided, in event the parties hereto are unable to agree within ninety (90) days from the date of the imposition of such taxes, assessments, or similar charges, upon a rental which in the opinion of the Local Government Representative constitutes a reasonable return to the Government on the Leased Property, the Local Government Representative shall have the right to determine the amount of the rental, which determination shall be binding on Lessee, subject to appeal as a dispute in accordance with the provisions of Article P of this Part II.

P. DISPUTES
(a) Except as otherwise provided in this lease, any dispute concerning a Question of fact arising under this lease

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which is not disposed of by agreement shall be decided by the Commander, Naval Facilities Engineering Command, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Lessee. The decision of the Commander, Naval Facilities Engineering Command shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Lessee mails or otherwise furnishes to the Commander, Naval Facilities Engineering Command a written appeal addressed to the Secretary of the Navy. The decision of the Secretary or his duly authorized representative for the determination of such appeals shall be final and conclusive. This provision shall not be pleaded in any suit involving a question of fact arising under this lease as limiting judicial review of any such decision to cases where fraud by such official or his representative or board is alleged: Provided, however, that any such decision shall be final and conclusive unless the same is fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith or is not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Lessee shall be afforded an opportunity to be heard and to offer evidence in support of his appeal. Pending final decision of a dispute hereunder, the Lessee shall proceed diligently with the performance of the lease and in accordance with the decision of the Commander, Naval Facilities Engineering Command.

Q. COVENANT AGAINST CONTINGENT FEES

Lessee warrants that no person or agency has been employed or retained to solicit or secure this lease upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial agencies maintained by Lessee for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this lease without liability or in its discretion to require Lessee to pay, in addition to the rental or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

R. OFFICIALS NOT TO BENEFIT

No Member of or Delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this lease, or to any benefit to arise therefrom, but this provision shall not be construed to extend to this lease if made with a corporation for its general benefit.

S. FAILURE OF GOVERNMENT TO INSIST ON COMPLIANCE

The failure of the Government to insist, in any one or more instances, upon performance of any of the terms, covenants or conditions of this lease shall not be construed as a waiver or relinquishment of the Government's right to the future performance of any such terms, covenants or conditions and Lessee's obligations in respect to such future performance shall continue in full force and effect.

T. ASSIGNMENT OR SUBLetting

Lessee shall not transfer or assign this lease or any interest therein nor sublet or otherwise make available to any third party or parties any portion of the Leased Property or rights therein without the prior written consent of the Government. Under any assignment made, with or without consent, the assignee shall be deemed to have assumed all of the obligations of Lessee hereunder, but no assignment shall relieve the assignor of any of Lessee's obligations hereunder except for an extension of the lease term beginning after such assignment, and then only if the Government shall have consented thereto.

U. LABOR PROVISION

(1) Equal Opportunity

During the term of this lease the Lessee agrees as follows:

(a) The Lessee will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Lessee will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; selection for training, including apprenticeship. The Lessee agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Government setting forth the provisions of this nondiscrimination clause.

(b) The Lessee will, in all solicitations or advertisements for employees placed by or on behalf of the Lessee, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) The Lessee will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice to be provided by the Government, advising the labor union or worker's representative of the Lessee's commitments under this Equal Opportunity clause and that all copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Lessee will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended by Executive Order 11375 of October 13, 1967, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Lessee will furnish all information and reports required by Executive Order 11246 of September 24, 1965, as amended by Executive Order 11375 of October 13, 1967, and by the rules, regulations, and orders of the Secretary of Labor or pursuant thereto, and will permit access to his books, records, and accounts by the Government and the Secretary of Labor for purposes of investigating to ascertain compliance with such rules, regulations and orders.

(f) In the event of the Lessee's noncompliance with the Equal Opportunity clause of this lease or with any of said rules, regulations, or orders, this lease may be cancelled, terminated or suspended in whole or in part and the lessee may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, as amended by Executive Order 11375 of October 13, 1967, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, as amended by Executive Order 11375 of October 13, 1967, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Lessee will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, as amended by Executive Order 11375 of October 13, 1967, so that such
provisions will be binding upon each sublessee or vendor. The lessee will take such action with respect to any sublessee or purchase order as the Government may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the lessee becomes involved in, or is threatened with, litigation with sublessee or vendor as a result of such direction by the Government, the lessee may request the United States to enter into such litigation to protect the interests of the United States.

(2) Convict Labor
In connection with the performance of work required by this lease, Lessee agrees not to employ any person undergoing a sentence of imprisonment at hard labor.

(3) Contract Work Hours Standards Act (40 U.S.C. 327-330)
This lease, to the extent that it is a contract of a character specified in the Contract Work Hours Standards Act (40 U.S.C. 327-330) and is not covered by the Walsh-Healy Public Contracts Act (41 U.S.C. 35-45), is subject to the following provisions and exceptions of said Contract Work Hours Standards Act and to all other provisions and exceptions of said law:

(a) The Lessee shall not require or permit any laborer or mechanic in any workweek in which he is employed on any work under this contract to work in excess of 8 hours in any calendar day or in excess of 40 hours in such workweek on work subject to the provisions of the Contract Work Hours Standards Act unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all such hours worked in excess of 8 hours in any calendar day or in excess of 40 hours in such workweek, whichever is the greater number of overtime hours. The "basic rate of pay," as used in this clause, shall be the amount paid per hour, exclusive of the Lessee's contribution or cost for fringe benefits and any cash payment made in lieu of providing fringe benefits, or the basic hourly rate contained in the wage determination, whichever is greater.

(b) In the event of any violation of the provisions of paragraph (a), the Lessee shall be liable to any affected employee for any amounts due, and to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of the provisions of paragraph (a) in the sum of $10 for each calendar day on which such employee was required or permitted to be employed on such work in excess of 8 hours or in excess of the standard workweek of 40 hours without payment of the overtime wages required by paragraph (a).

V. GOVERNMENT RULES AND REGULATIONS
Lessee shall comply with such rules and regulations regarding station security, ingress, egress, safety and sanitation as may be prescribed, from time to time, by the Local Government Representative or by the Commanding Officer of the Station.

W. USE IN PERFORMANCE OF GOVERNMENT CONTRACTS
Lessee shall notify the Local Government Representative promptly whenever the use of the Leased Property in the performance of Government contracts changes so as to utilize 75 per cent or more of the total capacity thereof, and conversely whenever such use changes so as to utilize less than 75 per cent of such capacity.

X. NOTICES
No notice, order, direction, determination, requirement, consent, or approval under this lease shall be of any effect unless in writing. All notices required under this lease shall be addressed to Lessee, or to the Local Government Representative, as may be appropriate, at the addresses thereof specified in this lease or at such other addresses as may from time to time be agreed upon by the parties hereto.

Y. PAYMENTS
All payments to the Government required under this lease shall be made by check or postal money order made payable to the Department of the Navy and delivered to the Local Government Representative.

Z. INTEREST
Notwithstanding any other provision of this lease, unless paid within thirty (30) days, all amounts that become payable by the Lessee to the Government under this lease (net of any applicable tax credit under the Internal Revenue Code) shall bear interest from the date due until paid and shall be subject to adjustments as provided by Part 6 of Appendix E of the Armed Services Procurement Regulation, as in effect on the date of this lease. The interest rate per annum shall be the interest rate in effect which has been established by the Secretary of the Treasury pursuant to Public Law 92-41; 85 Stat. 97 for the Renegotiation Board, as of the date the amount becomes due as herein provided. Amounts shall be due upon the earliest one of (i) the date fixed pursuant to this lease; (ii) the date of the first written demand for payment, consistent with this lease, including demand consequent upon default termination; (iii) the date of transmittal by the Government to the Lessee of a negotiated pricing proposal or in connection with a negotiated pricing agreement not confirmed by lease amendment.

AA. ADMINISTRATION
The Local Government Representative specified in Article 12 of this lease shall, under the direction of the Commander, Naval Facilities Engineering Command, have complete charge of the administration of this lease, and shall exercise full supervision and general direction thereof insofar as the interests of the Government are affected.
SPECIFICATIONS FOR
RECASING OF WELL NO. 2358-02
PEARL CITY PENINSULA, OAHU
AGRICULTURAL OUTLEASE AREA
(LEASE NO. N6274285RP)

1. DESCRIPTION OF WORK: The work to be performed as described herein is a Government-directed reimbursable conservation improvement for Agricultural Outlease N6274285RP and includes recasing of Well No. 2358-02 and installation of a new PVC well head valve assembly as shown in Appendix B, in accordance with the schedule given in Appendix C. The lessee shall coordinate the performance of this work with the Division of Water and Land Development (DOWALD), Department of Land and Natural Resources (DLNR), State of Hawaii, and obtain all necessary permits as required. Further, the lessee shall coordinate all operations with the Activity Civil Engineer, Navy Public Works Center, telephone [redacted] and the Pacific Division, Naval Facilities Engineering Command, Pearl Harbor, Hawaii, telephone [redacted], prior to commencement of work.

2. MATERIALS: Materials shall meet the requirements specified below:

   a. Polyvinyl chloride (PVC) plastic pipe (6-inch diameter) shall conform to the requirements of ASTM 1785, Schedule 80. PVC plastic pipe fittings shall conform to the requirements of ASTM D 2466 or D 2467. The coupling rubber ring gasket shall consist of synthetic rubber compound which conforms to the requirements of ASTM D 1869, Rubber Rings for Asbestos Cement Pipe.

   b. All pipe and fittings shall bear the seal of approval of "nSf" trade mark of the National Sanitation Foundation Testing Laboratory, Inc., School of Public Health, University of Michigan, Ann Arbor, Michigan. Solvent cement shall be compatible with and of the kind recognized by the industry as proper for use.

3. WORK REQUIREMENTS: The work on the well shall be performed by a licensed well driller. The order of work for this project shall be as follows:

   a. Establishing a Reference Mark: A reference mark shall be established in a safe location at the job site. The existing measuring point is the top of the horizontal flange on the 12-inch steel casing (13.17 feet above mean sea level). After all work is completed, the elevation of the measuring point for the new system shall be transferred back from the established reference mark to the top of the gate-valve. This elevation point is a USGS datum standard and is necessary for determining the height of the water above mean sea level.

   b. Access to the well shall be provided for vehicles and equipment. The work area shall be cleared of all ground and overhead obstructions.
c. Removal of Existing Well Head: The existing 12-inch steel casing shall be cut to remove the valve assembly and other above-ground appurtenances leaving a casing extension of 2 feet above ground. A temporary standpipe shall be installed to prevent artesian flow of water during logging and recasing operations.

d. Logging: The well shall be logged by DOWALD to determine total depth and existing condition of the open well bore and casing. Logging data shall be used to determine depths for and setting the new PVC casing and packer. Two days advance notice of readiness to log shall be given by the lessee, or his contractor, to DOWALD. The State's point of contact for such operations is Mr. Ed Sakoda, telephone 548-7543.

e. Clearing of the Well: All obstructions shall be cleared and removed from the portion of the well to be re-cased as determined by DOWALD. Clearing of the well shall be judged by the unimpeded passage of a 12-inch diameter drilling bit or equivalent.

f. Well Recasing: The well shall be recased with 6-inch PVC, Schedule 80, plastic pipe, as generally depicted in the attached diagram and as approved by DOWALD in the field. A pneumatic rubber packer shall be installed in the open hole below the existing casing at a depth determined by DOWALD. A grout seal consisting of 1± foot of sand and 5± feet of neat cement shall be placed above the packer and allowed to set for 24 hours before grouting the remaining annular space. The remaining annular space shall be grouted through a tremie pipe placed above the grout seal and withdrawn as the grout rises in the annulus.

g. Well head valve Assembly: A 6-inch PVC gate-valve assembly shall be installed as depicted on the attached drawing. A 6-inch threaded cap with a 3/4-inch threaded plug shall be installed on top of the PVC pipe.

h. Cleanup: At the completion of the project, the lessee, or his contractor, shall remove all excess materials and debris and leave the job site in a neat and orderly condition. Any damage to the ground and/or existing structures shall be immediately repaired by the lessee or his contractor upon completion of re-casing operations.

4. COMPLETION OF WORK:

a. Recasing of the well shall be considered completed when the well is grouted, well head assembly installed, and site has been cleaned up.

b. Payment: Removal of the existing valve assembly, preparing the well site for logging and re-casing work, clearing any obstructions in the well, installing and grouting PVC casing, installing new PVC well head valve assembly, and cleanup operations shall be paid for on a lump sum basis, which price shall be full compensation for furnishing all materials.
labor, tools, equipment and miscellaneous items, and for accomplishing all work involved in furnishing and installing, modifying or repairing the components or combinations thereof as required by this recasing work. All additional materials and labor not shown or listed on the plans or called for herein which are necessary to complete the recasing of the well, shall be considered incidental to the work and no additional compensation will be allowed therefor. Payment shall be in accordance with Section IV of the Soil and Water Conservation Plan.

Attach.
PROPOSED DECASING OF WELL 3358-02

3/4" Threaded plug
6" Threaded cap
Std hose bib
6" PVC gate valve
6" x 6" Threaded nipple, PVC, Sch. 80
Top of gate valve = 12' msl
Threaded joint

GROUND ELEV. = 9'

Existing 12" steel casing
New 6" PVC, Sch. 80 Casing

Neat cement grout

1' sand

NOT TO SCALE.
SPECIFICATIONS FOR
RE-CASING OF WELL NO. 2358-02
PEARL CITY PENINSULA, OAHU
AGRICULTURAL OUTLEASE AREA
(LEASE NO. N6274286RPGD0009)

1. DESCRIPTION OF WORK: The work to be performed as a Government-directed conservation improvement project on a credit basis under Agricultural Outlease includes also re-casing of Well No. 2358-02 and installation of a new PVC well head valve assembly as shown in Appendix B, in accordance with the schedule given in Appendix C. The lessee shall coordinate the performance of this work with the Division of Water and Land Development (DOWALD), Department of Land and Natural Resources (DLNR), State of Hawaii, and obtain all necessary permits as required. Further, the lessee shall coordinate all operations with the Activity Civil Engineer, Navy Public Works Center, telephone (and the Pacific Division, Naval Facilities Engineering Command, Pearl Harbor, Hawaii telephone 7, prior to commencement of work.

2. MATERIALS: Materials shall meet the requirements specified below:

   a. Polyvinyl chloride (PVC) plastic pipe (6-inch diameter) shall conform to the requirements of ASTM 1785, Schedule 80. PVC plastic pipe fittings shall conform to the requirements of ASTM D 2466 or D 2467. The coupling rubber ring gasket shall consist of synthetic rubber compound which conforms to the requirements of ASTM D 1869, Rubber Rings for Asbestos Cement Pipe.

   b. All pipe and fittings shall bear the seal of approval of "nSan" trade mark of the National Sanitation Foundation Testing Laboratory, Inc., School of Public Health, University of Michigan, Ann Arbor, Michigan. Solvent cement shall be compatible with and of the kind recognized by the industry as proper for use.

3. WORK REQUIREMENTS: The work on the well shall be performed by a licensed well driller. The order of work for this project shall be as follows:

   a. Establishing a Reference Mark: A reference mark shall be established in a safe location at the job site. The existing measuring point is the top of the horizontal flange on the 12-inch steel casing (13.17 feet above mean sea level). After all work is completed, the elevation of the measuring point for the new system shall be transferred back from the established reference mark to the top of the gate-valve. This elevation point is a USGS datum standard and is necessary for determining the height of the water above mean sea level.

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b. Access to the well shall be provided for vehicles and equipment. The work area shall be cleared of all ground and overhead obstructions.

c. Removal of Existing Well Head: The existing 12-inch steel casing shall be cut to remove the valve assembly and other aboveground appurtenances leaving a casing extension of about 1 to 2 feet aboveground. A temporary standpipe shall be installed to prevent artesian flow of water during logging and re-casing operations.

d. Logging: The well shall be sounded by DOWALD to determine total depth and existing condition of the open well bore and casing. Logging data shall be used to determine depths for and setting the new PVC casing and packer. Two days advance notice of readiness to log shall be given by the lessee, or his contractor, to DOWALD. The State's point of contact for such operations is Mr. Ed Sakoda, telephone.

e. Clearing of the Well: All obstructions shall be cleared and removed from the portion of the well to be re-cased as determined by DOWALD. Clearing of the well shall be judged by the unimpeded passage of a 12-inch diameter drilling bit or equivalent.

f. Well Re-casing: The well shall be re-cased using 6-inch PVC, Schedule 80, plastic pipe, as generally depicted in the attached diagram and as approved by DOWALD in the field. A pneumatic rubber packer shall be installed in the open hole below the existing casing at a depth determined by DOWALD. A grout seal consisting of 1+ foot of sand and 5+ feet of neat cement shall be placed above the packer and allowed to set for 24 hours before grouting the remaining annular space. The remaining annular space shall be grouted through a tremie pipe placed above the grout seal and withdrawn as the grout rises in the annulus.

g. Well head valve assembly: A 6-inch PVC gate-valve assembly shall be installed as depicted on the drawing. A 6-inch threaded cap with a 3/4-inch threaded plug shall be installed on top of the PVC pipe.

h. Cleanup: At the completion of the project, the lessee, or his contractor, shall remove all excess materials and debris not incorporated in or necessary to the re-cased well and leave the job site in a neat and orderly condition. Any damage to the ground and/or existing structures shall be immediately repaired by the lessee or his contractor upon completion of re-casing operations.

4. COMPLETION OF WORK

a. Re-casing of the well shall be considered completed when the well is grouted, well head assembly installed, and site has been cleaned up.
b. Payment: Removal of the existing valve assembly, preparing the well site for logging and re-casing work, clearing any obstructions in the well, installing and grouting PVC casing, installing new PVC well head valve assembly, and cleanup operations shall be paid for on a lump sum basis, which price shall be full compensation for furnishing all materials, labor, tools, equipment and miscellaneous items, and for accomplishing all work involved in furnishing and installing, modifying or repairing the components for combinations thereof as required by this re-casing work. All additional materials and labor not shown or listed on the plans or called for herein which are necessary to complete the re-casing of the well, shall be considered incidental to the work and no additional compensation will be allowed therefor. Payment shall be in accordance with Section IV of the Soil and Water Conservation Plan.
SKETCH OF RECASING OF WELL 2358-02

3/4" THREADED PLUG
6" THREADED CAP
6" x 6" THREADED NIPPLE, PVC, SCHED. 80
TOP OF GATE VALVE = 12' MSL
STD. HOSE BIB
6" PVC GATE VALVE
THREADED JOINT
GROUND ELEV. = 9.1 FT
NEW 6" PVC SCH 80 CASING
EXISTING 12" STEEL CASING
NEAT CEMENT GROUT
COUPLING 20' O.C.
CEMENT BASKET
APPROX. 1' SAND
PNEUMATIC RUBBER PACKER
6" PVC COUPLING TO PREVENT PACKER FROM SLIPPING OFF

NOT TO SCALE
U.S. NAVY WELLS

PEARL HARBOR GROUNDWATER CONTROL AREA
LOG & DATA
on
T. Miyahira Well
U.S.G.S. No. 200-1
Pearl City

0.0 - 4.0 (4.0) Very soft soil.
4.0 - 20.0 (16.0) Soil and Boulders.
20.0 - 33.0 (13.0) Compact gritty soil.
33.0 - 45.0 (12.0) Mudrock or soft gray rock. First water at 38.0
45.0 - 70.0 (26.0) Soft gray rock with streaks of Hard gray rock.
70.0 - 100.0 (30.0) Medium and soft red rock with a hard streak at 95 after which flow greatly increased.

Elev. top of vertical flange on elbow is 10.0'
Head - April 22, 1953 - 17.5
Salt - - - - - 13.7 spg

Hibbled Highwater1953004000Whitton

Copy to U. S. G. S.
LOG & DATA on
K. Koshimizu Well
U.S.G.S NO. 200-2
Pearl City

---

0.0 - 8.0  (8.0) Soft soil.
8.0 - 21.0  (13.0) Soil, gravel, & boulders.
21.0 - 26.5  (5.5) Soft soil.
26.5 - 29.6  (3.1) Boulder.
29.6 - 35.6  (6.0) Soil.
35.6 - 45.0  (9.4) Soft red rock - water.
45.0 - 77.0  (32.0) Medium red & gray rock.
77.0 - 82.0  (5.0) Soft red rock.
82.0 - 105.0  (23.0) Medium gray rock.
105.0 - 118.0  (13.0) Hard Gray rock.

---
Elevation top of vertical flange on 8' elbow is 18.14'/2.89 ft.
Head - May 15, 1953  - 16.3
Salt - " " - 13.6 gpg
Flow - " " - 360,000 gpd

Drilled ---- May 1953 by Nat Whiton

Copy to U.S.G.S.
**Formation:** Mention size of water gravel—

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Top soil</td>
</tr>
<tr>
<td>2</td>
<td>Clay and rock</td>
</tr>
<tr>
<td>8</td>
<td>Clay, gravel, hard streaks</td>
</tr>
<tr>
<td>118</td>
<td>Clay gravel</td>
</tr>
<tr>
<td>126</td>
<td>Rock, medium hard</td>
</tr>
<tr>
<td>140</td>
<td>Clay and gravel</td>
</tr>
<tr>
<td>146</td>
<td>Medium hard rock</td>
</tr>
<tr>
<td>177</td>
<td>Hard rock</td>
</tr>
<tr>
<td>184</td>
<td>Soft brown and red rock</td>
</tr>
</tbody>
</table>

Water level when first started Test: 2358 - 48 ft.

Draw down from standing level: 4 ft.

No. of gallons per minute pumped when Test first started:

No. of gallons per minute pumped when Test completed:

Draw down at completion of Test: 4 ft.

Hours Testing Well:

Formation: Mention size of water gravel—

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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<tr>
<td>184</td>
<td>Soft brown and red rock</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Material</th>
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</thead>
<tbody>
<tr>
<td>126 + 133</td>
<td>@ 200 ft.</td>
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<tr>
<td>163</td>
<td>20 gpm</td>
</tr>
<tr>
<td>12</td>
<td>700 gpm</td>
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</table>
WELL 201, Deorl City

MAX WATER LEVEL: 31.21
MIN. WATER LEVEL: 14.18

<table>
<thead>
<tr>
<th>Date</th>
<th>Well</th>
<th>Depth</th>
<th>1936</th>
<th>1937</th>
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<tbody>
<tr>
<td>6</td>
<td>U</td>
<td>19.53</td>
<td>465</td>
<td>22.11</td>
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<tr>
<td>6</td>
<td>F</td>
<td>19.80</td>
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<td>E</td>
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<td>5</td>
<td>S</td>
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<tr>
<td>4</td>
<td>S</td>
<td>17.22</td>
<td>398</td>
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<tr>
<td>3</td>
<td>C</td>
<td>17.57</td>
<td>372</td>
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<td>3</td>
<td>G</td>
<td>17.73</td>
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<tr>
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<td>A</td>
<td>17.91</td>
<td>344</td>
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<tr>
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<td>C</td>
<td>16.45</td>
<td>367</td>
<td>22.07</td>
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<tr>
<td>2</td>
<td>D</td>
<td>16.69</td>
<td>458</td>
<td>21.19</td>
</tr>
<tr>
<td>2</td>
<td>N</td>
<td>20.75</td>
<td>500</td>
<td>22.17</td>
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<tr>
<td>2</td>
<td>D</td>
<td>21.27</td>
<td>512</td>
<td>23.09</td>
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June 29, 1984

MEMORANDUM FOR THE RECORD

FROM: Ed Sakoda

SUBJECT: Wells on Navy Lease Land, PHGWCA (2358-01, 02, 27, 28, 48)

Spoke with Gene Chock, Navy Real Estate Division, regarding above wells. Kohler is no longer the lessee. The lease was terminated in December 1983 and he has been out of there since March 1984. The Navy is working on a management plan for the property. It could include provisions for recasing the wells as part of the lease.

Gene Chock mentioned that the Legislature passed something in 1982 concerning the area. I met with Paul Schwind, Dept. of Agriculture and he gave me copies of the House and Senate Resolutions (attached) concerning wetland agriculture which includes and mentions the Navy land.

The following people are connected with this situation:

Gene Chock, Navy, Real Estate Division, (Ph. 471-3217)

Don Rappel, Navy, Land and Natural Resources - out of town until July 9, 1984.

Charlie Ewart, USGS: Working on the design of USGS Observation Well 2358-02. Will submit to Navy and to DOWALD for review.

Paul Schwind, Dept. of Agriculture. DOA is interested in keeping such areas in wetland agriculture, as reflected in the legislative resolutions.

ED SAKODA

ES:ka