In response to your letter dated November 1, 1996, enclosed are the completed application and/or well completion reports for the following wells.

- Well No. 2901-13 (MW1-1)
- Well No. 3004-02 (MW4-2)
- Well No. 3004-03 (MW4-3)
- Well No. 2802-01 (MW2-6)

With regard to Well MW4-2, there is only one well by that name and is assigned the state Well No. 3004-02. The misunderstanding may have occurred when we filed the Well Completion Report for Well MW4-2. Initially, we had planned to drill a well in the location designated on the enclosed figure by Well No. 2900-01, thus we submitted a permit application. However, we decided to move the well location to its present location, designated by Well No. 3004-02. When we submitted the Well Completion Report for Well MW4-2, we inadvertently used the wrong state Well No. designation and did not notify you that a well was not drilled in the Well No. 2900-1 location. We also had surveying errors at the beginning of the project, thus, you may notice that the well elevations somewhat differ.

Since, there is no well at the Well No. 2900-01 location, we are not submitting a pump installation permit application.

If you have any questions, please feel free to call.
Mr. Jon Fukuda  
U.S. Army  
DPW, ATTN: APVG-GVW, U.S. Army Garrison  
Schofield Barracks, HI 96857-5000

Dear Mr. Fukuda:

Well Construction / Pump Installation Permit Application  
Well No. 2901-13

We have received your well construction / pump installation permit application and filing fee for the MW1-1 Well (Well No. 2901-13). However, your application is incomplete.

We are returning the original well construction/pump installation permit application to you (attached). Please complete all highlighted areas on the application and return the completed application to our office. A copy of your application has been made for our record.

Other matters which must be addressed before we accept your application as complete are as follows:

1. Please complete all highlighted areas on the original well completion reports for the following wells (originals attached; copies have been made for our record):
   a. Well No. 2901-13
   b. Well No. 3004-02
   c. Well No. 3004-03
   d. Well No. 2802-01

With regard to MW4-2, our records indicate that there are two (2) wells named MW4-2; one is assigned Well No. 2900-01 and the other is assigned Well No. 3004-02 (see attached map, permit applications, permits, and well completion reports for the two wells). Please confirm if there are two existing wells named MW4-2.
Also, note that the well completion report - Part II for Well No. 2900-01 shows a permanent pump installation. We request that you submit an after-the-fact application for the permanent pump installation in Well No. 2900-01. We have attached a blank application form for your use.

You are correct in that Well No. 3004-03 refers to MW4-3 instead of MW4-4; we apologize for this typographical error in our letter of April 11, 1996. We also confirm that Well No. 2900-02 refers to MW2-1, as indicated on the table in your letter of October 14, 1996.

Upon receipt of the above information we will accept your application as complete and you can then expect your application to be processed within ninety (90) days.

If you have any questions about your permit application, please contact Lenore Nakama of the Commission staff at 587-0218. Thank you for your continued assistance and cooperation in matters related to water resources.

Sincerely,

RAE M. LOUI
Deputy Director

LN:fc

Enclosure
Ms. Lenore Nakama
State of Hawaii, Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Schofield Army Barracks RI/FS Well Information
Permit Applications and Completion Reports
Schofield Barracks, Hawaii

Dear Ms. Nakama:

As discussed during our telephone conversation on August 27, 1996, we have enclosed a copy of a USGS topographic map showing the locations of 12 monitoring wells installed for this project. The monitoring wells are identified on the map by their Army identification numbers. When we received your letter dated April 11, 1996, there seemed to be some confusion over which state well identification numbers were assigned to which of our monitoring wells. Your letter indicated that Wells 4-2 and 4-4 were assigned state well identification numbers 3-2900-01 and 3-3004-03, respectively. The actual geographic location of Well 4-2 does not correspond to well identification number 3-2900-01. Based on our records, the state well identification numbers should be assigned as follows:

<table>
<thead>
<tr>
<th>Project Well Number</th>
<th>Hawaii State Well ID Number</th>
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</thead>
<tbody>
<tr>
<td>1-1</td>
<td>3-2901-13</td>
</tr>
<tr>
<td>2-1</td>
<td>3-2900-02</td>
</tr>
<tr>
<td>2-2</td>
<td>3-2903-01</td>
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<tr>
<td>2-3</td>
<td>3-2902-03</td>
</tr>
<tr>
<td>2-4</td>
<td>3-2801-02</td>
</tr>
<tr>
<td>2-5</td>
<td>3-2959-01</td>
</tr>
<tr>
<td>2-6</td>
<td>3-2802-01</td>
</tr>
<tr>
<td>4-2A</td>
<td>3-3004-02</td>
</tr>
<tr>
<td>4-2</td>
<td>3-3004-05</td>
</tr>
<tr>
<td>4-3</td>
<td>3-3004-03</td>
</tr>
<tr>
<td>4-4</td>
<td>3-3004-04</td>
</tr>
</tbody>
</table>

We hope this table and the map will help clear up the confusion regarding the well numbers and locations.

As requested in your April 11, 1996 letter, we have enclosed the following information:

1. Well 1-1 (State Well ID No. 3-2901-13)
   a. After-the-fact application for a well construction/pump installation permit
   b. Well completion report
October 14, 1996
28339.06.01.12
0225AR
Ms. Lenore Nakama
State of Hawaii, DLNR
Page 2

2. Well 4-2 (State Well ID No. 3-3004-02)
   a. Well completion report
   b. Well completion diagram

Although 12 monitoring wells were installed over the lifetime of the project, only 11 are functioning with submersible pumps. There were problems during the installation of Well 4-2. The cable used to pull the pump out of the well broke. After numerous unsuccessful attempts to retrieve the pump, the pump was abandoned and is not functional. Thereafter, Well 4-2 was used only to measure groundwater levels. Thus, a pump installation report and diagram were never included in the original permit application. Because Well 4-2 could not be used as a monitoring well, a new well was drilled within 15 feet of the old well. We gave the new well the name 4-2A, and this may have led to additional confusion.

Your April 11 letter also requested information on State Wells 3-2900-01 and 3-3004-03. From our records, State Well 3-3004-03 refers to Well 4-3 instead of 4-4, as listed in your letter. But we are uncertain which wells are referred to by State Wells 3-2900-01 and 3-2900-02. At one time, we did propose to install a monitoring well in a part of the East Range, but that idea was rejected. It is possible, perhaps, that someone such as the drilling company may have submitted a permit application in advance. If that is the case, that particular permit should be withdrawn, as that well was never drilled. Because of the confusion, we have enclosed copies of the well completion reports for both Wells 4-3 and 4-4.

In addition, we have enclosed survey data for all the wells, and the well completion report for Well 2-6 with supporting boring log and well completion diagram information.

We hope that this information will help clarify the confusion between the two well identification systems. I will be available to discuss these wells with you personally if you so desire. If you have any questions, please feel free to call.

Sincerely yours,

HARDING LAWSON ASSOCIATES

Bruce S. Wedgeworth
Associate Geologist

Enclosures

cc: Mr. Jon Fukuda / U.S. Army, Department of Public Works
July 16, 1996

Harding Lawson Associates
235 Pearlridge Center, Phase I
98-1005 Moanalua Road
Aiea, Hawaii 96701

Attn: Mr. Bruce S. Wedgeworth

Subject: FIELD LOCATION OF MW 2-6
At Wheeler Army Airfield
Oahu, Hawaii

Northing   Easting   Elevation   Latitude   Longitude
MW 2-6     111702.132  484685.053  691.57     21°28'27.04"  158°02'42.147" (Top of Sounding Tube)
BM#1       689.50
BM#2       689.55
BM#3       689.46

Coordinates referred to Hawaii State Plane Coordinate System - Zone 3
Elevation Datum = Mean Sea Level (MSL)
ELEVATION OF MONITORING WELLS AS SURVEYED
ON 7/15/95 (WITH BRUCE & MARK OF HARDING
AND LAWSON)

MW-4-2A = 946.87 feet — Black mark on top of tube
MW-4-2 = 947.11 feet — Black mark on top of tube
"+" cut near casing of MW-4-2A = 945.91 feet

MW-4-1 = 853.47 feet (as surveyed on 3/16/95)
"+" cut = 851.12 feet
Diff. = 2.35 feet (Bruce needs diff. in elev. only)

MW-4-3 = 884.15 feet (as surveyed on 3/16/95)
"+" cut = 882.52 feet
Diff. = 1.63 feet (Bruce needs diff. in elev. only)

MW-4-4 = 829.88 feet — Black mark

MW-2-2 = 864.34 feet — Black mark on top of tube
"+" cut = 862.90 feet

MKL-2-3 = 828.81 feet — Black mark on top of tube
"+" cut = 827.20 feet

MKL-2-4 = 829.70 feet — Black mark on top of tube
"+" cut = 828.00 feet

MW-2-1 = 903.75 feet — Black mark on top of tube
Coordinate File Name: HARDING.CO

Wednesda'y January 10, 1996

Lowest point #: 1   Highest point #: 6

Title: Coordinate Manager

Job # 0

Description:

<table>
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<th>Northing</th>
<th>Easting</th>
<th>Elev</th>
<th>Descr</th>
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<td>490579.0620</td>
<td>855.3500 MW 1-1</td>
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<td>474006.8800</td>
<td>884.1500 MW 4-3</td>
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<td>Sp. 6</td>
<td>118439.3594</td>
<td>503505.7809</td>
<td>912.4300 MW 2-5</td>
<td></td>
</tr>
</tbody>
</table>

0-00-13.601 CONVERGENCE
0.9999900 SCALE FACTOR
0.9999464 GRID FACTOR

Sp - Hawaii State Plane Coordinate System, Zone 3 (NAD 27)


### WELL COMPLETION REPORT

**State Well No.:** 2802-01  **Well Name:** M2W-6  **Island: OAHU**

**Location/Address:** Wheeler AAF  **Tax Map Key:** 7-7-01

### PART I. WELL CONSTRUCTION REPORT

3. **Drilling Company:** Roscoe Moss Hawaii, Inc.
4. **Name of driller who performed work:** John Carroll
5. **Type of rig/construction:** Air Rotary
6. **Date(s) Well Construction and pump tests (if any) completed:** 5/25/96
7. **GROUND ELEVATION** (referenced to mean sea level, msl): 689.46 ft.
   - **Top of sounding tube:** 691.57 ft.
   - **Elevation(msl):** 691.57 ft.
8. **DRILLER'S LOG:** Please attach geologic log (if available or if required by permit)
   - **Depths (ft.)**
     - **Rock Description, Water Level, Oates, etc.**
     - **See attached**
   - **(If more space is needed, continue on back.)**
9. **Total depth of well below ground:** 555 ft.
10. **Hole size:** 30 inch dia. from 0 ft. to 30 ft. below ground
     - 10 inch dia. from 30 ft. to 575 ft. below ground
11. **Casing installed:** 6 in. I.D. x ___ in. wall solid section to 405 ft. below ground
     - 6 in. I.D. x ___ in. wall perforated section to 555 ft. below ground
12. **Annulus:** Grouted from 0 ft. below ground to 390 ft. below ground
     - Gravel packed from 390 ft. below ground to 575 ft. below ground
13. **Initial water level:** 415 ft. below ground.  **Date and time of measurement:** 5/23/96 09:00
14. **Initial chloride:** NA ppm  **Date and time of sampling:**
15. **Initial temperature:** NA °F  **Date and time of measurement:**
16. **PUMPING TESTS:** Reference Point (R.P.) used: NA, which elevation is ___ ft.
   - **(1) Step-Drawdown Test Date**
   - **Start water level** ft. below R.P.
   - **End water level** ft. below R.P.
   - **(2) Long-term Aquifer Test Date**
   - **Start water level** ft. below R.P.
   - **End water level** ft. below R.P.
17. **Aquifer Pump Test Procedures data & graphs (1/996 LTAT Form) attached?** __Yes__ __No__
18. **As-built drawings attached?** __Yes__ __No__
19. **Other remarks/comments:** (On back of this form)

### Signature
- **Well Drilling Contractor (print) C-57 Lic. No.**
- **Surveyor (print) Lic. No.**
- **Applicant (print) Date**

---
## PART II. (PERMANENT) PUMP INSTALLATION REPORT

20. Pump Installation Company: Roscoe Moss Hawaii, Inc.

21. Name of person performing work: Hal Fenton

22. Date Pump Installation Completed: 6/19/96

23. PUMP INSTALLATION:
   - Pump Type, Make, Serial No.: Meyers Submersible/357543-25B
   - Motor type, H.P., Voltage, rpm: Electrical, 7.5 hp
   - Depth of Pump Intake Setting: 430 ft. below ground, which elevation is 260 ft.
   - Depth to bottom of airline: NA ft. below, which elevation is ft.
   - Pumping Head: 275 ft.
   - Type of flow meter: NA

24. As-built drawings attached: No

25. Other remarks/comments: (See below)

### Pump Installation Contractor (print)

C-57 Lic. No.

### Applicant (print)

Signature

Date

---

### 8. (cont'd) DRILLER'S LOG (cont'd):

<table>
<thead>
<tr>
<th>Dates (ft.)</th>
<th>Water Level (ft.)</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks</th>
<th>Water Level (ft.)</th>
<th>Dates (ft.)</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

19. & 25. Remarks:

---

---

---
DEPTH (FT)  ELEVATION (FT)*

395  294
415.5  276.1 (05/24/96) \(\n\) (ELEVATION OF GROUNDWATER)

424  265
425  264
430.5  258.5
433  256
555  134
565  124
575  114

*DATUM: MEAN SEA LEVEL

FINES SAND

1" DIA. SCH 80 PVC SOUNDING TUBE
1.5" DIA. STEEL DISCHARGE PIPE
JACKETED SUBMERSIBLE
1/4" STAINLESS STEEL SAFETY CABLE

CHECK VALVE

STAINLESS STEEL ELECTRICAL CABLE
WIRE GUARD
RUBBER TORQUE ARRESTOR
3.75" DIA. MYERS PUMP

PUMP INTAKE
3.75" DIA. FRANKLIN
7.5 HORSEPOWER ELECTRIC MOTOR

SILICA SAND FILTER PACK
6" DIA. STAINLESS STEEL LOUVERED SCREEN

10" DIA. HOLE DRILLED WITH AIR ROTARY

SAND

(PUMP INSTALLATION DIAGRAM FOR MONITORING WELL 2-6)

Harding Lawson Associates
Engineering and Environmental Services

Schofield Barracks
Island of Oahu, Hawaii

Figure

Drawn
Job Number
Approved
File
Date
Revised Date
jcl  28339.11.08.12
28399103  10
19961004.1509  10/96
Monitoring Wells 2-1 Through 2-6 and 4-2A
Typical Well Head and Well Cover Detail
Schofield Barracks
Island of Oahu, Hawaii

- 2-802-01

NOT TO SCALE
WELL COMPLETION REPORT

Part I.

1. State Well No.: 2802-01
2. Location/Address: Wheeler AAF

WELL CONSTRUCTION REPORT

3. Drilling Company: Roscoe Moss Hawaii, Inc.
4. Name of driller who performed work: John Carroll
5. Type of rig/construction: Air Rotary
6. Date(s) Well Construction and pump tests (if any) completed: 5/25/96
7. GROUND ELEVATION (referenced to mean sea level, msl): 689.46 ft.
   Well Bench Mark (description/location): Top of sounding tube Elevation (msl): 691.57 ft.
8. DRILLER'S LOG: Please attach geologic log (if available or if required by permit)

<table>
<thead>
<tr>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, Dates, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>to</td>
<td>See attached</td>
</tr>
<tr>
<td>to</td>
<td></td>
</tr>
</tbody>
</table>

(If more space is needed, continue on back.)

9. Total depth of well below ground: 555 ft.
10. Hole size:
    - 30 in. dia. from 0 ft. to 30 ft. below ground
    - 10 in. dia. from 30 ft. to 575 ft. below ground
11. Casing installed:
    - 6 in. I.D. x _______ in. wall solid section to 405 ft. below ground
    - 6 in. I.D. x _______ in. wall perforated section to 555 ft. below ground
    Casing Material/Slot Size: ___________
12. Annulus:
    - Grouted from 0 ft. below ground to 390 ft. below ground
    - Gravel packed from 390 ft. below ground to 575 ft. below ground
13. Initial water level: 415 ft. below ground. Date and time of measurement: 5/23/96 09:00
14. Initial chloride: NA ppm Date and time of sampling: __________
15. Initial temperature: NA °F Date and time of measurement: __________
16. PUMPING TESTS: Reference Point (R.P.) used: NA, which elevation is _______ ft.
    (1) Step-Drawdown Test Date (2) Long-term Aquifer Test Date __________

    | Start water level | ft. below R.P. | Start water level | ft. below R.P. |
    |------------------|----------------|------------------|----------------|
    | End water level  | ft. below R.P. | End water level  | ft. below R.P. |
17. Aquifer Pump Test Procedures data & graphs (1/9/96 LTAT Form) attached? _ Yes _ No
18. As-built drawings attached? _ Yes _ No
19. Other remarks/comments: (On back of this form)

Well Drilling Contractor (print) Tracy Funnes C-57 Lic. No. C-16437
Signature
Date 1/19/97

Surveyor (print) Russell Finney Lic. No. 4789 – Hawaii
Signature
Date 1-8-97

Applicant (print) COL DOWNS J. FONTANA
Signature
Date 1-14-97
## PUMP INSTALLATION REPORT

### PART II. (PERMANENT) PUMP INSTALLATION REPORT

20. Pump Installation Company: Roscoe Moss Hawaii, Inc.
21. Name of person performing work: Hal Fenton
22. Date Pump Installation Completed: 6/19/96
23. PUMP INSTALLATION:
   - Pump Type, Make, Serial No.: Meyers submersible/357543-25B  
     Capacity: 25 gpm  
   - Motor type, H.P., Voltage, rpm: Electrical, 7.5 hp
   - Depth of Pump Intake Setting: 430 ft. below ground, which elevation is 260 ft.
   - Depth to bottom of airline: NA ft. below, which elevation is
   - Pumping Head is: 275 ft. Type of flow meter: NA which measures in

24. As-built drawings attached? Yes No
25. Other remarks/comments: (See below)

<table>
<thead>
<tr>
<th>Pump Installation Contractor (print)</th>
<th>Tracy Rundells</th>
<th>C-57 Lic. No.</th>
<th>PC-16437</th>
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<tr>
<td>Signature</td>
<td>Tracy Rundells</td>
<td>Date</td>
<td>1/8/97</td>
</tr>
<tr>
<td>Applicant (print)</td>
<td>Dennis J. Fontana</td>
<td>Date</td>
<td>1/14/97</td>
</tr>
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### DRILLER'S LOG (cont'd):  

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<thead>
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<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates (ft.)</th>
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</thead>
<tbody>
<tr>
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### Remarks:

7-2802-01 Schofield Mili 2-6
<table>
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<tr>
<th>Sample Interval (feet)</th>
<th>Breaching Speed (gpm)</th>
<th>Inches Recovered/Inches Cored</th>
<th>Coring Rate (min./foo)</th>
<th>Drilling Rate (min./ft.)</th>
<th>Sample Number</th>
<th>Depth (ft)</th>
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</table>

**Equipment**

**Ground Elevation** ~690 ft

**Date** 05/11/96

**Log of Monitoring Well 2-6**

**Harding Lawson Associates**

**Schofield DA03**

**Schofield Barracks**

**Island of Oahu, Hawaii**

**DRAWN**

**JOB NUMBER**

**APPROVED**

**FILE**

**DATE**

**REVISED DATE**

---

**BLACK ASPHALTIC CONCRETE (A/C), 2 inches thick.**

(Borehole drilled with 30-inch bucket auger to 4.5 feet).

**GRAY BROWN SILTY GRAVEL (GM), some sand, (runway base course).**

**REDDISH BROWN ELASTIC Silt (MH), hard, moist, (alluvium).**

(Borehole drilled with 16-inch bucket auger from 4.5 to 30 feet).

Dusky red (2.5YR,3/2) below 7 feet.

**DARK REDDISH BROWN SANDY Silt (ML) (2.5YR,2.5/4), firm, moist, (alluvium).**

(12-inch-diameter steel surface casing set to 30 feet and grouted).

**VER Y D ARK GRAYISH BROWN ELASTIC Silt (MH) (10YR,3/2), some sand and gravel, very stiff, (saprolite).**

Rock (boulder) encountered between 38 and 39 feet.

Red drilling foam return circulation below 53 feet.

Dark reddish brown (5YR,3/4) below 58 feet.

Light brown drilling foam return circulation below 61 feet.
Log of Monitoring Well 2-6  
(Sheet 2 of 9)  

**Equipment**  
Air Rotary by Star 150K  
**Ground Elevation**  
- 690 ft  
**Date**  
05/11/96

<table>
<thead>
<tr>
<th>Sample Interval (feet)</th>
<th>Borehole Measurement (gpm)</th>
<th>Inclined Recovered Holes Covered</th>
<th>Coring Rate Sampled (feet)</th>
<th>Drilling Rate (feet/sec)</th>
<th>Sample Number</th>
<th>Depth (feet)</th>
<th>Sample</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-70</td>
<td>0</td>
<td>2</td>
<td>13</td>
<td>70</td>
<td>1</td>
<td>90</td>
<td>0</td>
<td>LIGHT GRAY SILT (ML) (10YR,7/1), very stiff.</td>
</tr>
<tr>
<td>70-80</td>
<td>0</td>
<td>2</td>
<td>14</td>
<td>80</td>
<td></td>
<td>90</td>
<td>0</td>
<td>Very stiff to hard below 70 feet.</td>
</tr>
<tr>
<td>80-90</td>
<td>0</td>
<td>1</td>
<td>15</td>
<td>90</td>
<td></td>
<td>100</td>
<td>0</td>
<td>VERY DARK GRAYISH BROWN (10YR,3/2), REDDISH YELLOW (5YR,7/8), AND DARK GRAY (7.5YR,N4) SILTY GRAVEL (GM), with pockets of elastic silt, (weathered basalt).</td>
</tr>
<tr>
<td>90-100</td>
<td>0</td>
<td>1</td>
<td>16</td>
<td>100</td>
<td></td>
<td>105</td>
<td>0</td>
<td>Decreased drilling resistance below 85 feet.</td>
</tr>
<tr>
<td>100-110</td>
<td>0</td>
<td>1</td>
<td>17</td>
<td>110</td>
<td></td>
<td>115</td>
<td>0</td>
<td>GRAY (5YR,6/1) AND REDDISH BROWN (5YR,4/4) ELASTIC SILT (MH), with gravel.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>Reddish brown drilling foam return circulation below 98 feet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>Decreased drilling resistance below 97 feet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>Light brown drilling foam return circulation below 98 feet.</td>
</tr>
<tr>
<td>112-117</td>
<td>0</td>
<td>60/60</td>
<td>18</td>
<td></td>
<td></td>
<td>120</td>
<td>0</td>
<td>Gray drilling foam return circulation below 102 feet (but driller notes no increase in drilling effort).</td>
</tr>
<tr>
<td>117-120</td>
<td>0</td>
<td>2</td>
<td>19</td>
<td>120</td>
<td></td>
<td>125</td>
<td>4</td>
<td>BLACK (5YR,2.5/1) AND REDDISH BROWN (5YR,4/4) POORLY GRADED GRAVEL (GP), subrounded to angular.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CORING RUN NO. 1 (4-inch core), DARK GRAY AND BLACK BASALT, moderately hard to hard, strong, moderately to deeply weathered, highly vesicular, moderately fractured.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Reddish brown, low to moderate hardness, closely to intensely fractured below 118 feet, (clinker).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dark reddish brown (5YR,3/3), moderately hard to hard, highly vesicular below 117 feet.</td>
</tr>
<tr>
<td>Sample Interval (feet)</td>
<td>Bailing Space Measurement (rpm)</td>
<td>Inches Recovered/ Inches Cored</td>
<td>Core Rate (mat./min)</td>
<td>Drilling Rate (mat./min, feet)</td>
<td>Sample Number</td>
<td>Sample Depth (ft)</td>
<td>Equipment (Ground)</td>
<td>Elevation</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------</td>
<td>--------------------------------</td>
<td>----------------------</td>
<td>-------------------------------</td>
<td>---------------</td>
<td>------------------</td>
<td>-------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>120-130</td>
<td>0</td>
<td></td>
<td>5</td>
<td>20</td>
<td>130</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>135-140</td>
<td>0</td>
<td>60/60</td>
<td>4</td>
<td>135</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>140-150</td>
<td>0</td>
<td></td>
<td>2</td>
<td>145</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150-160</td>
<td>0</td>
<td></td>
<td>4</td>
<td>160</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>160-170</td>
<td>0</td>
<td></td>
<td>2</td>
<td>170</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>170-180</td>
<td>0</td>
<td></td>
<td>3</td>
<td>180</td>
<td>190</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>185-190</td>
<td>0</td>
<td></td>
<td>4</td>
<td>190</td>
<td>195</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CORE RUN NO. 2,**
Very dark gray (5YR,3/1), low to moderately hard, closely fractured to 138', moderately strong, intensely fractured to crushed below 138', weak, deeply weathered. Reddish brown (clinker) below 138 feet.

Very dark gray (5YR,3/1) below 140 feet. Increased drilling resistance below 144 feet.

**CORE RUN NO. 3,**
Very dark gray (5YR,3/1), slightly to moderately vesicular, hard, strong, moderately fractured to massive, brown staining on joint surfaces, inclusions of olivine.

Decreased drilling resistance below 187 feet.

Reddish brown drilling foam return circulation from 188 to 190 feet. Increased drilling resistance below 191 feet.

(Driller notes possibly more fractures below)
<table>
<thead>
<tr>
<th>Sample Interval (ft)</th>
<th>Breaking Stress Measurement (ipm)</th>
<th>Inches Recovered/Inches Covered</th>
<th>Core Cut Rate (max. 1/2 in.)</th>
<th>Drilling Rate (max. 1/2 in.)</th>
<th>Sample Number</th>
<th>Sample Depth (ft)</th>
<th>Sample Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>190-197</td>
<td>0</td>
<td></td>
<td>6</td>
<td>195</td>
<td>6</td>
<td>195 193 ft</td>
<td>Increased drilling resistance below 194 feet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>195</td>
<td>6</td>
<td>195 193 ft</td>
<td>Increased drilling resistance below 197 feet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>195</td>
<td>6</td>
<td>195 193 ft</td>
<td>Dark gray (2.5YR,N4), very hard to hard,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td>200</td>
<td>17</td>
<td>200 200-200</td>
<td>strong, massive, little weathered, slightly to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td>200</td>
<td>10</td>
<td>200 200-200</td>
<td>non-vesicular, with inclusions of olivine.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td>200</td>
<td>10</td>
<td>200 200-200</td>
<td>Reddish brown (2.5YR,4/4) and gray, highly</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12</td>
<td>200</td>
<td>12</td>
<td>200 200-200</td>
<td>vesicular, closely fractured, moderately hard</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12</td>
<td>200</td>
<td>12</td>
<td>200 200-200</td>
<td>to hard, strong below 200.5 feet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12</td>
<td>200</td>
<td>12</td>
<td>200 200-200</td>
<td>Some olive gray and black seams below</td>
</tr>
<tr>
<td>197-202</td>
<td>0</td>
<td>60/60</td>
<td>2</td>
<td>205</td>
<td>2</td>
<td>205 205</td>
<td>201.5 feet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>205</td>
<td>2</td>
<td>205 205</td>
<td>Dark brown (10YR,3/3), black (10YR,2/1),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>215</td>
<td>7</td>
<td>215 215</td>
<td>and very dark grayish brown (10YR,3/2),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>215</td>
<td>7</td>
<td>215 215</td>
<td>moderately to highly vesicular below 210 feet.</td>
</tr>
<tr>
<td>202-210</td>
<td>0</td>
<td></td>
<td>3</td>
<td>210</td>
<td>3</td>
<td>210 210</td>
<td>Grayish brown drilling foam return circulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>215</td>
<td>7</td>
<td>215 215</td>
<td>below 223 feet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>215</td>
<td>7</td>
<td>215 215</td>
<td>Increased drilling resistance below 226 feet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>225</td>
<td>4</td>
<td>225 225</td>
<td>Decreased drilling resistance below 228 feet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>225</td>
<td>4</td>
<td>225 225</td>
<td>(driller notes possible highly fractured zone).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>235</td>
<td>7</td>
<td>235 235</td>
<td>Decreased drilling resistance below 235 feet.</td>
</tr>
<tr>
<td>220-230</td>
<td>0</td>
<td></td>
<td>3</td>
<td>230</td>
<td>3</td>
<td>230 230</td>
<td>Increased vesicularity below 240 feet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>235</td>
<td>3</td>
<td>235 235</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>240</td>
<td>3</td>
<td>240 240</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>245</td>
<td>3</td>
<td>245 245</td>
<td></td>
</tr>
<tr>
<td>230-240</td>
<td>0</td>
<td></td>
<td>2</td>
<td>250</td>
<td>2</td>
<td>250 250</td>
<td>Very dark gray (7.5YR,N3), and dark brown</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>255</td>
<td>2</td>
<td>255 255</td>
<td>(7.5YR,3/4), less vesicular below 250 feet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>260</td>
<td>4</td>
<td>260 260</td>
<td></td>
</tr>
</tbody>
</table>
Increased drilling resistance below 285 feet. CORE RUN NO. 5. Grey (10YR, 6/1), hard, slightly vesicular, moderately weathered, little fractured. Intensely fractured below 269 feet. Dark reddish brown (5YR, 3/3) and very dark grey (2.5YR, N3) below 270 feet. Decreased drilling resistance below 274 feet.

Increased drilling resistance below 279 feet, reddish brown drilling foam return circulation.

Decreased drilling resistance below 283 feet.

Highly vesicular below 289 feet. (Driller notes void from 290 to 291 feet). Black (10YR, 2/1), nonvesicular, hard below 291 feet. CORE RUN NO. 6. Dark gray (2.5YR,N4), moderately to highly vesicular, slightly to moderately fractured below 295 feet. Dark gray and dark reddish brown, closely to intensely fractured, highly vesicular, moderately hard to hard below 256.5 feet.

Increased drilling resistance below 306 feet.

Less hard, moderately to highly vesicular below 309.5 feet. Decreased drilling resistance below 313 feet.

Light brown drilling foam return circulation below 315 feet.
<table>
<thead>
<tr>
<th>Sample Interval (feet)</th>
<th>Breathing Space Measurement (ppm)</th>
<th>Inches Recovered Inches Covered</th>
<th>Chilling Rate (min./foot)</th>
<th>Drilling Rate (min./foot)</th>
<th>Sample Number</th>
<th>Sample Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>320-330</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>325</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>330-340</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>330</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
<td>335</td>
</tr>
<tr>
<td>340-344</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>340</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>27</td>
<td>345</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
<td>350</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>46</td>
<td>355</td>
</tr>
<tr>
<td>350-360</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td>360</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>365</td>
</tr>
<tr>
<td>360-370</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>370</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>375</td>
</tr>
<tr>
<td>370-380</td>
<td>0</td>
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<td></td>
<td></td>
<td>9</td>
<td>380</td>
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<td></td>
<td>8</td>
<td>385</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>390</td>
</tr>
</tbody>
</table>

- Dark gray (2.5Y,N4), below 330 feet.
- Reddish brown drilling foam return circulation below 332 feet.
- Decreased drilling resistance below 335 feet.

- Increased drilling resistance below 344 feet.
- CORE RUN NO. 7
- Gray and reddish gray, with coarse, rounded gravels, highly vesicular, low to moderately hard, closely to intensely fractured, some seams of silt at 348 feet.
- Dark gray (2.5YR,N4) and dusky red (2.5YR,3/2), moderately to highly vesicular below 350 feet.

- Increased vesicularity below 360 feet.
- Decreased drilling resistance below 354 feet.

- Increased drilling resistance below 374 feet.

- Decreased drilling resistance below 378 feet.
- Increased drilling resistance below 379 feet.

- Decreased drilling resistance below 385 feet.
- Increased drilling resistance below 388 feet.
<table>
<thead>
<tr>
<th>Depth (f)</th>
<th>400</th>
<th>405</th>
<th>410</th>
<th>415</th>
<th>420</th>
<th>425</th>
<th>430</th>
<th>435</th>
<th>440</th>
<th>445</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Number</td>
<td>51</td>
<td>52</td>
<td>53</td>
<td>54</td>
<td>55</td>
<td>56</td>
<td>57</td>
<td>58</td>
<td>59</td>
<td>60</td>
</tr>
<tr>
<td>Sample Interval (feet)</td>
<td>50</td>
<td>51</td>
<td>52</td>
<td>53</td>
<td>54</td>
<td>55</td>
<td>56</td>
<td>57</td>
<td>58</td>
<td>59</td>
</tr>
<tr>
<td>Breathing Space Measurement (ppm)</td>
<td>60/60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inches Recovered/Inches Cored</td>
<td>3 4 6 1 2 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drilling Rate (min./15 feet)</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coring Rate (min./foot)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Log of Monitoring Well 2-6 (Sheet 7 of 9)

- **57-280-2-01**

- **Equipment**
  - **Taxon 600 16- and 16-end Air Rotary**
  - **Type Rotary**
  - **Date**

- **Sample Core**
  - **CORE RUN NO. 6**
  - **Dark grey (10YR 4/4), moderately hard;**
  - **Deeply to moderately weathered, highly vesicular;**
  - **Close to intensely fractured below 420 feet.**

- **Water table** measured on 524/46 at 415.5 feet below ground surface.

- **Increased drilling resistance** below 388 feet.

- **Increased drilling resistance** below 444 feet.

- **Increased drilling resistance** below 438 feet.

- **Increased drilling resistance** below 433 feet.

- **Increased drilling resistance** below 429 feet.

- **Increased drilling resistance** below 425 feet.

- **Increased drilling resistance** below 421 feet.

- **Decreased drilling resistance** below 420 feet.

- **Decreased drilling resistance** below 415 feet.

- **Decreased drilling resistance** below 410 feet.

- **Decreased drilling resistance** below 405 feet.

- **Decreased drilling resistance** below 400 feet.

- **Reddish brown (5YR 4/4) and light olive brown (2.5Y 5/4), deeply weathered below 430 feet.**

- **Dusky red (5YR 3/2) and very dark greyish brown (10YR 3/2) below 420 feet.**

- **Dark yellowish brown (10YR 4/6) and very dark grey (2.5Y 4/3), moderately to intensely fractured below 420 feet.**

- **Very dark grey (2.5Y 4/3), moderately to intensely fractured below 420 feet.**

- **Highly vesicular below 430 feet.**

- **Moderately to intensely fractured below 420 feet.**

- **Closely fractured.**

- **Increased drilling resistance** below 388 feet.
Texasa 600 16- and
18-inch Bucket Augers/
Air Rotary by Star 150K

<table>
<thead>
<tr>
<th>Sample Interval (feet)</th>
<th>Breather Space Measurement (gpm)</th>
<th>Hole Recovered Inches Cored</th>
<th>Coring Rate (m/ft)</th>
<th>Drilling Rate (m/s)</th>
<th>Sample Number</th>
<th>Sample Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>450-460</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>455</td>
</tr>
<tr>
<td>460-465</td>
<td>26</td>
<td>19</td>
<td></td>
<td></td>
<td>11</td>
<td>465</td>
</tr>
<tr>
<td>465-470</td>
<td>0 60/60</td>
<td>13</td>
<td></td>
<td></td>
<td>19</td>
<td>470</td>
</tr>
<tr>
<td>470-480</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>60</td>
<td>480</td>
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<tr>
<td>480-490</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>61</td>
<td>490</td>
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<tr>
<td>490-500</td>
<td>0</td>
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<td></td>
<td></td>
<td>62</td>
<td>500</td>
</tr>
<tr>
<td>500-510</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>63</td>
<td>510</td>
</tr>
</tbody>
</table>

- Light brown drilling foam return circulation below 454 feet.
- Increased drilling resistance below 464 feet.
- Dark gray (5YR,4/2), closely to moderately fractured, very hard, strong, little weathered to fresh, slightly to moderately vesicular, mineral staining on joint surfaces.
- Dark reddish brown (2.5YR,3/4), deeply weathered, highly vesicular, low to moderate hardness below 470 feet.
- Decreased drilling resistance below 475 feet.
- Decreased drilling resistance below 478 feet.
- Reddish brown drilling foam return circulation below 478 feet.
- Very dark gray (5Y,3/1) and light olive brown (2.5Y,5/4) below 480 feet.
- Increased drilling resistance below 483 feet.
- Decreased drilling resistance below 488 feet.
- Decreased vesicularity below 490 feet.
- Increased drilling resistance below 492 feet.
- Increased drilling resistance below 504 feet.
- Decreased drilling resistance below 518 feet.

Log of Monitoring Well 2-6 (Sheet 8 of 9)
<table>
<thead>
<tr>
<th>Sample Interval (feet)</th>
<th>Breaching Space Measurement (gpm)</th>
<th>Holes Recovered/ Holes Cored</th>
<th>Coring Rate (min./foot)</th>
<th>Drilling Rate (min./3 feet)</th>
<th>Sample Number</th>
<th>Depth (ft)</th>
<th>Sample</th>
<th>Equipment (Ground) Elevation</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>510-520</td>
<td>0</td>
<td>5</td>
<td>64</td>
<td>520</td>
<td></td>
<td></td>
<td></td>
<td>Dark reddish brown (2.5YR,3/4), highly vesicular below 520 feet. Increased drilling resistance below 521 feet. Decreased drilling resistance below 524 feet.</td>
<td>05/11/96</td>
</tr>
<tr>
<td>520-530</td>
<td>0</td>
<td>5</td>
<td>65</td>
<td>530</td>
<td></td>
<td></td>
<td></td>
<td>Increased drilling resistance below 528 feet.</td>
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<tr>
<td>530-540</td>
<td>0</td>
<td>5</td>
<td>66</td>
<td>540</td>
<td></td>
<td></td>
<td></td>
<td>Very dark gray (2.5YR,N3) below 540 feet.</td>
<td></td>
</tr>
<tr>
<td>540-550</td>
<td>0</td>
<td>3</td>
<td>67</td>
<td>550</td>
<td></td>
<td></td>
<td></td>
<td>Moderately to highly vesicular, moderately hard to hard below 550 feet. Increased drilling resistance below 551 feet. Increased drilling resistance below 555 feet.</td>
<td></td>
</tr>
<tr>
<td>550-560</td>
<td>0</td>
<td>6</td>
<td>68</td>
<td>560</td>
<td></td>
<td></td>
<td></td>
<td>Decreased drilling resistance below 558 feet. Dark reddish brown (2.5YR,3/4) below 560 feet. Increased drilling resistance below 563 feet. Decreased drilling resistance below 565 feet.</td>
<td></td>
</tr>
<tr>
<td>560-570</td>
<td>0</td>
<td>4</td>
<td>69</td>
<td>570</td>
<td></td>
<td></td>
<td></td>
<td>Very dark gray (2.5YR,N3), moderately hard to hard, moderately to slightly vesicular below 570 feet. Increased drilling resistance below 572 feet.</td>
<td></td>
</tr>
<tr>
<td>570-575</td>
<td>0</td>
<td>5</td>
<td>70</td>
<td>575</td>
<td></td>
<td></td>
<td></td>
<td>Total depth = 575 feet. Water table was measured at 415.5 feet below ground surface on 5/24/96 at 09:00.</td>
<td></td>
</tr>
</tbody>
</table>

Total depth = 575 feet. Water table was measured at 415.5 feet below ground surface on 5/24/96 at 09:00.
Mr. Jon Fukuda  
United States Army  
DPW, Attn: APVG-GWV, U.S. Army  
Schofield Barracks, Hawaii 96857-5000

Dear Mr. Fukuda:

Well Construction Permit  
MW 2-6 (Well No. 2802-01)

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s). As part of the Chairperson’s approval, the following special conditions were added and are part of your permit under Standard Permit Condition 11:

Special Conditions

1. The requirement for a pumping test in accordance with the Aquifer Pump Testing Procedure is waived.

2. The Chairperson shall approve the pump installation permit upon the permittee’s submittal of the documents and items required under Standard Condition 6.

Please sign the permit copies and return one for our files. Also, copies of the aquifer pump test procedure and the well completion report form are enclosed for your use.

If you have any questions, please call Rae M. Loui, Deputy Director, at 587-0214 or 1-800-468-4644 extension 70214.

Aloha,

Michael D. Wilson  
Chairperson

Enclosures
WELL CONSTRUCTION PERMIT

MW 2-6 Well, Well No. 2802-01

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of MW 2-6 Well (Well No. 2802-01) at Wheeler Army Air Field, Oahu, TMK 7-7-01, subject to the following conditions:

STANDARD PERMIT CONDITIONS

1. The Commission on Water Resource Management, P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work by this permit commences.

2. The well construction permit shall be for construction and testing of the well only. A minimum one-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Commission, to accurately record water levels. The permittee shall coordinate with the Commission and conduct a pumping test in accordance with the attached Aquifer Pump Testing Procedure (attached). The permittee shall submit to the Commission the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Commission.

3. The permittee shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

4. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee shall stop work and contact the Department's Historic Preservation Division (587-0045) immediately.

5. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.

6. The following shall be submitted to the Commission within thirty (30) days after completion of work:
   b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.

7. The permittee shall comply with all applicable laws, rules, and ordinances.

8. The well construction permit application is incorporated into the permit by reference.

9. The permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Commission upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

10. If the well is not to be used it must be properly capped. If the well is to be abandoned then the applicant must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

11. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: 5/9/96
Expiration Date: 5/9/98

MICHAEL D. WILSON, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: __________________________ Date: __________

Printed Name: __________________________ Firm or Title: __________________________

Please sign both copies and return one copy of this permit to the Commission and retain a copy for your record.

Attachment
cc: USGS
Department of Health/ Safe Drinking Water & Wastewater Branches
Honolulu Board of Water Supply
TO: Honorable Lawrence Miike, Director  
Department of Health  
Attention: Dennis Tulang, Wastewater Branch  
William Wong, Safe Drinking Water Branch

FROM: Michael D. Wilson, Chairperson  
Commission on Water Resources Management

SUBJECT: Well Construction/Pump Installation Permit Application for  
MW2-6 Well (Well No. 2802-01)

Transmitted for your review and comment is a copy of a well construction/pump installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by April 29, 1996.

Please find a map, attached, to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Lenore Nakama at 587-0218.

RESPONSE: ✓ We have no comments  
( ) Comments attached

Contact Person: Bill Ding  
Phone: 586-0258

Signed: Bill Ding  
Date: 4/10/96
TO: Honorable Lawrence Miike, Director  
Department of Health  
Attention: Dennis Tulang, Wastewater Branch  
William Wong, Safe Drinking Water Branch  

FROM: Michael D. Wilson, Chairperson  
Commission on Water Resources Management  

SUBJECT: Well Construction/Pump Installation Permit Application for  
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RESPONSE: ☒ We have no comments  
( ) Comments attached  

Contact Person: Lori N. Kajiwara  
Phone: 586-2941  

Signed: Lori N. Kajiwara  
Date: 4-16-96
Mr. Jon Fukuda  
U.S. Army  
DPW, Attn: APVG-GWV, U.S. Army Garrison  
Schofield Barracks, HI 96857-5000  

Dear Mr. Fukuda:

Permit Application for  
MW2-6 Well (Well No. 2802-01)  

We accepted your well construction/pump installation permit application on March 13, 1996, and hereby acknowledge that it is complete. You can expect your application to be processed for action within ninety (90) days from that acceptance date.

We are returning your check for $25.00 because government agencies are not subject to the payment of any fees (§13-171-12(c) HAR).

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,  

RAE M. LOUI  
Deputy Director  

Enclosure
TO: Honorable Lawrence Miike, Director
Department of Health
Attention: Dennis Tulang, Wastewater Branch
William Wong, Safe Drinking Water Branch

FROM: Michael D. Wilson, Chairperson Commission on Water Resources Management

SUBJECT: Well Construction/Pump Installation Permit Application for MW2-6 Well (Well No. 2802-01)

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We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by April 29, 1996.

Please find a map, attached, to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

RESPONSE: ( ) We have no comments
( ) Comments attached

Contact Person: ____________________ Phone: ____________

Signed: ____________________ Date: ____________
To: Mr. Charlie Ice  
Commission on Water Resource Management  
P. O. Box 821  
Honolulu, Hawaii 96809

From: Bruce S. Wedgeworth  
Associate Geologist

Date: March 10, 1996

Subject: Schofield Barracks RI/FS; Schofield Barracks, Oahu, Hawaii

Project Number: 28339 01.01.12

Submitted for your review and approval is an Application for Permit for monitoring well MW 2-6 that will be installed for the Schofield Barracks Remedial Investigation/Feasibility Study (RI/FS) project. The monitoring well will be located southwest of the Gulch Runway at Wheeler Army Air Field. We are conducting this project on behalf of the U.S. Army.

Also enclosed is a check for $25 (for the well application).

If you have any questions, please contact me.

BSW/MWC/rmf

Enclosures: Application for Permit, Well MW 2-6  
Monitoring Well Location Map, Schofield Barracks, Hawaii Quadrangle  
Monitoring Well Location Map, Tax Map Key 7-7  
$25 Check Payment, Harding Lawson Associates
APPLICATION FOR PERMIT

Field Date

Late Acceptance __

Date ___________ ___________

Reserved for Commission Use Only.

REMARKS

METHOD PENDING ACTIONS: OCDUA OSMA DEIS OEA OJ NONE

PROPOSED USE:

QUALITY AND FOR COLLECTING 

PROPOSED WELL LOCATION:

Gulch Runway, Wheeler AAF, Hawaii 96786

ADDRESS:

Contact

Phone

Person

Person

Address

Army 

1082-5856

Roscoe Moss Hawaii, Inc.

682-5856

Tracy Runnels

92-159A Olei St., Kapolei, Hawaii 96707

APPLICANT: (Circle

APPROVED

CONSENT

RECEIVED: Date ___________ ___________

WELL SHALL BE USED FOR MONITORING OF GROUNDWATER

QUALITY AND FOR COLLECTING GROUNDWATER ELEVATION DATA.

Well shall be used for monitoring of groundwater quality and for collecting groundwater elevation data.

Well shall be used for monitoring of groundwater quality and for collecting groundwater elevation data.

(Attach a USGS map, scale 1:"2000", and a property tax map showing well location referenced to established property boundaries.)

EXPLANATIONS:

OF FLOW MEASUREMENT: OF

AMOUNT

WITHDRAWAL: ___

PI Suspension

Abandon

Wells? DYes DNo

Latitude

Longitude

STATE WELL NO.

APPLICANT: (circle primary contact (a), (b), or (c))

Primary Fax: 656-1039

(b) LANDOWNER

U.S. Army

Ph: 656-2878

Schofield Barracks, Garrison

Hawaii 96857-5000

(c) CONTRACTOR

Schofield Barracks, Garrison

Hawaii 96857-5000

(b) LANDOWNER

U.S. Army

Ph: 656-2878

Schofield Barracks, Garrison

Hawaii 96857-5000

(c) CONTRACTOR

Schofield Barracks, Garrison

Hawaii 96857-5000

FirmName

FirmName

SAME AS WELL OWNER

Contact Person

Jon Fukuda

Attn: APYG-GWV, U.S. Army

Address

DPW, Garrison

4. PROPOSED PUMP INFORMATION:

RATED PUMP CAPACITY: 25 gallons per minute

Deep Well Turbine

Rotary

Submersible

Rotary-Displacement

Centrifugal

Rotary-Gear

Impulse

D Electric, rated horsepower: 7.5

If Pump Replacement, Existing Pump Capacity: __

gallons per minute

PUMP TYPE:

Deep Well Turbine (if more space is needed, continue on back)

Motor:

Diesel

Gas

Rated Pump Capacity: __

gallons

per day

(c) METHOD OF FLOW MEASUREMENT:

Flow-meter

Open-Pipe

Office File

Weir

(b) METHOD OF FLOW MEASUREMENT:

Flow-meter

Open-Pipe

Office File

Weir

(c) METHOD OF FLOW MEASUREMENT:

Flow-meter

Open-Pipe

Office File

Weir

APPLICANT: (Circle

APPROVED

CONSENT

RECEIVED: Date ___________ ___________

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(Attach a USGS map, scale 1:"2000", and a property tax map showing well location referenced to established property boundaries.)

EXPLANATIONS:

OF FLOW MEASUREMENT: OF

AMOUNT

WITHDRAWAL: ___

PI Suspension

Abandon

Wells? DYes DNo

Latitude

Longitude

STATE WELL NO.

APPLICANT: (circle primary contact (a), (b), or (c))

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Ph: 656-2878

Schofield Barracks, Garrison

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(c) CONTRACTOR

Schofield Barracks, Garrison

Hawaii 96857-5000

FirmName

FirmName

SAME AS WELL OWNER

Contact Person

Jon Fukuda

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DPW, Garrison

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Open-Pipe

Office File

Weir

(b) METHOD OF FLOW MEASUREMENT:

Flow-meter

Open-Pipe

Office File

Weir

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Flow-meter

Open-Pipe

Office File

Weir

APPLICANT: (Circle

APPROVED

CONSENT

RECEIVED: Date ___________ ___________

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EXPLANATIONS:

OF FLOW MEASUREMENT: OF

AMOUNT

WITHDRAWAL: ___

PI Suspension

Abandon

Wells? DYes DNo

Latitude

Longitude

STATE WELL NO.
9. PROPOSED WELL SECTION

Elevation at top of casing: 691 ft., msl.

Cement Grout: 355 ft.

Bentonite Seal: 10 ft.

Rock Packing: 200 ft.

Hole Diameter: 10 in.

Total Depth: 565 ft.

Ground Elevation: 689 ft., msl.

Solid Casing:
- Material: Carbon steel
- Length: 417 ft.
- Diameter: 6 in.
- Wall thickness: 0.28 in.

Casing: Perforated Screen (louvered)
- Material: Stainless steel
- Length: 150 ft.
- Diameter: 6 in.
- Wall thickness: 0.25 in.
- Openings: 2.4 sq. in./f.t.

Open Hole:
- Length:                  ft.
- Diameter:               in.

*Approximate elevation at time of filing application. Ground elevation above mean sea level (msl) by a surveyor licensed by the State must be submitted at start of construction. Final elevations of well components shall be submitted in the well completion/well abandonment reports.