ISLAND OF KAUA'I

PROJECT AREA

HAENA
HANALEI

Kalalau Lookout

+ Mt. Waialeale

ANAHOLA
HAPAA
WAILUA

ISLAND OF KAUA'I

SCALE IN MILE

NORTH
AS BUILT SECTION

Drilled: June 1983
Driller: Roscoe Moss Co.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER AND LAND DEVELOPMENT

MAKALEUA WELL 0627-04

NOT TO SCALE
Date: 6/27-7/1 1983  Job No. Y-82  Hole No. #1  Elevation: 520 ft.
Customer: Dept. Natural Resources  Location: Mahalua

Driller: Richard Brown  40 Hrs.  Rig: 784
Helper: Earl Chuny  40 Hrs.  Gas:  
Helper:  Hrs.  Oil:  
Arv. Job:  Hrs.  Repairs:  
Lv. Job:  Hrs.  Or. No:  

Bit-Size: Type: 
Depth Start: ft., Depth Stop: ft., Feet Drilled: 
Water Levels, Time: ft., Time: ft., 

<table>
<thead>
<tr>
<th>Depth</th>
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<th>Remarks</th>
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Cleaning up location, handed off junk to 2 days before got dry enough to move rig.

Checked out water table for bored location all cleaned up now except some 14" & 20" pipe.

Remarks: Earl cleaning & painting on rig.

Signed: Richard Brown  Date: 7/1 1983
Date: 6/20/69, Job No.: 1, Hole No.: 1, Elevation: 520 ft.

Customer: Mert "W. Location: Makalani

Driller: Richard Brown, Hours: 40, Rig: 284

Helper: Earl Ching, Hours: 40, Gas: ___, Oil: ___


Bit-Size: ___, Type: ___


Depth Start: ___ ft., Depth Stop: ___ ft., Feet Drilled: ___

Water Levels, Time: M ___ ft., Time: M ___ ft.

### Depth

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Remarks:

- P. E. M. 100 ft. by 100 ft. of 10 ft. by 10 ft. finish
- Shipped out every five days, down by 10 ft.
- R. 500 lbs. down tools, 4 shipped
- All other, 1 1/2" steel, 400 lbs.
- Rented 450 ft. to 100 ft. 3/4" pipe.
- Two from Tool. Maybe got broke on job and had to return same. Rented another from Carpet Dept.

Signed:

Richard Brown, Date: 6/27/69
Date: 6/17/53  

Job No.: 4-58  
Hole No.: #1  
Elevation: 520 ft.

Customer: Dept. Nat. Resources  
Location: Makaha

Driller: Richard Brown  
8 Hrs.  
Rig:  

Helper: Earl Ching  
8 Hrs.  
Gas:  
Oil:  

Helper:  
Hrs.  
Reps.:  

Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:  

Bit-Size:  
Type:  


Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: M  ft., Time: M  ft.

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</tbody>
</table>

Remarks: Shut down test plant recovery until 3 p.m.
Earl doubled back put everything away for weekend
 shut down air, dome, 9 1/2 feet.

Signed: Richard Brown  
Date: 6/17/53
<table>
<thead>
<tr>
<th>Date</th>
<th>6/16 1985</th>
<th>Job No.</th>
<th>4-85</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>520 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natl. Resources</td>
<td>Location</td>
<td>Makaha</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>8 Hrs.</td>
<td>Rig</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper 1</td>
<td>Jerry Brown</td>
<td>8 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Helper 2</td>
<td>Earl Ching</td>
<td>8 Hrs.</td>
<td>Repairs</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

| Bit-Size   |          | Type    |       |          |    |            |        |
| Casing-Size|          | in., Length in hole | ft. | in., Amt. Perforated | ft. | in. |
| Depth Start|          | ft., Depth Stop | ft., Feet Drilled |    |       |        |
| Water Levels, Time | M | ft., Time | M | ft. |    |            |        |

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Test pumping equalized about 31 lbs.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Equalized out about 31 lbs. at 2009 P.M.

Signed: Richard Brown  Date: 6/16 1985
<table>
<thead>
<tr>
<th>Date</th>
<th>6/15 1985</th>
<th>Job No.</th>
<th>4-8E</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>520 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Net</td>
<td>Resource</td>
<td>Location</td>
<td>Makaha</td>
<td></td>
<td></td>
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<tr>
<td>Driller</td>
<td>Richard Bowman</td>
<td>8 Hrs.</td>
<td>Rig</td>
<td></td>
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</tr>
<tr>
<td>Helper</td>
<td>Jerry Bowman</td>
<td>8 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Helper</td>
<td>Earl Chung</td>
<td>8 Hrs.</td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Bit Size</td>
<td></td>
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<tr>
<td>Casing Size</td>
<td>in.</td>
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<td></td>
<td>ft.</td>
<td>in.</td>
<td>Amt. Perforated</td>
<td>ft. in.</td>
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<tr>
<td>Depth Start</td>
<td>ft.</td>
<td></td>
<td></td>
<td>ft.</td>
<td></td>
<td>Feet Drilled</td>
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<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft.</td>
<td>Time</td>
<td>M</td>
<td>ft.</td>
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<tr>
<td>Measurements</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>Test pumping, trying to equalize</td>
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<tr>
<td></td>
<td></td>
<td>About 32 lbs.</td>
<td></td>
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Signed: Richard Bowman  Date: 6/15 1985
**DRILLING LOG**

Ruscoe Moss Company

830 Ahua Street • Honolulu, Hawaii 96819
Telephone (808) 839-6888 • 833-1444

Date: 6/14 1983  Job No.: 7-82  Hole No.: #1  Elevation: 540 ft.

Customer: Dept. Nat - Barlow  Location: Makaha

Driller: Richard Bowman  8 Hrs.  Rig:

Helper: Jerry Bowman  8 Hrs.  Gas:

Helper: Carl Chung  5 Hrs.  Oil:


Bit-Size: Type:  


Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Water Levels, Time: M ft., Time: M ft.: 

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Feet pumping air line still</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Dropping</td>
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Remarks: Well still drawing down slow.

Signed: Richard Bowman  Date: 6/14 1983
Date: 6/13 1983  Job No.: 4-82  Hole No.: #1  Elevation: 520 ft.
Customer: Dept.  No.:  Acme Inc.  Location: Makaha

Driller: Richard Bourne  8 Hrs.  Rig: 284
Helper: Jerry Bourn  8 Hrs.  Gas:  Oil
Helper: Earl Chung  8 Hrs.  Repairs: —

Bit-Size: —  Type: —
Depth Start: — ft., Depth Stop: — ft., Feet Drilled: —

Depth

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Top</th>
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<tbody>
<tr>
<td>Started that pumping</td>
<td>—</td>
</tr>
<tr>
<td>7PM</td>
<td>83</td>
</tr>
<tr>
<td>8PM</td>
<td>—</td>
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</tbody>
</table>

Remarks: Well was drawn down steadily all day.

Signed: Richard Bourne  Date: 6/13 1983
Date: 6/10/53  
Job No: 4-52  
Hole No: #1  
Elevation: 520 ft.

Customer: Dept. Natural Resources  
Location: Wahiawa

Driller: Richard Bourn  
3 Hrs.  
Rig: 284

Helper: Earl Ching  
3 Hrs.  
Gas:  
Oil:

Arv. Job:  
Lv. Job:  
Hrs.  
Repairs:  
Or. No.:  

Bit-Size:  
Type:  


Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.  

Measurements:

<table>
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<tr>
<th>Depth</th>
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Remarks: Worked on lights on truck to get ready for inspection. Toile lights need to be replaced.

Extra time worked during test added on today.

Signed:  
Date: 19 __
<table>
<thead>
<tr>
<th>Date</th>
<th>6/7 1983</th>
<th>Job No.</th>
<th>4-8E</th>
<th>Hole No.</th>
<th>1</th>
<th>Elevation</th>
<th>580 ft.</th>
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<tbody>
<tr>
<td>Customer</td>
<td>Dept Natural Resources</td>
<td>Location</td>
<td>Molokai</td>
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<tr>
<td>Driller</td>
<td>Richard Bowm</td>
<td>8 Hrs.</td>
<td>Rig</td>
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<tr>
<td>Helper</td>
<td>Earl Cling</td>
<td>8 Hrs.</td>
<td>Gas</td>
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<tr>
<td>Helper</td>
<td></td>
<td>Hrs.</td>
<td>Oil</td>
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<tr>
<td>Arv. Job</td>
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<td></td>
<td>Repairs</td>
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<tr>
<td>Lv. Job</td>
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<td>Or. No.</td>
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<th>Bit-Size</th>
<th>Type</th>
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<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft., Depth Stop</th>
<th>ft., Feet Drilled</th>
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<thead>
<tr>
<th>Water Levels, Time</th>
<th>M.</th>
<th>ft., Time</th>
<th>M.</th>
<th>ft.</th>
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### Remarks:
- Check air line again & check return pulled out air line again. Reamed things for early week end for state.
- Well back to normal by morning to start pumping. Clean more on rig.

Signed: Richard Bowm  Date: 6/7 1983
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 838-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>6/8 1983</th>
<th>Job No.</th>
<th>4-83</th>
<th>Hole No.</th>
<th>4-1</th>
<th>Elevation</th>
<th>520 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Location</td>
<td>Makaha</td>
</tr>
</tbody>
</table>

| Driller    | Richard Brown | 8 Hrs. | Rig | 284     |
|Helper      | Earl Ching   | 8 Hrs. |     | Oil     |
|Arv Job     |              |        |     | Repairs |
|Lv Job      |              |        |     |          |

| Bit-Size   |             | Type   |     |          |
|Casing-Size |             |        |     |          |

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>Ft.</th>
<th>Depth Stop</th>
<th>Ft.</th>
<th>Feet Drilled</th>
<th></th>
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</table>

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<thead>
<tr>
<th>Water Levels, Time</th>
<th>M ft.</th>
<th>Time</th>
<th>M ft.</th>
<th></th>
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</thead>
</table>

**Depth**

<table>
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</tbody>
</table>

*Worked running test pump boring*

*Ada line when ran trouble down - doing cleaning on rig while doing so.*

**Remarks:**

Still not able to stab on Bow down - Check Bow Down late hours.

Signed Richard Brown Date 6/8 1983
**Drilling Log**

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819

Telephone (808) 839-6885 • 833-1444

---

**Date**: 6/7/1983  
**Job No.**: 4-86  
**Hole No.**: #1  
**Elevation**: 520 ft.

**Customer**: Dept Nat Resources  
**Location**: Makalii

**Driller**: Richard Bourn  
**Hours**: 8 Hrs.  
**Rig**: 281

**Helper**: Earl Ching  
**Hours**: 8 Hrs.

**Arv. Job**:  
**Lv. Job**:  
**Hrs.**:  
**Or. No.**: 

**Bit-Size**:  
**Type**:  

**Casing-Size**: in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start**: ft., Depth Stop ft., Feet Drilled

**Water Levels**, Time M ft., Time M ft.

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**Depth** | **Formation** | **Remarks** | **Top**
---|---|---|---

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- **Remarks**:"
  - Blow test, pump 8 hrs. changing.
  - Length of air line 3 times.

- **Signed**: Richard Bourn  
**Date**: 6/7/1983
Date: 6/6 1983  
Job No.: 4-82  
Hole No.: #1  
Elevation: 520 ft.

Customer: Dept. Nat. Resources  
Location: Malakina

Driller: Richard Bourn  
Hrs.: 8  
Rig: 284

Helper: Earl Ching  
Hrs.: 8

Arv. Job:  
Lv. Job:  
Or. No.:  
Reps.:  
Hrs.:  

Bit-Size:  
Type:  


Depth Start: ft., Depth Stop: ft., Feet Drilled:___________

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Run test pump from 100 to 3009 ft.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consult same drain down if muddy.</td>
<td></td>
</tr>
</tbody>
</table>

Signed: Richard Bourn  
Date: 6/6 1983
## DRILLING LOG

**Customer:** Dept. Natural Resources  
**Location:** Hilo, Hawaii  
**Driller:** Michael Brown  
**Helper:** J. Jones  
**Arv. Job:**  
**Lv. Job:**  
**Reps.:**  
**Bit Size:**  
**Type:**  
**Casing Size:** in., Length in hole ft., Amt. Perforated ft.  
**Depth Start:** ft., Depth Stop ft., Feet Drilled ft.  
**Water Levels:** M ft., Time M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**Remarks:**

- Set up and check pump seat
- Start at 5:00 a.m., end 5:00 p.m.
- End at 7:00 a.m.
- 10.6 ft.
- 12.6 ft.
- 30.0 ft.
- 11.0 ft.
- 10.0 ft.
- 11.0 ft.

**Signed:** Michael Brown  
**Date:** 6/3/1983
**Date:** 6/3/55  
**Job No.:** 7-8-5  
**Hole No.:** 41  
**Elevation:** 326 ft.

**Customer:** Dept. Natural Resources  
**Location:** Makaliihi

**Driller:** Richard Brown  
**Hrs.:** 5  
**Rig:** 284

**Helper:** Jerry Brown  
**Hrs.:** 3  
**Gas:** OIl

**Earl Lewis**  
**Hrs.:** 3  
**Repairs:**

**Arv. Job:**  
**Lv. Job:**

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
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<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>Length in hole</th>
<th>Amt. Perforated</th>
<th>ft.</th>
<th>in.</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Level</th>
<th>Time</th>
<th>M ft</th>
<th>Time</th>
<th>M ft</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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<td></td>
</tr>
</tbody>
</table>

**Remarks:**

After 10 ft. pump test cleared and set 250 gpm at 50 rpm and 250 gpm.

Alarmed down 1 pump 4 ft. from 100 ft.

250 gpm pump cut down to 8726.

On 10 ft.

**Remarks:**

Now done steady give down all time in pumping. Letter on Copy of Test.

**Signed:** Richard Brown  
**Date:** 6/3/55
<table>
<thead>
<tr>
<th>Date</th>
<th>6/11 1983</th>
<th>Job No.</th>
<th>7-32</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>520 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept: Natural Resources</td>
<td>Location</td>
<td>Waikele</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Hrs.</td>
<td>5</td>
<td>Rig</td>
<td>282</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Jerry Brown</td>
<td>Hrs.</td>
<td>5</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Cherry</td>
<td>Hrs.</td>
<td>5</td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td>-</td>
<td>Lv. Job</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Hrs.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Or. No.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Bit-Size | - | Type | - |
| Depth Start | - | ft., Depth Stop | - | ft. | Feet Drilled | - |
| Water Levels, Time | M | ft. | - | ft. | M | ft. | - |

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

**Measurements**

**Remarks:**
- Setting up pumping of pump. Test started.
- Pumps cleared well for 2 min.

**Signed:** Richard Brown  Date: 6/11 1983
Date 5/31 1953 Job No. #8 Hole No. #1 Elevation 520 ft.
Customer Dept. Natural Resources Location Makokola

Driller Richard Brown 5 Hrs. Rig 286
Helper Earl Ohio 5 Hrs. Gas Oil
Helper Jerry Brown 5 Hrs. Repairs

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Remarks: Pumping 1 day 1st pump 7.1 3/4
1 (Feb) 1st meter 354 Total pump

Signed Richard Brown Date 5/31 1953
## DRILLING LOG

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819  
TELEPHONE (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>5/26 1953</th>
<th>Job No.</th>
<th>4-53</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>520 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Makaha</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Jerry Brown</td>
<td>Hrs.</td>
<td>5</td>
<td>Rig</td>
<td>254</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Cling</td>
<td>Hrs.</td>
<td>8</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Joe Newhart</td>
<td>Hrs.</td>
<td>5</td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td>Hrs.</td>
<td></td>
<td>Or. No.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size**: 14 in.  
**Type**:  

**Casing-Size**: 14 in.  
**Length in hole**: 541 ft.  
**Depth Start**: 755 ft.  
**Depth Stop**: 753 ft.  
**Feet Drilled**: 8

**Water Levels, Time**: M ft., Time M ft., M ft.  

### Depth Formation Remarks  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>735</td>
<td>Blue Gray Clay</td>
<td>Perfor. completed</td>
</tr>
<tr>
<td>1443</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks**:  

Labor Company asked to go on with out pipe  

**Signed**: Richard Brown  
**Date**: 5/26 1953
Date: 5/19 1953  Job No.: 4-59  Hole No.: #1  Elevation: 5,361 ft.

Customer: Dept. Natural Resources  Location: Makalapa


Bit-Size: 14"  Type: N/A
Depth Start: 70'  ft., Depth Stop: 725'  ft., Feet Drilled: 30

Water Levels, Time: M  ft., Time: M  ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>125'</td>
<td>Compliments</td>
<td>Compliments</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Hot load well battened spoke but soon cut oil off but strikes down hard.

Signed: Richard Brown  Date: 5/19 1953
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>142</td>
<td>Brown Clay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>253</td>
<td>Some Complaint</td>
<td>Damaged Rock</td>
<td></td>
</tr>
</tbody>
</table>


Signed: Richard Brown  Date: 5/18 1983
Date: 5/17 1953  
Job No.: 7-52  
Hole No.: #1  
Elevation: 520 ft.

Customer: Dept. Mat. - Honolulu  
Location: Makaha

Driller: Richard Browne  
Time: 8 Hrs.  
Rig: 284

Helper: Earl Clark  
Time: 8 Hrs.  
Gas:  
Oil:  
Repairs:  

Arv. Job:  
Lv. Job:  
Or. No.:  

Bit Size: 14 in.  
Type: Iron

Casing Size: 6 1/2 in.  
Length in hole: 566 ft.  
Amt. Perforated:  
in.

Depth Start: 683 ft.  
Depth Stop: 692 ft.  
Feet Drilled: 9 ft.

Water Levels, Time:  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>683</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>687</td>
<td>Clay Sand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>689</td>
<td>Chalk Clay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>691</td>
<td>Chalk Clay</td>
<td>Stuck at the bottom of the hole.</td>
<td></td>
</tr>
<tr>
<td>692</td>
<td>Shiny, Sticky</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:  
Slow speed on bit to help keep from sticking to bottom.  

Signed: Richard Browne  
Date: 5/17 1953
Date: 5/16/83  
Job No.: 7-82  
Hole No.: #1  
Elevation: 520 ft.

Location: Makaihe.

Driller: Jesse Brown  
8 Hrs.  
Rig: 286  
Gas: Oil

Helper: Earl Claing  
8 Hrs.  
Repairs

Arv. Job:  
Lv. Job:  
Or. No.:  

Bit-Size: 14  
Type: Bit

Casing-Size: 14" in.  
Length in hole: 562 ft.  
Amt. Perforated:  

Depth Start: 673 ft.  
Depth Stop: 683 ft.  
Feet Drilled: 10

Water Levels: Time: M  
ft., Time: M  
ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>673</td>
<td>Clays</td>
<td>casing dome</td>
<td></td>
</tr>
<tr>
<td>683</td>
<td>Clay</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Not much wear on bit now only stuck up cutting edge.

Signed: Richard Brown  
Date: 5/16/83
Date: 5/14 1983  
Job No.: 4-83  
Hole No.: #1  
Elevation: 520 ft.

Customer: Dept. Natural Resources  
Location: Makaha

Driller: Earl Chung  
Helper: Jerry Bunn

Rig: 284  
Gas:  
Oil:  
Repairs:  

Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:  

Bit-Size: 14"  
Type:  

Casing-Size: 14" in., Length in hole: 560 ft.  
Amt. Perforated: ft. in.

Depth Start: 665 ft., Depth Stop: 673 ft., Feet Drilled: 8 ft

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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<tbody>
<tr>
<td>665</td>
<td>665</td>
<td></td>
<td></td>
</tr>
<tr>
<td>673</td>
<td>673</td>
<td>Drilling got so hard now.</td>
<td></td>
</tr>
</tbody>
</table>

Water Levels:  

Still checking for Turkey up but we're close.

Signed: Richard Bunn  
Date: 5/14 1983
### Drilling Log

**Customer:** Natural Resources  
**Location:** Makaha

**Driller:** Earl Ching  
**Helper:** Jerry Brown  
**Helper:** Joe Wainapu

**Date:** 5/13/83

**Hole No.:** #1  
**Elevation:** 520 ft.

**Bit-Size:** 14"  

**Depth Start:** 656 ft., Depth Stop:** 665 ft., Feet Drilled 9

**Water Levels:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formations</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>556</td>
<td>Blue Porte</td>
<td></td>
</tr>
<tr>
<td>660</td>
<td>Very very Hard</td>
<td>Some brown Brown</td>
</tr>
</tbody>
</table>

**Remarks:** Working on bit, may have worn out so much later.

**Signed:** Richard Brown  
**Date:** 5/13/83
**Date:** 5/11 19 83  
**Job No:** 4-52  
**Hole No:** #1  
**Elevation:** 550 ft.

**Customer:**  
**Dept:** Natural  
**Location:** Makolua

**Driller:** Earl Cliney  
**Rig:** 28-L  
**Helper:** Jerry Brown  
**Gas:**  
**Oil:**  
**Reps:**  
**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**

**Bit-Size:** 14"  
**Type:** Hr.

**Casing-Size:** 14" in., Length in hole 5  
**in., Amt. Perforated:** in.

**Depth Start:** 650 ft., Depth Stop 656 ft., Feet Drilled 6

**Water Levels, Time:** M ft., Time M ft.

**Formation:**  
**Remarks:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>650</th>
<th>Blue Rock</th>
</tr>
</thead>
</table>

**Remarks:** Welding on bit every 30 minutes spend lot of time on twelve.

**Signed:** Richard Brown  
**Date:** 5/11 19 83
Date: 5/10 1953  
Job No.: 7-82  
Hole No.: #1  
Elevation: 520 ft.

Customer: Dept Natural Resources  
Location: Makaha

Driller: Earl Chey  
8 Hrs.  
Rig: L8L

Helper: Jerry Bourn  
8 Hrs.  
Gas:  
Oil:

Helper: Joe Diligent  
8 Hrs.  
Repairs:

Arv. Job:  
Lv. Job:  
Hrs.  
Or. No.  

Bit-Size: 14"  
Type:  

Casing-Size: 14" in., Length in hole: 7 ft.  
Amt. Perforated: 1 ft.  

Depth Start: 645 ft., Depth Stop: 650 ft., Feet Drilled: 5

Water Levels, Time: M ft., Time: M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>645</td>
<td>Blue Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>Very Hard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Holding on bit every 20 minutes then mic. Rope Puller.

Signed: Richard Bourn  
Date: 5/10 1953
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>441</td>
<td>Blue Poth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>443</td>
<td>very very Hard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Setting on bit every 20 minutes on cement. Time up bit 10 ft.

Pan shown all day.

Signed Richard Brown  Date 5/9 1983
<table>
<thead>
<tr>
<th>Date</th>
<th>5/6 1955</th>
<th>Job No.</th>
<th>7-5e</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>526 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Makaha</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Jerry Brown</td>
<td>Hrs.</td>
<td>5</td>
<td>Rig</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Olway</td>
<td>Hrs.</td>
<td>5</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Dick Hinton</td>
<td>Hrs.</td>
<td>5</td>
<td>Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td>Hrs.</td>
<td></td>
<td>Or. No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
<td>Hrs.</td>
<td></td>
<td>Or. No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>14&quot;</td>
<td>Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>14&quot; in.</td>
<td>Length in hole</td>
<td>566 ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>637 ft.</td>
<td>Depth Stop</td>
<td>671 ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Feet Drilled</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels</td>
<td>6:10 AM</td>
<td>Time</td>
<td>45 ft.</td>
<td>12:30 AM</td>
<td>44 ft.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>637</td>
<td>Clay loam</td>
<td>9:00 AM</td>
<td></td>
</tr>
<tr>
<td>671</td>
<td>Very Hard</td>
<td>9:30 AM</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Tot of bit work over rain today, hole clay 26 minutes, above water table, o ring under bit drilling.

Signed: Richard Brown | Date: 5/6 1955
**DRILLING LOG**

RUSCOE MOSS COMPANY

830 AHUA STREET • HONOLULU, HAWAII 96818
TELEPHONE (808) 839-6888 • 833-1444

---

**Date** 5/5 1983  **Job No.** #4-82  **Hole No.** #1  **Elevation** 580 ft.

**Customer:** Dept. Natural Resources  **Location:** Makaha

**Driller:** Jerry Brown  8 Hrs.  **Rig:** 284

**Helper:** Earl China  8 Hrs.  **Gas:**  **Oil:**

**Helper:** Dick Whitney  8 Hrs.  **Repairs:**

**Arv. Job:**  **Lv. Job:**  **Hrs.**  **Or. No.:**

---

**Bit-Size:** 14"  **Type:**

**Casing-Size:** 14" in., Length in hole 562 ft. in., Amt. Perforated ft. in.

**Depth Start:** 634 ft., Depth Stop 637 ft., Feet Drilled 3

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>634</td>
<td>Blue Rock Bivry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>637</td>
<td>sandy grit hard</td>
<td><strong>Tire up bit took most</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Shut to fix new bore</strong></td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:**

---

**Signed:** Richard Brown  **Date:** 5/5 1983
Date: 5/4/1953  
Job No.: 4-82  
Hole No.: #1  
Elevation: 546 ft.

Customer: Dept. Nat. Resources  
Location: Wahiawa

Driller: Jerry Brown  
8 Hrs.  
Rig: 284

Helper: Earl Cheung  
8 Hrs.  
Gas: Oil

Helper: Dick Whittry  
8 Hrs.  
Repairs

Arv. Job:  
Lv. Job:  
Or. No.:  

Bit-Size: 14  
Type: L1

Casing-Size: 14 in.  
Length in hole: 56 ft.  
Amt. Perforated:  

Depth Start: 624 ft.  
Depth Stop: 687 ft.  
Feet Drilled: 63 ft.

Water Levels, Time (M):  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>624</td>
<td>Blue Rock</td>
<td>Some broken, same as</td>
<td></td>
</tr>
<tr>
<td>637</td>
<td>Mey Hard.</td>
<td>Small.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Spend most of time welding on bit between 8 a.m. and 12 noon. Richard Davis might & boy shift.

Signed: Richard Brown  
Date: 5/4/1953
<table>
<thead>
<tr>
<th>Date</th>
<th>5/3 1983</th>
<th>Job No.</th>
<th>4-52</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>520 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept Nat. Resoures</td>
<td>Location</td>
<td>Makaha</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Henry Brown</td>
<td>Hrs.</td>
<td>Rig</td>
<td>L8L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>East Chung</td>
<td>Hrs.</td>
<td>Gas.</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Dick Wilton</td>
<td>Hrs.</td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>1-1/2 in.</td>
<td>Type</td>
<td>1-1/2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>1-1/2 in., Length in hole</td>
<td>56 ft.</td>
<td>Amt. Perforated</td>
<td>ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>613 ft.</td>
<td>Depth Stop</td>
<td>628 ft.</td>
<td>Feet Drilled</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M ft.</td>
<td>Time</td>
<td>M ft.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>613</td>
<td>Blue Rock</td>
<td>Leaking up bit on</td>
<td></td>
</tr>
<tr>
<td>624</td>
<td>Very Hard</td>
<td>Both Shifters building</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Progress very slow, can't lift cyclind off bottom. Also had batter bar seems to be getting harder.

Signed: Richard Brown | Date: 5/3 1983
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>5/2 1983</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>4-S-8.6</td>
</tr>
<tr>
<td>Hole No.</td>
<td>#1</td>
</tr>
<tr>
<td>Elevation</td>
<td>520 ft.</td>
</tr>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
</tr>
<tr>
<td>Location</td>
<td>Mahalo</td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
</tr>
<tr>
<td>Hrs. Rig</td>
<td>28</td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Chung</td>
</tr>
<tr>
<td>Hrs. Gas</td>
<td>8</td>
</tr>
<tr>
<td>Helper</td>
<td>Jerry Brown</td>
</tr>
<tr>
<td>Hrs. Oil</td>
<td>8</td>
</tr>
<tr>
<td>Arv. Job</td>
<td>Dick. Circuit</td>
</tr>
<tr>
<td>Hrs. Repairs</td>
<td>8</td>
</tr>
<tr>
<td>Or. No.</td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>14</td>
</tr>
<tr>
<td>Type</td>
<td>14</td>
</tr>
<tr>
<td>Casing-Size</td>
<td>14 in.</td>
</tr>
<tr>
<td>Length in hole</td>
<td>562 ft.</td>
</tr>
<tr>
<td>in. Amt. Perforated</td>
<td>ft.</td>
</tr>
<tr>
<td>Depth Start</td>
<td>603 ft.</td>
</tr>
<tr>
<td>Depth Stop</td>
<td>613 ft.</td>
</tr>
<tr>
<td>Feet Drilled</td>
<td>10</td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M ft.</td>
</tr>
<tr>
<td>M ft. Time</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>603</td>
<td>Blue Rock</td>
<td></td>
</tr>
<tr>
<td>613</td>
<td>Key Hart</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: 
Rainy both shifts progress very slow. Lots of wet work.

Signed: Richard Brown Date 5/2 1983
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 838-6888 • 833-1444

---

**Date:** 4/29/53  
**Job No.:** 4-52  
**Hole No.:** #1  
**Elevation:** 320 ft.  

**Customer:** Dept.  
**Note:** Reserves  
**Location:** Makaha  

---

**Driller:** Richard Brown  
**Hours:** 8  
**Rig No.:** 286  

**Helper:** Carl Clish  
**Hours:** 8  
**Gas:**  

**Helper:** Dick Ankley  
**Hours:** 8  
**Oil:**  

**Arv. Job:**  
**Lv. Job:**  
**Or. No.:**  

---

**Bit-Size:** 1  
**Type:**  

**Casing-Size:** 14  
**in., Length in hole:** 320 ft.  
**in., Amt. Perforated:**  
**ft. in.**  

**Depth Start:** 572 ft.  
**Depth Stop:** 603 ft.  
**Feet Drilled:** 31 ft.  

**Water Levels, Time:**  
**M ft., Time:**  
**M ft.,**  

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>572 ft.</td>
<td>Blue Rock</td>
<td>14' Repair on</td>
<td>Hit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


---

**Signed:** Richard Brown  
**Date:** 5/4/53  

---

---
### Drilling Log

**Date:** 4/28/1953  
**Job No.:** 4-52  
**Hole No.:** #1  
**Elevation:** 530 ft.

**Customer:** Dept.-Nat.-Revenue  
**Location:** Makaha

**Driller:** Jesse Brown  
**Hrs.:** 8  
**Rig:** 28-L

**Helper:** Earl Ching  
**Hrs.:** 8  
**Gas:** Oil

**Remarks:** Hard - Hole broke  
**Damage to bit drilling**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>584</td>
<td>Blue Rock</td>
<td>Custom drilling</td>
<td></td>
</tr>
<tr>
<td>471</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>581</td>
<td>Blue Rock</td>
<td>Smooth</td>
<td></td>
</tr>
<tr>
<td>472</td>
<td></td>
<td>Dropped Cuttings.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Has worn Holmen Solar.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**  
- Have to repair bit quite often
- First month will dry feet. Earl shipped water  
- Leaked to them - picked up fuel & supplies.

**Signed:** Richard Brown  
**Date:** 8/28/1953
**DRILLING LOG**

**Date:** 4/27 1983  
**Job No.:** 4-52  
**Hole No.:** 111  
**Elevation:** 520 ft.

**Customer:**  
**Driller:** John Brown  
**Helper:** East Church  
**Location:** Hikalau

**Rig:** 251  
**Gas:**  
**Oil:**  
**Repairs:**

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>1Fe</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>Length in hole</th>
<th>Amt. Perforated</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14 in.</td>
<td>560 ft.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>560 ft.</td>
<td>575 ft.</td>
<td>16</td>
</tr>
</tbody>
</table>

**Water Levels, Time:** M ft., Time M ft.,

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>560</td>
<td>Clay &amp; Rock Composi</td>
<td></td>
</tr>
<tr>
<td>575</td>
<td>Stickies</td>
<td></td>
</tr>
<tr>
<td>580</td>
<td>Brown Slur looks like Chalkie</td>
<td></td>
</tr>
<tr>
<td>580</td>
<td>Doing some damage to bit.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Doing some damage to bit on bottom of bit also gauge is worn.

**Signed:** Richard Brown  
**Date:** 4/27 1983
<table>
<thead>
<tr>
<th>Date</th>
<th>4/26/83</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>4-58</td>
</tr>
<tr>
<td>Hole No.</td>
<td>#4</td>
</tr>
<tr>
<td>Elevation</td>
<td>520 ft.</td>
</tr>
<tr>
<td>Location</td>
<td>Wai'ale</td>
</tr>
<tr>
<td>Driller</td>
<td>Jerry Browne</td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Cherry</td>
</tr>
<tr>
<td>Helper</td>
<td>Dick Valahey</td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
</tr>
<tr>
<td>Hrs.</td>
<td>8</td>
</tr>
<tr>
<td>Rig</td>
<td>254</td>
</tr>
<tr>
<td>Gas</td>
<td></td>
</tr>
<tr>
<td>Oil</td>
<td></td>
</tr>
<tr>
<td>Repairs</td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td></td>
</tr>
<tr>
<td>Depth Stop</td>
<td></td>
</tr>
<tr>
<td>Foot Drilled</td>
<td></td>
</tr>
<tr>
<td>Water Levels</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>M ft.</td>
<td></td>
</tr>
<tr>
<td>Remarks:</td>
<td>Pullout</td>
</tr>
<tr>
<td></td>
<td>line 4</td>
</tr>
<tr>
<td></td>
<td>Rigid</td>
</tr>
<tr>
<td></td>
<td>Rig</td>
</tr>
<tr>
<td></td>
<td>below</td>
</tr>
<tr>
<td></td>
<td>drill</td>
</tr>
<tr>
<td></td>
<td>started</td>
</tr>
<tr>
<td></td>
<td>drilling</td>
</tr>
<tr>
<td></td>
<td>out</td>
</tr>
<tr>
<td></td>
<td>cement</td>
</tr>
<tr>
<td></td>
<td>Horizon</td>
</tr>
<tr>
<td></td>
<td>10 ft.</td>
</tr>
<tr>
<td></td>
<td>cement</td>
</tr>
<tr>
<td></td>
<td>above</td>
</tr>
<tr>
<td></td>
<td>10 ft.</td>
</tr>
<tr>
<td></td>
<td>cement</td>
</tr>
<tr>
<td></td>
<td>in cement</td>
</tr>
<tr>
<td></td>
<td>in bottom</td>
</tr>
<tr>
<td></td>
<td>Remarks</td>
</tr>
</tbody>
</table>

Signed: Richard Browne
Date: 4/26/83

RUSCOE MOSS COMPANY
830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444
<table>
<thead>
<tr>
<th>Date</th>
<th>4/25 1983</th>
<th>Job No.</th>
<th>4-82</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>520 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Mahai'ula</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Bons</td>
<td>Hrs.</td>
<td>Rig 284</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Jerry Bons</td>
<td>Hrs.</td>
<td>Gas ----- Oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Dick Whitney</td>
<td>Hrs.</td>
<td>Repair ------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Bit-Size |  
| Casing-Size | in., Length in hole | ft. | in., Amt. Perforated | ft. | in. |
| Depth Start | ft., Depth Stop | ft., Feet Drilled |
| Water Levels, Time | M ft., Time | M ft. |

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>East Wood material in eyecontact</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Work Jerry and Whitney came out, equipment to help with pump.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: I stocked up some fighting done all day.

Signed: Richard Bons Date 4/25 1983
### DRILLING LOG

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7/22</td>
<td>7-83</td>
<td>#1</td>
<td>550 ft.</td>
<td></td>
</tr>
</tbody>
</table>

**Customer**

Dept. Natural Resources Location Makakilo

**Driller**

Richard Bourn

Hrs. Rig 286

**Helper**

Earl Ching

8 Hrs. Gas Oil

**Arv. Job**

Lv. Job

**Helper**

Hrs. Repairs

**Bit-Size**

**Type**

**Casing-Size** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start** ft., Depth Stop ft., Feet Drilled

**Water Levels, Time** M ft., Time M ft.

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

**Remarks:**

Broke down 4 second. Engine & motor rebuilt, rods, dry pumps working between 8 & 10 am, horse was running. Pumps and 4 cent hole done, almost dried pump. Second every day for next 25 ft. Earl tried engine to B & S. It picked up and was out about 120 ft.

**Signed**

Richard Bourn

**Date** 7/22 1983
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-8888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>4/26/1983</th>
<th>Job No.</th>
<th>7-84</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>520 ft.</th>
</tr>
</thead>
</table>

**Customer** Dept. Natural Resources  Location: Molokai

**Driller** Richard Brown  Hrs. Rig 284

**Helper** Earl Ching  Hrs. Gas Oil

**Helper**  Hrs. Repairs

**Arv. Job**  Hrs.  Or. No.

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>in., Length in hole</th>
<th>ft.</th>
<th>in., Amt. Perforated</th>
<th>ft.</th>
<th>ln.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft., Depth Stop</th>
<th>ft., Feet Drilled</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft., Time</th>
<th>M</th>
<th>ft.</th>
</tr>
</thead>
</table>

**Depth**

<table>
<thead>
<tr>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

- Waiting on November 1 to make decision on
- Well cleaned up some trash on well site.

**Remarks:** Boring soil good, only worked 4 hours.

**Signed** Richard Brown  Date 4/26/1983
<table>
<thead>
<tr>
<th>Depth</th>
<th>Time</th>
<th>9PM</th>
<th>7PM</th>
<th>Air</th>
<th>9PM</th>
<th>7PM</th>
<th>SWL</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00</td>
<td></td>
<td>100</td>
<td>117</td>
<td></td>
<td>13:06</td>
<td>200</td>
<td>113</td>
<td>134</td>
</tr>
<tr>
<td>9.05</td>
<td>100</td>
<td>127</td>
<td>14:20</td>
<td>200</td>
<td>113</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>9.10</td>
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<tr>
<td>9.15</td>
<td>100</td>
<td>127</td>
<td>1:05</td>
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<tr>
<td>9:20</td>
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<td>9:25</td>
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<td>1:08</td>
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<td>9:30</td>
<td>100</td>
<td>127</td>
<td>1:10</td>
<td>300</td>
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<td>100</td>
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<td>11:00</td>
<td>100</td>
<td>127</td>
<td>1:25</td>
<td>300</td>
<td>100</td>
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<td>11:15</td>
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<td>11:30</td>
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<td>11:35</td>
<td>200</td>
<td>113</td>
<td>1:30</td>
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</tr>
</tbody>
</table>

Remarks: Twad pumping too much & started test at 9:00

Signed: Richard Brown  Date: 4/20  1983
Date: 4/19 1983  Job No.: 7-88  Hole No.: #1  Elevation: 520 ft.

Customer: Dept. Natural Resources  Location: Makiki

Driller: Michael Brown  Hrs. Rig: 284
Helper: Earl Ching  Hrs. Gas: Oil
Helper:  Hrs. Repairs: 

Bit-Size  Type: 
Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Depth  Formation  Remarks  Top

Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

Remarks: Finished up pump cellar in well started up every thing, of pumped well some pulled down, so if 300 ft. but didn't pump to long waiting for them to decide how to pump. Cure tests.

Signed: Michael Brown  Date: 4/19 1983
**DRILLING LOG**

<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>Customer</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/18 1983</td>
<td>4-3</td>
<td>#1</td>
<td>520 ft.</td>
<td>Dept. Nat. Resources</td>
<td>Makalaio</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Helper</th>
<th>Hrs. Rig</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Dawson</td>
<td>Earl Ching</td>
<td>8 Hrs.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs. Repairs</th>
<th>Or. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

<table>
<thead>
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</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>Length in hole</th>
<th>ft.</th>
<th>in., Amt. Perforated</th>
<th>ft.</th>
<th>in.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M ft.</th>
<th>ft., Time</th>
<th>M ft.</th>
</tr>
</thead>
</table>

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Remarks:**

*Henry pump Collins from back & unloked same running
* Hard only got in 6 ft. far & cleaned up more on line
* A tube or string, hole think led on some from 8' more

Signed: Richard Dawson  Date: 4/8 1983
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>4/15 1983</th>
<th>Job No.</th>
<th>4-83</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>550 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept Natural Resources</td>
<td>Location</td>
<td>Makaha</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Bourn</th>
<th>Hrs.</th>
<th>Rig</th>
<th>28L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>8 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td>Hrs.</td>
<td>Repairs</td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
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<tr>
<td>Lv. Job</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>in., Length in hole</th>
<th>ft. in., Amt. Perforated</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
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<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft., Depth Stop</th>
<th>ft., Feet Drilled</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M ft.</th>
<th>Time</th>
<th>M ft.</th>
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</thead>
<tbody>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks: Finished building plating support of rig &amp; got things ready to hand pump. Callum hauled 290 ft. from R.C.C. also some air line. Drew guy wires to have pump in hole &amp; secured things for next end.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signed: Richard Bourn</th>
<th>Date</th>
<th>4/15 1983</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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<th>A</th>
<th>B</th>
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</thead>
</table>
**Drilling Log**

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819

Telephone (808) 839-6888 • 833-1444

---

**Date:** 4/14 1983  
**Job No.:** 4-83  
**Hole No.:** 1  
**Elevation:** 520 ft.

**Customer:** Dept. Natural Resources  
**Location:** Makalapa

**Driller:** Richard Brown  
**Hrs. Rig:** 

**Helper:** Earl Ching  
**8 Hrs. Gas:**  
**Oil:** 

**Helper:**  
**Hrs. Repairs:** 

**Arv. Job:**  
**Lv. Job:**  
**Hrs. Or. No.:**

---

**Bit-Size:**  
**Type:**

**Casing-Size:** in., **Length in hole:** ft., **in., Amt. Perforated:** ft. in.  
**Depth Start:** ft., **Depth Stop:** ft., **Feet Drilled:**

**Water Levels, Time:** M ft., **Time:** M ft.

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<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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**Measurements**

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</tbody>
</table>

**Remarks:** Pumped again this A.M. No good even with big gauge.

---

**Signed:** Richard Brown  
**Date:** 4/14 1983
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

Remarks: picked up his book & finished running part of pump stage almost full mode, getting pickup & other things, gathered my pick up balls & things fair line 10, 08, 15.

Signed Richard Brown       Date 4/11/83

Date 4/11/83  Job No. 4-83  Hole No. #1  Elevation 520 ft.
Customer Dept. Natural Resources  Location Makaha

Driller Richard Brown       Hrs. Rig 28L
Helper Earl Olting          8 Hrs. Gas Oil
Helper                      Hrs. Repairs

Bit-Size Type
Casing-Size in., Length in hole ft. in., Amt. Perforated ft. in.
Depth Start ft., Depth Stop ft., Feet Drilled
Water Levels, Time M ft., Time M ft.,

Measurements

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
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</thead>
</table>
**Drilling Log**

**Customer:** Dept. Natural Resources  
**Location:** Makalii

<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>1983</td>
<td>#1</td>
<td>530 ft</td>
</tr>
</tbody>
</table>

**Driller:** Richard Bunn  
**Hrs. Rig:** 28 hrs

**Helper:** Earl Chung  
**Hrs. Gas:**  
**Hrs. Oil:**  
**Hrs. Repairs:**

**Arr. Job:**  
**Lv. Job:**  
**Hrs. Or. No.:**

**Bit-Size:**  
**Type:**

**Casing-Size:** ___ in., Length in hole ___ ft., Amt. Perforated ___ ft., ___ in.

**Depth Start:** ___ ft., Depth Stop ___ ft., Feet Drilled ___ ft.

**Water Levels, Time:** M ___ ft., Time M ___ ft.

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

*Cleaning pump & unloading*  
*Rest from truck waiting on big load*  
*Went 4get something & dril fuel & oil*  
*So could.run pump.*  
*Got most of pump air in too much water*  
*for small hook got air line all cleaned out.*

**Remarks:**

Signed: Richard Bunn  
Date: 1/8 1983
### DRILLING LOG

**Date:** 4/4/83

**Job No.:** 4/82

**Hole No.:** #1

**Elevation:** 520 ft.

**Client:** Natural Resources

**Location:** Makaha

**Operator:** Richard Brown

**Hrs. Rig:** 287

**Helper:** Earl Chung

**Hrs. Gas:**

**Hrs. Oil:**

**Hrs. Repairs:**

**Arv. Job:**

**Lv. Job:**

**Hrs. Or:**

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
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<tbody>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>Length in hole</th>
<th>ft. in.</th>
<th>Amt. Perforated</th>
<th>ft. in.</th>
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</table>

**Depth Start:**

**Depth Stop:**

**Feet Drilled:**

**Water Levels, Time:** M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Time</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

**Remark:**

- Handled rest of pump to location & rigged up to unlock motor & pump head & also called, got spoilers & 2 joints in.
- Had bad time trying to unload pump.

**Measurements**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**Remarks:**

- Handled rest of pump to location & rigged up to unlock motor & pump head & also called, got spoilers & 2 joints in.
- Had bad time trying to unload pump.

Signed: Richard Brown  Date: 4/7/83
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>picked up part of material from dock</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>had trouble truck &amp; wait for barge to be unloaded. Started to launch &amp; unloaded same. Started to run pump didn't have change.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>own coupling.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Richard Brown  Date  7/6  1983
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET  HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888  833-1444

---

**Date:** 4/5/83  **Job No.:** 4-82  **Hole No.:** #1  **Elevation:** 520 ft.

**Customer:** Dept. Natural Resources  **Location:** Makalaha

**Driller:** Richard Brown  **Hrs.:** Rig 284

**Helper:** Earl Ching  **Hrs.:** Gas Oil

**Arv. Job**  **Lv. Job**  **Hrs.:** Repairs

---

**Bit-Size**

**Casing-Size** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start** ft., Depth Stop ft., Feet Drilled

---

**Water Levels, Time M ft., Time M ft.**

---

**Depth**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Earl cleaned up cement ditch &amp; ledges, around foot on job site at Makalaha, while they clean up with Back Hoe.</td>
</tr>
</tbody>
</table>

---

**Remarks:**

---

**Signed:** Richard Brown  **Date:** 4/5/1983
**Date**: 4/4/83  
**Job No.**: 4-83  
**Hole No.**: #1  
**Elevation**: 520 ft.  
**Customer**: Dept. Natural Resources  
**Location**: Makaha

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hrs.</th>
<th>Rig</th>
<th>Helper</th>
<th>Hrs.</th>
<th>Gas</th>
<th>Oil</th>
<th>Hrs.</th>
<th>Repairs</th>
<th>Or. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Bourne</td>
<td></td>
<td>28L</td>
<td>Earl Ching</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Arv. Job**:  
**Lv. Job**:  
**Hrs. Repairs**:  
**Or. No.**:  

**Bit-Size**:  
**Type**:  

**Casing-Size**: in., **Length in hole**: ft., **Amt. Perforated**: ft. in.  

**Depth Start**: ft., **Depth Stop**: ft., **Feet Drilled**:  

**Water Levels, Time**: M ft., **Time**: M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Form.</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>extended pipe on well at Kahana</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>took most all day as had to waste on road</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>build road &amp; sight around well as could</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>get on site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cont. water turned in any time last week.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks**:  

**Signed**: Richard Bourne  
**Date**: 4/4/83
**Drilling Log**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** 3/25 1983  
**Job No.:** H-28  
**Location:** Makalaea  
**Elevation:** 520 ft.

<table>
<thead>
<tr>
<th>Customer</th>
<th>Dept</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Resources</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Helper</th>
<th>Helper</th>
<th>Arv. Job</th>
<th>Lv. Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Browne</td>
<td>Earl Chin</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
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<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
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<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Or. No.</th>
</tr>
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</table>

**Bit-Size**

**Casing-Size**

- Size: in., Length in hole ft., Amt. Perforated ft. in.

**Depth**

- Start ft., Depth Stop ft., Feet Drilled __________

**Water Levels, Time**

- M ft., Time M ft.

---

### Depth Formations

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</table>

- Went to job site & located welder.
- 4 pegs, also hole 4 etc. for Job at Kilauea, spot well casing for hill.
- Can't do job till Monday - accounted!
- Site any way.
- Went 1 repaired fence at Lawai.
- Well site. Everything ready to do job on Monday more.

**Remarks:**

---

**Signed:** Richard Browne  
**Date:** 3/25 1983
Date 3/17 1983  Job No. 4-82  Hole No. #1  Elevation 520 ft.
Customer     Dept Nat. Resources       Location Mokalua
Driller       Richard Bourn  Hrs. 8  Rig 286
Helper        Earl Ching   Hrs. Gas Oil
Helper
Arv. Job  Hrs.  Lv. Job

Bit-Size
Casing-Size in., Length in hole ft. in., Amt. Perforated ft. in.
Depth Start ft., Depth Stop ft., Feet Drilled
Water Levels, Time M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

Time:  Well pulling pump I loaded up
      Every thing took to look to keep to
      Long hot. He seems every thing on job
      as they still God.
      Else get hide up pump truck had to
      Get battery charged I shipped every thing.

Signed Richard Bourn  Date 3/17 1983
Date 3/16 1983  Job No. H-54  Hole No. #1  Elevation 520 ft.
Customer Dept. Nat. Bureau  Location Makaha

Driller Richard Bourn  Hrs. Rig
Helper Earl Chung  9 1/2 Hrs. Gas
Helper  Hrs. Repairs

Bit-Size  Type
Casing-Size  in., Length in hole  ft.  in., Amt. Perforated  ft.  in.
Depth Start  ft., Depth Stop  ft., Feet Drilled

Water Levels, Time  M  ft., Time  M  ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Broke down & started pulling
4" pump got out 300 ft & Engine
4 pump leaked on track.

Remarks:

Signed Richard Bourn  Date 3/16 1983
Date: 3/15 1983  Job No.: 7-83  Hole No.: #1  Elevation: 520 ft.
Customer: Dept.  Nat. Resource  Location: Makaliko

Driller: Richard Brown  Hrs. Rig: 284
Helper: Earl Cherry  Hrs. Gas  Oil


Bit-Size  Type
Casing-Size  in., Length in hole  ft.  in., Amt. Perforated  ft.  in.
Depth Start  ft., Depth Stop  ft., Feet Drilled
Water Levels, Time  M  ft., Time  M  ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Left up pump &amp; run step down test</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>on swell from 20 qpm's to 400 qpm's</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>results are still inside</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Richard Brown  Date: 3/15 1983
**Job 19-83**

Job No.: 4-83  
Hole No.: 1  
Elevation: 530 ft.

**Location:**

**Operator:** Richard Bouton  
Hrs. Rig: 28  
per: Earl Ching  
Hrs. Gas:  
Hrs. Oil:  
Hrs. Repairs:  
Hrs. Or. No.:  

**Drilling, Type, Size, Length:**

- Size:  
- String Start: ft., Depth Stop: ft., Feet Drilled:  
- String Levels, Time Start: M ft., Time Stop: M ft.,  

**Measurements:**

<table>
<thead>
<tr>
<th>Sth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

**Remarks:**

Earl worked for pump dept. all day.

**Date:** 9/14  
1983
Date: 3/13 1983  | Job No.: 4-82  | Hole No.: #1  | Elevation: 520 ft.  
Customer: Dept M Resources  | Location: Makaha  
Driller: Richard Bourn  | Hrs: 9  | Rig: 28L  
Helper: Earl Ching  | Hrs: 9  | Gas:  | Oil:  
Helper:  | Hrs:  | Repairs:  

| Bit-Size:  | Type:  
| Depth Start: ft. | Depth Stop: ft. | Feet Drilled:  
| Water Levels, Time: M ft. | Time: M ft.  

### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Remarks:**

- Waited on job site for pump crew.
- Doing misc. things never came on any thing finally got Earl at 2:30 to take them up to the location nothing else all day lost day on account of pump crew.
- Picked up nipple & things Bowles.
- At air port.

Signed: Richard Bourn  | Date: 3/13 1983
Date: 3/11 1983  
Job No.: 4-82  
Hole No.: #1  
Elevation: 520 ft.

Customer: Dept. Natural Resources  
Location: Makalapa

Driller: Richard Brown  
Hrs.:  
Rig: Gas

Helper: Earl Cluney  
5 Hrs.:  
Oil

Arv. Job:  
Lv. Job:  
Or. No.:  
Hrs.:  
Repairs:  

Bit Size:  
Type:  

Casing Size: in., Length in hole: ft.  
Amt. Perforated: ft.  

Depth Start: ft., Depth Stop: ft., Feet Drilled  

Water Levels, Time: M ft., Time: M ft.  

**Depth** | **Formation** | **Remarks** | **Top** | **A** | **B**  
--- | --- | --- | --- | --- | ---  
|  |  |  |  |  |  

**Remarks:**  

- Shut down at 10:15  
- Start 7:45  
- Again at 7:45  
- 8:00  
- 5:30  
- 9:00  
- 9:30  
- 10:00  
- 10:30  
- 11:00  

- Pumping too fast in  
- Hooked up  
- 200 rpm -  
- SWL 164  
- 207  
- 207  
- 209  
- 207  
- 209  
- 207  
- 209  
- 207  

- Water takes about 37 parts per mill  
- Put everything away for week end  
- Earl changing fuel  
- Then I got sleepy for night watch  

Signed: Richard Brown  
Date: 3/11 1983
Date 3/10 1983 Job No. 7-85 Hole No. H Elevation 530 ft.  

Customer Dept Natural Reinnce Location Mokala

Driller Richard Brown Hrs. Rig

Helper Earl Obrey Hrs. Gas Oil


Bit Size Type

Casing Size in. Length in hole ft. Amt Perforated ft. in.

Depth Start ft. Depth Stop ft. Feet Drilled

Water Levels Time M ft Time M ft

Depth

Formation Remarks

A  B

Well Sbc 4 1/8 slv pump, incl. borece
Started pumping well at 10:30 pm
Let 3" floor back, no water supply.
Start Swl 18'

10:00 Start - 80 pm - 165' Downcra mnt - almost constantly
10:30 130 9 pm - 190'
11:00 130 9 pm - 202
11:30 135 9 pm - 202 - Pump duty
12:30 120 9 pm - 202 - Water flowmg 160 gpm 3/4" pipe
12:30 130 9 pm - 202

13:00 130 9 pm - 202
13:30 160 9 pm - 202
14:00 160 9 pm - 202
14:30 160 9 pm - 202

Start down pump constant running 165' - change 0 to 164'

Remarks: Cleaned up pit away every thing is don't steal at night incl. hijacks 4 horses.

Signed Richard Brown Date 3/10 1983
### Drilling Log

**Date:** 3/9 1933  
**Job No.:** 4-82  
**Hole No.:** #1  
**Elevation:** 520 ft.

**Customer:** Dept. Nat. Resources  
**Location:** Makalapa

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hrs.</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Brown</td>
<td>6</td>
<td>25L</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earl Chung</td>
<td>8</td>
<td></td>
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<tr>
<th>Bit-Size</th>
<th>Type</th>
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<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft.</th>
<th>Depth Stop</th>
<th>ft.</th>
<th>Feet Drilled</th>
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</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>M</th>
</tr>
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<tbody>
<tr>
<td></td>
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</table>

### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
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<td></td>
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</table>

### Remarks:

Terminated on pump #7; pump blow; then head parted several times on head short; tried to get unit out; big way to make; set up pump & headed out for home.

Signed: Richard Brown  
**Date:** 3/9 1933
Date 3/8 1983 Job No. 4-83 Hole No. #1 Elevation 520 ft.

Driller Richard Brown Hrs. Rig 286
Helper Earl Ching 8 Hrs. Gas

Arr. Job 8:45 Am. Lv. Job 3:45 P.M. Hrs. Repairs

Tool Size Type

A B

Depth Formation Remarks

Bore all the rest of 4" pump but
40 ft hard load time with some breaking

Drilling depth down on way 4 some other

Marks: Bowen water supply cleaning up mud pit around tank.

Sign: Richard Brown Date 3/8 1983
<table>
<thead>
<tr>
<th>Date</th>
<th>3/7/83</th>
<th>Job No.</th>
<th>4-83</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>520 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Mat. Reservoir</td>
<td>Location</td>
<td>Makaha</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Hrs.</td>
<td>Rig</td>
<td>284</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Helper</td>
<td>Earl Chung</td>
<td>Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
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<tr>
<td>Arv. Job</td>
<td></td>
<td>Hrs.</td>
<td></td>
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<tr>
<td>Lv. Job</td>
<td></td>
<td>Hrs.</td>
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<th>Bit-Size</th>
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<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>in., Length in hole</th>
<th>ft. in., Amt. Perforated</th>
<th>ft. in.</th>
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<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft., Depth Stop</th>
<th>ft., Feet Drilled</th>
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</thead>
<tbody>
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</table>

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<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft., Time</th>
<th>M</th>
<th>ft.</th>
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<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
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<tbody>
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</table>

|        |           |         |     |
|        |           |         |     |

marks: Setup at 1st & cut off casing & started pump at 100 ft. Helix went out 10 ft. Angle for next shift & also bearings in middle.

Richard Brown  Date 3/7 1983
### Drilling Log

**Ruscoe Moss Company**

830 Ahua Street, Honolulu, Hawaii 96819

**Telephone:** (808) 839-6888 • 833-1444

---

**Date:** 3/5 1983  
**Job No.:** 7-83  
**Hole No.:** #1  
**Elevation:** 540 ft.

**Customer:** Dept. Natural Resources  
**Location:** Mokalehua

**Driller:** Richard Burren  
**Hrs.:** 4  
**Rig:** 284

**Helper:** Earl Ching  
**Hrs.:** 8  
**Gas:**  
**Oil:**

**Helper:**  
**Hrs.:**  
**Repairs:**

**Arv. Job:**  
**Lv. Job:**  
**Hrs. Or. No.:**

**Bit Size:**  
**Type:**

**Casing Size:** in., **Length in hole:** ft.  
**in., Amt. Perforated:** ft.  
**in.

**Depth Start:** ft., **Depth Stop:** ft.  
**Feet Drilled:**

**Water Levels, Time:** M ft., **Time:** M ft.

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Repaired hole &amp; ditch in road</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>at gate to be able to get in &amp; out of</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>yard better.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Looked for cement pump, huge spider & snake  
leaves & moss. Stone ship to hon. Had to put  
on piles & bond on dock.

**Signed:** Richard Burren  
**Date:** 3/5 1983
Date 3/7/83  Job No. 7-86  Hole No. #1  Elevation 520 ft.
Customer: R Nacricca  Location: Makalika

Driller: Richard Bourn  Hrs. Rig 284
Helper: Earl Ching  Hrs. Gas 8
Helper  Hrs. Oil
Arv. Job  L A.  Hrs.

Gas:  Oil:

Arv. Job  L V.  Hrs.  Or. No.

Bit-Size  Type
Casing-Size: in., Length in hole ft.  in., Amt. Perforated ft.  in.

Depth Start ft., Depth Stop ft., Feet Drilled

Water Levels, Time M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Returned extra cement &amp; Air Compressor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Also had to mix a few bags cement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>by hand to make up what settled</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clean up extra; down 1 yard location</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ready to run some pump</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Going to ship some things back to
Honolulu A.M.

Signed: Richard Bourn  Date 3/7/83 1983
**DRILLING LOG**

Date: 3/3 1983  
Job No.: 7-50  
Hole No.: #1  
Depth: 520 ft.  

Customer: Dept. Natural Resources  
Location: Makalapa

Driller: Richard Bourn  
Hours: 8  
Rig: 284

Helper: Earl Ching  
Gas: Oil

Arrival Job: _____  
Leaving Job: _____  
Hrs. Repairs: 

Bit Size: _____  
Type: _____

Casing Size: _____ in., Length in hole: _____ ft.  
Amt. Perforated: _____ ft.  

Depth Start: _____ ft.  
Depth Stop: _____ ft.  
Feet Drilled: _____


**Depth** | **Formation** | **Remarks** | **Top**
--- | --- | --- | ---

**Remarks:**  
Finished Cementing well

Remarks: Cleaned up machinery & tanks & pipe.  
Had some cement left over to return 31 bags on credit.
<table>
<thead>
<tr>
<th>Date: 3/1/83</th>
<th>Job No: 7-82</th>
<th>Hole No: #1</th>
<th>Elevation: 520 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer: Dept. Natural Resources</td>
<td>Location: Makakahana</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller: Richard Brown</td>
<td>Hrs: 8</td>
<td>Rig: 281</td>
<td></td>
</tr>
<tr>
<td>Helper: Earl Ching</td>
<td>Hrs: 8</td>
<td>Gas:</td>
<td></td>
</tr>
<tr>
<td>Helper:</td>
<td>Hrs:</td>
<td>Oil:</td>
<td></td>
</tr>
<tr>
<td>Arv. Job:</td>
<td>Lv. Job:</td>
<td>Repairs:</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth Start: ft.</td>
<td>Depth Stop: ft.</td>
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</tbody>
</table>

**Water Levels, Time:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ft.</td>
<td>picked up 80 more bore cement</td>
<td></td>
</tr>
<tr>
<td>100 ft.</td>
<td>4 new grant &amp; mixed with some</td>
<td></td>
</tr>
<tr>
<td></td>
<td>good need more trouble</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hauled 50 more bore cement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Have more work coming in Q.M.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

- Need another good gun! Adding some
- Lessen the rate of cement at

**Signed:** Richard Brown | Date: 3/1/83
**DRILLING LOG**

Date: 2/28 1983  
Job No: 4-82  
Hole No: #1  
Elevation: 520 ft.

Customer: Dept. Not Decs.  
Location: Makaha

Driller: Richard Bourn  
Hrs:  
Rig: 281

Helper: Earl Ching  
Hrs:  
Gas:  
Oil:  
Repairs:  

Arv. Job:  
Lv. Job:  
Hrs:  
Or. No.: 

Bit-Size:  
Type: 


Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>picked up materials from dock pump</td>
<td></td>
</tr>
<tr>
<td></td>
<td>cement tank &amp; lines &amp; pipe</td>
<td>300 ft 1½ pipe demolition &amp; clearing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>plate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Setup for 30' boys, cement didn't get much 
fill added also added 3 yards gravel between tanks of cement 
then issues with, gravel sprinkler said as back want 
well grade.

Signed: Richard Bourn  
Date: 2/28 1983
Date: 2/25/1983  
Job No.: 4-84  
Hole No.: #1  
Elevation: 520 ft.

Customer: Dept. Natural Resources  
Location: Makaliiho

Driller: Richard Bourn  
_Rig 284_

Helper: Earl Ching  
_Hrs. Gas Oil_

Arv. Job  
Lv. Job

Hrs. Repairs

Bit-Size  
Type

Casing-Size in., Length in hole ft. in., Amt. Perforated ft. in.

Depth Start ft., Depth Stop ft., Feet Drilled

Water Levels, Time M ft., Time M ft.

---

Depth  
Formation  
Remarks  
Top

---

Remarks:

Worked on bridge for Kelly while on rig in between Eddie or Charlie. Would stand.

Signed: Richard Bourn  
_Date:_ 2/25  
1983
**Date:** 2/24 1983  **Job No.:** 4-82  **Hole No.:** 1  **Elevation:** 520 ft.

**Customer:** Dept. Natural Resources  **Location:** Makaha

**Driller:** Richard Brown  **Hrs.:**  9  **Rig:**  244

**Helper:** Earl Chin  **Hrs.:**  Gas  **Oil**

**Helper Hrs.:**  **Gas:**  **Oil**

**Arv. Job:**  **Lv. Job:**  **Or. No.:**

**Bit-Size:**  **Type:**

**Casing-Size:**  **in., Length in hole:**  **ft.**  **in., Amt. Perforated:**  **ft.**  **in.**

**Depth Start:**  **ft., Depth Stop:**  **ft., Feet Drilled:**

**Water Levels, Time:**  **M ft., Time:**  **M ft.**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>Checked with Kali Kaiwi on ground</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>going to put 2 &amp; to 3 ft. shoveling well for</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>rock</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>hole rock, air compressor full mud</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>on Monday</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

-银行* Haul 4 loads of rock in Multonish
-Bank basket must of fill dump in ground water, shot out top of casing.

**Signed:** Richard Brown  **Date:** 2/24 1983
Date: 2/23/1983  
Job No.: 7-84  
Hole No.: #1  
Location: Makalapa

Customer: Dept. Mt. Recurser  
Driller: Richard Bourne  
Rig: 284  

Helper: Earl Chee  
Gas: Oil

Arv. Job:  
Lv. Job:  
Or. No:  

Bit-Size:  
Type:  


Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time M ft., Time M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>picked up cement &amp; air compressor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>set 20 ft cement plug in bottom picked</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>up 1 set pipe down, put in 1/2 yard</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>tied to spread basket - crew 20 boys</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>cement on basket plug from 14 feet. Run pipe pulled out same as finish cleared out</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Richard Bourne  
Date: 2/23/1983
**Date:** 2/24/83  
**Job No.:** 463  
**Hole No.:** #1  
**Location:** Molokai  

**Customer:**  
**Dept:** Nat. Resources  
**Location:**  

**Driller:** Richard Bourn  
**Hrs.:**  
**Rig:** 284  

**Helper:** Earl Ching  
**Hrs.:**  
**Gas:**  
**Oil:**  

**Serv. Job:**  
**Hrs.:**  
**Lv. Job:**  

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
</table>

|-------------|---------------------|---------------------------|---------|

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft., Depth Stop</th>
<th>ft., Feet Drilled</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft., Time</th>
<th>M</th>
<th>ft.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Measurements</th>
</tr>
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<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Finished running casing set down on</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>bottom - 56 2/3&quot; level cast iron &amp; metal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Same out of way get hoist ready to run</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Current plug in bottom &amp; Bushed filled in</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leveled up platform to put their pipe in hole.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

**Remarks:** Also pulled conductor 20" pipe & moved some off hoist.

**Signed:** Richard Bourn  
**Date:** 3/24/83  
**1983**
Date 2/31/19 83  Job No. 4-83  Hole No. #1  Elevation 520 ft.

Customer  Dept. Not Required  Location Makaha

Driller  Richard Brown  Hrs.  Rig 284
Helper  Earl Ching  Hrs.  Gas Oil
                    Hrs.  Repairs

Bit-Size  Type
Casing-Size in., Length in hole ft. in., Amt. Perforated in.

Depth Start ft., Depth Stop ft., Feet Drilled

Water Levels, Time M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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<tbody>
<tr>
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</tbody>
</table>

Tested Pump belonging to pump dept 4
Hauled Same to Kamoi Pump house unloaded
Same Came back to shop I picked up cement
Pump & tank & pipes  Fixed up Cat line
After the sub Same also couldn't put
Pump in pump house on Friday  Done with
Pump department Pump Shop

Remarks: Run 3 joints Casing in Hole

Signed Richard Brown  Date 2/31/19 83
Date: 2/18/83  
Job No.: 4-83  
Hole No.: #1  
Elevation: 520 ft.

Customer: Dept.  
Location: Makaha

Driller: Richard Brown  
Hrs.: Rig  

Helper: Earl Ohara  
Hrs.: Gas  

Helper:  
Hrs.: Oil

Arv. Job:  
Lv. Job:  

Bit-Size:  
Type:  

Casing-Size: in., Length in hole: ft.  
Amt. Perforated: ft.  

Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

Measurements

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

Remarks:

Running 14" pipe. Had to look for 9 ft.  
How to bck.  
Stuck 18 ft. high to put down 12. Broken water line. Got 2 casing on job site now. Would pump dept. Pump  
To footer to store water.

Signed: Richard Brown  
Date: 2/18/83
Date: 3/14 1983  Job No: 4-82  Hole No: #1  Elevation: 520 ft.
Customer: Dept. Nat. Resources  Location: Makaha
Driller: Richard Brown  Hrs. Rig: 28
Helper: Earl Cling  Hrs. Gas: Oil
Helper:  Hrs. Repairs:

Bit-Size:  Type:
Depth Start: ft., Depth Stop: ft., Feet Drilled:
Water Levels, Time: M ft., Time: M ft.

```
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>14&quot; Pipe in Hole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80 ft blank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 ft perf</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80 ft blank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120 ft blank</td>
</tr>
</tbody>
</table>
```

Measurements:

Signed: Richard Brown  Date: 3/14 1985

Remarks: Installed 16" rock out on 14" pipe quite a Job when you don’t have any thin metal.
Date: 2/16 1983  Job No.: J/82  Hole No.: #1  Elevation: 520 ft.

Customer:  Location: Mokahana

Driller: Richard Bourn  Hrs. Rig: 284
Helper: Earl Ching  Hrs. Gas: Oil
Helper:  Hrs. Repairs: 

Bit-Size:  Type: 
Depth Start: ft., Depth Stop: ft., Feet Drilled: 
Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

Measurements

Depth

Formation

Remarks

Top

Remarks: Running 14" pipe in hole takes lots of time as there is help. Carry every thing built you are not enough tool box space to put some in, I change & lockup every thing. 250 in hole.

Signed: Richard Bourn  Date: 2/16  1983
### Drilling Log

**Customer:** Dept. Nat. Resources  
**Location:** Makaha

- **Driller:** Richard Brown  
  - Hrs.:  
  - Rig: 286  

- **Helper:** Carl Ching  
  - Hrs.: 9

- **Arv. Job:**  
  - Hrs.:  
  - Or. No.:  

- **Bit Size:**  
- **Type:**  

- **Casing Size:** in., Length in hole ft., in., Amt. Perforated ft. in.  

- **Depth Start:** ft., Depth Stop ft., Feet Drilled  

- **Water Levels, Time:** M ft., Time M ft.  

- **Remarks:**
  - Turn down block & build up same to turn pipe. Some one stole Alternator from welder. Had to rig up makeshift cat. Line to unload pipe.

---

**Date:** 2/15 19 83  
**Job No.:** 7-83  
**Hole No.:** #1  
**Elevation:** 520 ft.

---

**Drilled remarks:**

- **Remarks:** Hauled Blank Casing from Water Supply yard & set up to mud same. Also spent hour looking for bucket at block. Came off ship.

---

**Signed:** Richard Brown  
**Date:** 2/15 19 83
DRILLING LOG

RUSCOE MOSS COMPANY

830 AHAU STREET • HONOLULU, HAWAII 96819
TELEPHONE: (808) 839-6888 • 833-1444

Date 2/14 1983  Job No. 4-82  Hole No. #1  Elevation 520 ft.
Customer Dept - Natural Resources  Location Makaleha

Driller  Richard Baur  Hrs.  Rig 281
Helper  Earl Cushing  9 Hrs.  Gas  Oil
Helper  
Arv. Job  
Lv. Job  
Or. No.  

Bit-Size  20 "  Type M.H.
Casing-Size  20 " in., Length in hole 43 ft.  Amt. Perforated  ft. in.
Depth Start  ft., Depth Stop  ft., Feet Drilled  
Water Levels, Time  M  ft., Time  M  ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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</table>

Measurements

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<th>B</th>
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</thead>
</table>

Remarks:
Hauled pipe from Rock & Unloaded Same - Buck down. 20 ft. & put on 14" - Hauled Spikes & clypse. Had to make 2 trips - Some one stole Cat Line Rope.

Signed Richard Baur  Date 2/14 1983
Date: 3/4/1983  
Job No.: 7-59  
Hole No.: #1  
Elevation: 520 ft.

Customer:  
Location: Mokolii

Driller: Richard George  
Helper: Mark Ohara

Rig:  
Gas:  
Oil:  
Repairs:  

Arv. Job:  
Lv. Job:  
Or. No.:  

Bit Size:  
Type:  


Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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<tr>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Finished fitting float with booster on truck</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Had hard time getting to get a port</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Put in more shots, up to 6 1/2&quot; depth</td>
<td></td>
</tr>
</tbody>
</table>

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Measurements</th>
<th>A</th>
<th>B</th>
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</tbody>
</table>

Remarks: Pete laid cable in Canal 1/2"x14" line sized 1500 ft.

Signed: Richard George  
Date: 3/4/1983
<table>
<thead>
<tr>
<th>Date</th>
<th>2/3 1983</th>
<th>Job No.</th>
<th>7-54</th>
<th>Hole No.</th>
<th>#2</th>
<th>Elevation</th>
<th>526 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. No.</td>
<td>Location</td>
<td>Honolulu, Hawaii</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Hrs.</td>
<td>Rig</td>
<td>256</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Cluney</td>
<td>Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td>Hrs.</td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>26 in.</td>
<td>Type</td>
<td>Hall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>7 in., Length in hole</td>
<td>73 ft., Amt. Perforated</td>
<td>ft. in.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>ft., Depth Stop</td>
<td>ft., Feet Drilled</td>
<td></td>
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<td></td>
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<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft., Time</td>
<td>M</td>
<td>ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
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</tbody>
</table>

Remarks: Earl helped Jake on pump at Kaka but pipe wasn't right and they couldn't fit.

Signed Richard Brown Date 2/3 1983
**DRILLING LOG**

**Date:** 2/2/1953  
**Job No.:** 7-52  
**Hole No.:** #1  
**Elevation:** 520 ft.

**Customer:**  
**Dept.:**  
**Rep:**  
**Location:**  
**Rep:**

**Driller:** Richard Baun  
**Hrs:**  
**Rig:** 284

**Helper:** Earl Ching  
**Hrs:**  
**Gas:**  
**Oil:**

**Arv. Job:**  
**L. Job:**  
**R:**  
**Or. No.:**

**Bit-Size:** 26"  
**Type:** W.H.

**Casing-Size:** 26" in., **Length in hole:** 43 ft.  
**Amt. Perforated:** ft. in.

**Depth Start:** ft., **Depth Stop:** ft., **Feet Drilled:**

**Water Levels, Time:** M ft., **Time:** M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Finished Cleaning out Hole 1 Choring</td>
<td>Clean</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

**Measurements**

<table>
<thead>
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<th>A</th>
<th>B</th>
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</table>

**Remarks:**  
Finished Moving bit & pipe away from location.  
To be loaded onto truck at corner of Hwy. 100, per details.  
Tiped one tank of fuel & 1 tank of Cylinders on site.

**Signed:** Richard Baun  
**Date:** 2/2/1953
**Date**: 1/1/1983  
**Job No.**: 7-83  
**Hole No.**: #1  
**Elevation**: 320 ft.

**Customer**: Netti - Binnie  
**Location**: Kahuku

**Driller**: Richard Bunn  
**Hrs.**:  
**Rig**: 254

**Helper**: Earl Chung  
**Hrs.**: 9  
**Gas**:  
**Oil**:  
**Repairs**:  

**Arv. Job**:  
**Lv. Job**:  
**Hrs.**:  
**Or. No.**:  

**Bit-Size**: 26"  
**Type**: Mill

**Casing-Size**: 26" in.  
**Length in hole**: 43 ft.  
**Amt. Perforated**:  

**Depth Start**: 253 ft.  
**Depth Stop**: 566 ft.  
**Feet Drilled**: 5

**Water Levels, Time**: M ft.  
**Time**: M ft.  

---

### Depth

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>553</td>
<td>Clay with l.t.</td>
<td>Clayey sticky &amp; sticky</td>
<td>A</td>
</tr>
<tr>
<td>253</td>
<td>Off of fine clay</td>
<td>Clayey sticky, 2 ft.</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks**: Changed Sand line of special operation  
Sawd Ccmm. pick up 15" pipe & stuff here

**Signed**: Richard Bunn  
**Date**: 2/1/1983
Date: 1/31/53  
Job No.: 7-84  
Hole No.: #1  
Elevation: 530 ft.

Customer: Dept. Nat. Resources  
Location: Makahiki

Driller: Richard Brown  
Hrs.: 7  
Rig: 28L

Helper: Earl Chang  
9 Hrs.  
Gas: Oil

Helper:  
Hrs.:  
Repairs:  

Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:  

Bit-Size: 26"  
Type: 28L H

Casing-Size: 26 in.  
Length in hole: 43 ft.  
Amt. Perforated:  

Depth Start: 544 ft.  
Depth Stop: 555 ft.  
Feet Drilled: 8 ft

Water Levels, Time:  
M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>544</td>
<td>Compliment Stick</td>
<td></td>
<td></td>
</tr>
<tr>
<td>555</td>
<td>Clay Shapaz Blk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Notice date of run; other tool; strike at bottom
Keep my hands clean; wait about any lift

Signed: Richard Brown  
Date: 1/31/53

DRILLING LOG

830 AHUA STREET * HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 + 833-1444
### DRILLING LOG

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 • 833-1444

---

**Date**: 1/28/1988  
**Job No.**: 7  
**Hole No.**: 47  
**Elevation**: 520 ft.

**Customer**: Dept. Natural Resources  
**Location**: Metabolin

---

**Driller**: Richard Brown  
**Hrs.**:  
**Rig**: 284

**Helper**: Earl Eliong  
**Hrs.**:  
**Gas**:  
**Oil**:

**Helper**:  
**Hrs.**:  
**Repairs**:

**Arv. Job**:  
**Lv. Job**:  
**Or. No.**:

---

**Bit-Size**: 26'  
**Type**: "M"  

**Casing-Size**: 26" in., Length in hole 253 ft.  
**in., Amt. Perforated**: 1 ft. in.

**Depth Start**: 97.5 ft.  
**Depth Stop**: 195 ft.  
**Feet Drilled**: 97.5 ft.

**Water Levels, Time**: M 142 ft., Time M 142 ft.

---

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>97.5</td>
<td>Puka Rock 1</td>
<td>Note still chck 1</td>
<td></td>
</tr>
<tr>
<td>195</td>
<td>Clay</td>
<td>Bottom of Hunt for hard</td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks**: Nothing.

---

**Signed**: Richard Brown  
**Date**: 1/28/1988
<table>
<thead>
<tr>
<th>Date</th>
<th>1/27 1983</th>
<th>Job No.</th>
<th>7-82</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>526 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Makaha</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th></th>
<th>Hrs.</th>
<th>Rig</th>
<th>28L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>9 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td>Hrs.</td>
<td>Repairs</td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td>Lv. Job</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Or. No.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>30&quot;</th>
<th>Type</th>
<th>M.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth Start</td>
<td>537 ft.</td>
<td>Depth Stop</td>
<td>947 ft.</td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft.</td>
<td>Time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measurements</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>537 ft.</td>
<td>Dakota Clay</td>
<td>Can't tell didn't measure</td>
</tr>
<tr>
<td>947 ft.</td>
<td></td>
<td>Can't see any beds, no core back</td>
</tr>
</tbody>
</table>

Remarks: If water higher wait until will pump up bed away

Signed: Richard Brown | Date: 1/27 1983
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>529</td>
<td>Puna Clay</td>
<td>Rock still stick to bitter</td>
<td></td>
</tr>
<tr>
<td>537</td>
<td>Coolie Crag</td>
<td>Well will clean to bitter</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>At times Clay layers</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Can only drill about 4 ft per run and coming down makes it thick.

Signed: Richard Brown Date 1/36 1983
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUAI STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 539-6883 • 533-1444

Date: 1/35 1983  
Job No.: 4-83  
Hole No.: 1  
Elevation: 529 ft.

**Customer:** Dept. Natural Resources  
**Location:** Makaha

**Driller:** Richard Burns  
**Hrs.:**  
**Rig:** 284

**Helper:** Earl Ching  
**Hrs.:** 9  
**Gas:**  
**Oil:**  
**Repairs:**

Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:  

**Bit-Size:** 20"  
**Type:** M.H.

**Casing-Size:** 20" in.  
**Length in hole:** 43 ft.  
**In., Amt. Perforated:** ft. In.

**Depth Start:** 523 ft.  
**Depth Stop:** 529 ft.  
**Feet Drilled:** 6 ft.

**Water Levels, Time:** M ft.  
**Time:** M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>523</td>
<td>Clinton Hard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>529</td>
<td>Lagoon</td>
<td>Still Council</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Material coming down. Lot of mud can only make 4 ft. more.

**Signed:** Richard Burns  
**Date:** 1/35 1983
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/5</td>
<td>Pulls back could be sand or mixed with clay</td>
<td></td>
</tr>
<tr>
<td>5/23</td>
<td>Toke stuck at bottom most of time. 4 hours late of</td>
<td>mud both blue clay &amp; light brown.</td>
</tr>
</tbody>
</table>

Remarks: Think most of everything is compliant.

Signed: Richard Brown  Date: 1/24 1983
**Drilling Log**

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819
Telephone (808) 839-6888 • 833-1444

---

**Date** 11/21 1983  
**Job No.** 7-83  
**Hole No.** #1  
**Elevation** 520 ft.

**Customer** Dept. Natural Resources  
**Location** Makalapa

**Driller** Richard Brown  
**Hrs.**  
**Rig** 284

**Helper** Earl Chunig  
**Hrs.**  
**Gas**  
**Oil**

**Arv. Job**  
**Lv. Job**  
**Hrs.**  
**Repairs**  
**Or. No.**

**Bit-Size** 20"  
**Type** 22H

**Casing-Size** 20" in., Length in hole 43 ft.  
**in., Amt. Perforated** ft.  
**in.**

**Depth Start** 506 ft., Depth Stop 515 ft., Feet Drilled 9 ft.

**Water Levels, Time** M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>506</td>
<td>Puka Rock or something</td>
<td></td>
</tr>
<tr>
<td>515</td>
<td>Latacy of Blue mud, can't tell for sure what</td>
<td>Material is Puka when wash out but Latacy of Blue Clay</td>
</tr>
</tbody>
</table>

**Remarks:** Hole has quite a bit of drift but is all one way so think will be OK. Also after off set at 1400 ft. drift about 1½" on line. Drift big. Now best I could to control drift as had as it was.

**Signed** Richard Brown  
**Date** 11/21 1983
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE: 808-839-6988 • 833-1444

---

**Date**: 11/30 1983  **Job No.**: 4784  **Hole No.**: #2  **Elevation**: 520 ft.

**Customer**: Dept Nat. Resources  **Location**: Makaha

---

**Driller**: Richard Bourne  **Hrs.**: Rig 281

**Helper**: Carl Cheng  **Hrs.**: 9  **Oil**

**Helper**:  **Hrs.**: Repairs

**Arv. Job**:  **Lv. Job**:  **Hrs.**: Or. No.

---

**Bit-Size**: 20"  **Type**: M.H.

**Casing-Size**: 20" in.  **Length in hole**: 43 ft.  **In.**:  **Amt. Perforated**: ft.  **In.**

**Depth Start**: 495 ft.  **Depth Stop**: 506 ft.  **Feet Drilled**: 11 ft

**Water Levels, Time M ft.**, Time M ft.

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>495</td>
<td>Rock &amp; Blue Clay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>506</td>
<td>Clay</td>
<td>Hard some time.</td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks**: Job still casing. Can't tell for sure what kind of material drilling. Drill bit sticks to bottom sometime. Great gabage. Mud is blue they say in color.

---

**Signed**: Richard Bourne  **Date**: 11/30 1983
<table>
<thead>
<tr>
<th>Date</th>
<th>Customer</th>
<th>Driller</th>
<th>Helper</th>
<th>Arv. Job</th>
<th>Rig</th>
<th>Location</th>
<th>Depth Stop ft.</th>
<th>Feet Drilled</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/19 1983</td>
<td>Dept Natural Resource</td>
<td>Richard Brown</td>
<td>Earl Clingy</td>
<td></td>
<td>281</td>
<td>Makaha</td>
<td></td>
<td></td>
<td>Finished reaming hole to 495'</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Changed design on bit but lift M77</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>on to try &amp; held drill all one way.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks: Picked up pump &amp; Materials from clock for pump dept. drilled about 5 ft.</td>
</tr>
</tbody>
</table>

Signed: Richard Brown  Date: 1/19 1983
Date: 11/8/73  
Job No.: 4-87  
Hole No.: 771  
Elevation: 520 ft.

Customer: 
Dept. Nat.: Barreeva  
Location: Makaha

Driller: Richard Bourn  
Hrs.: 
Rig: 281  
Gas: Oil  
Rig: 281

Helper: Earl Chong  
Hrs.: 9
Repaired:  
Arv. Job:  
Lv. Job:  
Or. No.: 

Bit-Size: 20"  
Type: B.B. M.H.  
Casing-Size: 20" in., Length in hole: 35 ft.  
In., Amt. Perforated: 
Depth Start: 
Depth Stop: 
Feet Drilled: 

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reaming Hole to 20".

Remarks: Still lots of casing also lots of bit work some material blue in color blue mud like old river bottom.

Signed: Richard Bourn  
Date: 11/8/73
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reaming Hol. to 20’</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Down 450’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Some hard layers & lot of clay & small rock coming down from above, think from about 284’.

Signed: Richard Bourn  Date 1/17 1983
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cleaning &amp; Reaming 14&quot; hole to 20&quot; hole doing lot of casing time to be careful not to hang up with 14&quot; tool not bad with 20&quot; Reaming bit. Easy hoisting &amp; fitting casing to slip hoz. on Friday secure everything job site for few days.</td>
</tr>
</tbody>
</table>

Remarks: NTWTF 99985

Signed: [Signature] Date: 1/8/1982
**DRILLING LOG**

<table>
<thead>
<tr>
<th>Date</th>
<th>12/27 to 31/19 84</th>
<th>Job No.</th>
<th>4-84</th>
<th>Hole No.</th>
<th>1</th>
<th>Elevation</th>
<th>520 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Natural Resources</td>
<td>Location</td>
<td>Makalapa</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Bourn</th>
<th>Hrs.</th>
<th>Rig</th>
<th>18L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td></td>
<td>Repairs</td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td></td>
<td>( 1 ) ft.</td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
<td></td>
<td>( 1 ) ft.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>20&quot;</th>
<th>Type</th>
<th>MH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casing-Size</td>
<td>20&quot;</td>
<td>Length in hole</td>
<td>403 ft.</td>
</tr>
<tr>
<td>Depth Start</td>
<td>( -1 ) ft.</td>
<td>Depth Stop</td>
<td>( -1 ) ft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>( M ) ft.</th>
<th>Time</th>
<th>( M ) ft.</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

- Cleaned on Haul Monday A.M. \& Port of 1 1/2" Built in Haul - Earl Howard fixed Tenline got stuck in Haul after building hit up. Took over the target hole from gauging.
- Cleaned and took out from Tuesday A.M. till Thursday noon material had to clean out just like drilling up ground.
- Changed 1/4" Rock to 20" 2nd gauze before I went on last rest of week.
- Worked Friday also material leaves up 20" Mit. just like was drilling hard blue rock from 345' 30" north.
- Lots of cuttings made able to keep sharp cutting edge.
- Hole down 385' 20" north.

**Remarks:**
- Some Clay, Clayey Comming down hole from 289' Holes holding the drift so water flow will continue.
- Nice rain most of time every day.

Signed: Richard Bourn  
Date: 12/27 to 31/19 84
Date 12/20 to 24/1983  Job No. 4-83  Hole No. #1  Elevation  ft.
Customer Dept. Natural Resources  Location Makaha  77

Driller Richard Brown  35 Hrs.  Rig 284
Helper Earl Ching  2 Hrs.  Gas  6000 lbs.
Helper  2 Hrs.  Oil
Arv. Job  11 P.M.  Lv. Job  5:30 A.M.

Bit-Size Type
Casing-Size in., Length in hole ft. in., Amt. Perforated ft. in.
Depth Start ft., Depth Stop ft., Feet Drilled
Water Levels, Time M ft., Time M ft.

Depth Formation Remarks Top

Cleaning 14" hole to 20" hole very slow as hole has lots of Blue Rock ledge very hard I had drifted both. Controlling drift some as drill. Hole bottomed out going to change bite. Clean took till Monday. Also lots of coming from around 280' to 320'.

Remarks: Every day done very hard.

Signed Richard Brown  Date 12/20 to 24/1983
**Drilling Log**

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819
Telephone (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/17 1984</td>
<td>4-SE</td>
<td>#1</td>
<td></td>
</tr>
</tbody>
</table>

**Customer**

Dept: Not Applicable

**Location**

Makaha

**Driller**

Richard Bourn

**Hrs.**

Gas

Oil

**Helper**

Paulening

9 Hrs.

**Hrs.**

Repaired

**Arv. Job**

**Lv. Job**

**Hrs.**

Or. No.

**Bit-Size**

20

**Type**

M.H.

**Casing-Size**

20 in.

**Length in hole**

43 ft.

**Amt. Perforated**

**in.**

**Depth Start**

**ft.**

**Depth Stop**

**ft.**

**Feet Drilled**

**Water Levels, Time**

**M** ft.

**Time**

**M** ft.

**Depth**

**Formation**

**Remarks**

**Top**

---

**Cleaning Hole to 20”**

**Remarks:**

Some layers very slow down to take lots of time to be able to straighten any at all. Got truck suspended—wiped rig down & washed & cleaned up pickup & truck. Chris Brown.

**Signed**

Richard Bourn

**Date**

12/17 1984
Date: 12/16 1983  
Job No.: 4-85  
Hole No.: #1  
Elevation: ft.  

Customer: Dept. Nat. Resources  
Location: Makaliiu  

Driller: Richard Bourn  
Hrs.:  
Rig: 282  

Helper: Earl Ching  
Hrs.:  
Gas:  
Oil:  
Repairs:  

Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:  

Bit-Size: 20 in.  
Type: M.H.  

Casing-Size: 60 in., Length in hole: 43 ft.  
Amt. Perforated: ft.  
in.  

Depth: Start Depth: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reaming hole to 20".

Remarks: Drill truck ready for inspection on Friday. Had to do some work on bitten.

Signed: Richard Bourn  
Date: 12/16 1983
Date: 12/25/82  
Job No.: 4-82  
Hole No.: 1  
Customer: Dept. Nat. Resources  
Location: Makaleha  

Driller: Richard Boram  
Hrs.: 9  
Rig: 284  

Helper: Earl Chun  
Hrs.:  
Gas:  
Oil:  
Repairs:  

Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:  

Bit-Size: 20  
Type: M-H  

Casing-Size: 20 in., Length in hole: 43 ft.  
In., Amt. Perforated:  

Depth Start:  
Depth Stop:  
Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cleaning 14&quot; hole to 20&quot;</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Changed cutting edge on bit helped some in progress but still wasn't moving much. Rain showers.

Signed: Richard Boram  
Date: 12/25/82
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE: (808) 839-6888 • 833-1444

Date: 12/14 1984  
Job No.: 7-84  
Hole No.: #1  
Elevation: ______ ft.

Customer: Dept. Nat Resources  
Location: Makaha

Driller: Richard Burns  
Hrs.: ______  
Rig: 24L

Helper: Earl Ching  
7 Hrs.: Gas  
Gas: ______ Oil: ______

Helper: ______ Hrs.  
Reps.: ______

Arv. Job: ______  
Lv. Job: ______  
Hrs.: ______  
Or. No.: ______

Bit-Size: 20  
Type: M.H.

Casing-Size: 20 in., Length in hole: 93 ft.  
Amt. Perforated: ______ ft. ______ in.

Depth Start: ______ ft., Depth Stop: ______ ft., Feet Drilled: _______

Water Levels, Time: M ______ ft., Time: M ______ ft.

**Depth** | **Formation** | **Remarks** | **Top** |
---|---|---|---|

Reaming Holes to 20”

Remarks: Some layers very sandy, needed remilling on 1” or less measurement but not very thick layers.

Signed: Richard Burns  
Date: 12/14 1984
Date: 12/13 19 56  Job No. 5-8 6  Hole No. # 1  Elevation _______ ft.

Customer: Dept Nat - Recreation  Location: Makalapa

Driller: Richard Brown  Hrs.  Rig 18L
Helper: Earl Clark  Hrs.  Gas  Oil
Helper:  Hrs.  Repairs


Bit-Size:  20”  Type: Si H
Depth Start: _______ ft.  Depth Stop: _______ ft.  Feet Drilled

Water Levels, Time: M _______ ft., Time: M _______ ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Running hole to 20&quot;</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Some hard still coming in on the concrete

Signed: Richard Brown  Date: 12/13 19 56
DRILLING LOG

RUSCOE MOSS COMPANY
830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

Date 12/9 1982 Job No. 4-82 Hole No. 1 Elevation ft.
Customer Dept Not Resource Location Makalina
Driller Richard Bourne Hrs. Rig 284
Helper Earl Ching 9 Hrs. Gas Oil
Helper Hrs. Repairs

Bit-Size 20" Type 21 H.
Casing-Size 20" in., Length in hole 49 ft. in., Amt. Perforated ft. in.
Depth Start ft., Depth Stop ft., Feet Drilled
Water Levels, Time M ft. Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</tbody>
</table>

Reaming Hole to 20"
Spent all day on 8'

Remarks: Any Clay Above & Clay below but none very good place at 280 to 288'.

Hole down to 305, thing fell and out again.

Signed Richard Bourne Date 12/9 1982
<table>
<thead>
<tr>
<th>Date</th>
<th>12/8 1985</th>
<th>Job No.</th>
<th>4-8E</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Nat. Resources</td>
<td>Location</td>
<td>Makalii</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Rig Hrs.</td>
<td>282</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td>Hrs.</td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Arv. Job</td>
<td></td>
<td>Lr. Job</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>20&quot;</td>
<td>Type</td>
<td>M.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>ft.</td>
<td>Depth Stop</td>
<td>ft.</td>
<td>Feet Drilled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M ft.</td>
<td>Time</td>
<td>M ft.</td>
<td></td>
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**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
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<th>Remarks</th>
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<tbody>
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<td>B</td>
</tr>
</tbody>
</table>

Remarking back to 20"

Done very good I very hard places.

Remarks:

Home to build up bit every 30 minutes or rock layer very hard.

Showers all day

Signed Richard Brown Date 12/8 1985
Date: 12/3/84  Job No.: 4-84  Hole No.: #1  Elevation: __ ft.
Customer: Dept. Natural Resources  Location: Makaha

Driller: Richard Bourn  Hrs.: __  Rig: 281
Helper: Earl Ching  Hrs.: __  Gas: __
Helper:  Hrs.: __  Oil: __

Bit-Size: 20"  Type: 9M-H.
Depth Start: __ ft., Depth Stop: __ ft., Feet Drilled: __
Water Levels, Time: M __ ft., Time: M __ ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cleaning Hole to 20&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>trying to control drift as much</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>as possible.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Barge got loose at sea. do not know when will come in. other pickup ready to ship when other one comes in.

Signed: Richard Bourn  Date: 19
Date: 12/30/83  Job No. 4-83  Hole No. #1  Elevation ft.
Customer: Dept Nat Resources  Location: Makaha
Driller: Richard Barn  Hrs.  Rig: 284
Helper: Earl Ching  9 Hrs.  Gas:  Oil:
Helper:  Hrs.  Repairs

Bit-Size: 20"  Type: Mill
Depth Start:  ft., Depth Stop:  ft., Feet Drilled
Water Levels, Time M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Remarks: Clearing 14&quot; tube to 20&quot;</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Checked on large digit come in East got pipe out Hawaiian Crown. Yard I put in Braid water supply yard. Showers all day.

Signed: Richard Barn  Date: 12/6/83
**RUSCOE MOSS COMPANY**

DRILLING LOG

830 AHUA STREET • HONOLULU, HAWAI'I 96819
TELEPHONE (808) 839-6888 • 833-1444

---

Date: 12/6/82  
Job No.: 4-82  
Hole No.: #1  
Elevation: ft.

Customer: Dept. Nat. Resources  
Location: Makaliiua

Driller: Richard Brown  
Hrs.:  
Rig: 281

Helper: Earl Chuang  
9 Hrs.  
Gas: Oil

Helper:  
Hrs.:  
Repairs: 

Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:  

Bit-Size:  
Type:  


Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.,  

---

**Depth** | **Formation** | **Remarks** | **Top** | **Measurements**
---|---|---|---|---

Reaming 14" hole to 20"

---

Remarks: Reaming going very slow here some very bad places. Works 14" on line.

Reaming every 60'

---

Signed: Richard Brown  
Date: 12/6/82  

---
**DRILLING LOG**

RUSCOE MOSS COMPANY

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE: 808/839-6888 • 833-1444

**Date**: 13/3 1982  
**Job No.**: 7-8  
**Hole No.**: 1  
**Elevation**: ______ ft.

**Customer**

**Driller**: Richard Brown  
**Hrs.**: 9  
**Rig**: 284

**Helper**: Earl Ching  
**Hrs.**: 9  
**Gas**:  
**Oil**:  
**Repairs**:  
**Gas**  
**Oil**  
**Repairs**  
**Arv. Job**: 
**Lv. Job**: 

**Arr. Job**: 
**Lv. Job**: 

**Bit-Size**: 20"  
**Type**: M.H

**Casing-Size**: 20" in.  
**Length in hole**: 42 ft.  
**Amt. Perforated**: 

**Depth Start**: 200 ft.  
**Depth Stop**: 811 ft.  
**Feet Drilled**: 11

**Water Levels, Time**: M ft., M ft.

---

<table>
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<th>Remarks</th>
<th>Top</th>
<th>Measurements</th>
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<td></td>
<td></td>
<td>B</td>
</tr>
</tbody>
</table>

**Remarks**:

- Reaming Hole to 20"
- Changed tool from 14" to 20"
- Needle valve stuck on needle 4 failed
- Crank can fail for 2. C + start
- Complet bucked stuck all jinged down

**Signed**: Richard Brown  
**Date**: 12/3 1982
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>12/3/84</th>
<th>Job No.</th>
<th>4-84</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Name</td>
<td>Picurera</td>
<td>Location</td>
<td>Mahalela</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Bourn</td>
<td>1 Hrs.</td>
<td>Rig</td>
<td>284</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>9 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Bit-Size | 14" | Type | Star |
| Casing-Size | 10" in. | Length in hole | 43 ft. | Amt. Perforated | ft. in. |
| Depth Start | 320 ft. | Depth Stop | 485 ft. | Feet Drilled | 165 |
| Water Levels, Time | M ft. | Time | M ft. | |

| Measurements |
| Top |

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaned out</td>
<td>14&quot; hole to bottom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decided to mean hole to 20&quot; all way down</td>
<td>after checked same.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Startreaming at 200</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
Hole Check 9 1/2 + 9 1/2 at 200 ft 10" tub - 380 - 6 1/2" 10 1/4" - 485 - Chant 7/4" X 10" going to man to 20. Raining all day.

**Signed:** Richard Bourn Date 12/2/84
<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Run Bailer Test on well rebuilt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dry House &amp; Straightened up location</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Run new NPT Socket - Bailer Test</td>
<td></td>
</tr>
<tr>
<td>Stop</td>
<td>11:09 - Start</td>
<td></td>
</tr>
<tr>
<td>Start</td>
<td>11:39</td>
<td></td>
</tr>
<tr>
<td>Bailer Crown - 11 ft</td>
<td>12.07</td>
<td>17.42</td>
</tr>
<tr>
<td>Chisel every Minut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>114'3&quot;</td>
<td>11-57</td>
<td>1972</td>
</tr>
<tr>
<td>11-48</td>
<td>11-47</td>
<td>10.50</td>
</tr>
<tr>
<td>11-48</td>
<td>11-48</td>
<td>11.55</td>
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<td>11-48</td>
<td>11-50</td>
<td>11.57</td>
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<tr>
<td>11-48</td>
<td>11-51</td>
<td>11.70</td>
</tr>
<tr>
<td>11-48</td>
<td>11-52</td>
<td>11.72</td>
</tr>
<tr>
<td>Remarks:</td>
<td></td>
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<tr>
<td>11-48</td>
<td>11-53</td>
<td>11.56</td>
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<tr>
<td>11-48</td>
<td>11-54</td>
<td>11.59</td>
</tr>
<tr>
<td>11-48</td>
<td>11-55</td>
<td>11.62</td>
</tr>
<tr>
<td>Signed</td>
<td>Richard Bourn</td>
<td>Date</td>
</tr>
</tbody>
</table>
Date: 11/30/1982  
Job No.: 4-83  
Hole No.: #1  
Elevation: __________ ft.

Customer:  
Dept.:  
Note:  
Location: Makaha

Driller: Richard Brown  
Hrs.: __________  
Rig:  984

Helper: Earl Chung  
Hrs.: __________  
Gas: __________  
Oil: __________

Helper:  
Hrs.: __________  
Repairs: __________

Arv. Job: __________  
Lv. Job: __________  
Hrs.: __________  
Or. No.: __________

Bit-Size: ________ in.  
Type: Star

Casing-Size ________ in., Length in hole ________ ft.  
Ins., Amt. Perforated ________ ft.  
In.

Depth Start: ________ ft., Depth Stop: ________ ft.  
Feet Drilled: ________ ft.

Water Levels, Time: ________ M ft., Time: ________ M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</thead>
</table>

Measurements:

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

Remarks: Picked up materials at floor & also stuff to fix key house - located container with pipe.  
Kohai Co. - going to pick up when get off ship.

Signed: Richard Brown  
Date: 11/30/1982
Date: 11/24/74  Job No.: 4-57  Hole No.: 1  Elevation: [Blank]
Customer: [Blank]  Dept: Natural Resources  Location: Makalaha

Driller: Richard Brown  Hrs: [Blank]  Rig: 284
Helper: Earl Ching  Hrs: 4  Gas: Oil
Helper: [Blank]  Hrs:  [Blank]  Repairs: [Blank]

Bit-Size: 14"  Type: [Blank]

Measurements

Depth | Formation | Remarks | Top | A | B

| [Blank] | [Blank] | [Blank] | [Blank] | [Blank] | [Blank] |
| [Blank] | [Blank] | [Blank] | [Blank] | [Blank] | [Blank] |
| [Blank] | [Blank] | [Blank] | [Blank] | [Blank] | [Blank] |

Remarks:
- Early picked up caller. Tried to check job. Site everything blew away.
- Horrible. Rocks all blew away.
- Don't know where phone will arrive.

Working on Maxi Ford truck fixing up seat spots & painting same.
Most of work done at Earl's garage today on account of rain.

Signed: Richard Brown  Date: 11/24/74  1984
**Drilling Log**

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819

TELEPHONE: 808-839-8888 • 833-1444

---

**Date:** 11/23/19  
**Job No.:** 4-87  
**Hole No.:** 1  
**Elevation:** ft.

**Customer:** Dept. Natural Resources  
**Location:** Makaha

**Driller:** Richard Burn  
**Hrs.:** Rig 2  
**Helper:** Earl Ching  
**Hrs.:** Gas ___  
**Helper:** Oil

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  
**Or. No.:**

**Bit-Size:** 14"  
**Type:** A

**Casing-Size:** 20 in.  
**Length in hole:** 43 ft.  
**Amt. Perforated:** ft.  
**Depth Start:**  
**Depth Stop:**  
**Feet Drilled:**

**Water Levels, Time**

**M** ft., **M** ft., **M** ft.

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<tr>
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**Remarks:**

- Finished up, dumped Box & cleaned
- Some gears off rig when could
- Between showers

- Hurricane warning out, knock off
- Button down for Sandy

---

**Remarks:** Rainy, cold all afternoon. Done some more boring bent on Ford truck.

**Signed:** Richard Burn  
**Date:** 11/23/1987
Date: 11/22 19 X7  
Job No.: 4-X8  
Hole No.: #1  
Elevation: _____ ft.  

Customer: Dept. Natural Resources  
Location: Makaha  

Driller: Richard Brown  
Hrs.: Rig 25  
Helper: Earl Chung  
Hrs.: Gas  
Hrs.: Oil  

Arv. Job: _____  
Lv. Job: _____  
Hrs.: Repairs  
Or. No.: _____  

Bit-Size: 14"  
Type: Atu  

Casing-Size: 20" in.  
Length in hole: 43 ft.  
Amt. Perforated: _____ ft. in.  

Depth Start: _____ ft.  
Depth Stop: _____ ft.  
Feet Drilled: _____  

Water Levels, Time: M _____ ft.  
Time: M _____ ft.  

Remarks:  

Signed: Richard Brown  
Date: 11/22 19 X7  

Remarks: Cleaned grass & worked on minor repairs on rig  

between rain showers.
<table>
<thead>
<tr>
<th>Date</th>
<th>11/17/19</th>
<th>Job No.</th>
<th>4-52</th>
<th>Hole No.</th>
<th>6</th>
<th>Elevation</th>
<th>ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Nat Resources</td>
<td>Location</td>
<td>Malahini</td>
<td></td>
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</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Hrs.</td>
<td>Rig 285</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Helper</td>
<td>Earl Chung</td>
<td>Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>14&quot;</td>
<td>Type</td>
<td>Han</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>20&quot; in.</td>
<td>Length in hole</td>
<td>45 ft.</td>
<td>Amt. Perforated</td>
<td>ft.</td>
<td>in.</td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>3.20 ft.</td>
<td>Depth Stop</td>
<td>3.50 ft.</td>
<td>Feet Drilled</td>
<td></td>
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<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft.</td>
<td>Time</td>
<td>M</td>
<td>ft.</td>
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</table>

Remarks:
- Headed fool & decline to job
- Site pit Toyota pile upon rock
- chip Horse.

Repaired sand line with box & tightened up Chain ball & dump box. Commenced on forging
in A.M. Also | 4 49 Toyota pile ups. Going to
pulper tomorrow from  Carl's.

Signed: Richard Brown Date: 11/17/19 86
Date: 11/18 1979  
Job No.: 4-B  
Hole No.: 1  
Elevation:  

Customer: Dept. Mt. Reserve  
Location: Mokolii  

Driller: Richard Brown  
Hrs.:  
Rig:  

Helper: Earl Clay  
Hrs.:  
Gas:  
Oil:  

Arv. Job:  
Lv. Job:  
Hrs.:  
Repairs:  
Or. No.:  

Bit-Size: 1  
Type:  

Casing-Size: 20 in., Length in hole: 43 ft.  
in., Amt. Perforated:  
ft.  
in.  

Depth Start: 300 ft.  
Depth Stop: 320 ft.  
Feet Drilled: 20  

Water Levels, Time:  
M ft., Time:  
M ft.  

<table>
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<tr>
<th>Depth</th>
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<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td>Cleaning out 14&quot; hole.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Boiled fluids to clean 10" could carry some repairs on rig as F.M. Also in truck - put rawal fluid lock plumbage.

Signed: Richard Brown  
Date: 11/18 1982
### DRILLING LOG

**Date:** 11/17 1982  
**Job No.:** 4-82  
**Hole No.:** #1  
**Elevation:** ft.

**Customer:** Dept. - Net. Revenue  
**Location:** Makaha

**Driller:** Richard Brown  
**Hrs.:** Rig 234

**Helper:** Earl Ching  
**Hrs.:** Gas 9

**Helper:**  
**Hrs.:** Oil

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:** Repairs

**Bit Size:** 14 in.  
**Type:** Stav

**Casing Size:** 20 in., Length in hole 43 ft.  
**in., Amt. Perforated:** ft. in.

**Depth Start:** 340 ft.  
**Depth Stop:** 300 ft.  
**Feet Drilled:** 60 ft

**Water Levels, Time:** M ft., Time M ft.

### Measurements

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<tr>
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<th>Remarks</th>
<th>Top</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Cleaning out 14&quot; pilot holes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stops on semi drift well one way</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over to 2&quot; on line now</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Hourly dig at 200 ft.  
**To break: 1 barrel of lead.**  
**Shall be done Hal.**  
**Trip same should be 2B**

**Signed:** Richard Brown  
**Date:** 11/17 1982
Date: 11/16 1983  
Job No.: 7-32  
Hole No.: #1  
Elevation:  
Customer:  
Location: Makaha  
Driller: Richard Brown  
Hrs.:  
Rig: 281  
Helper: Earl Ching  
9 Hrs.:  
Gas:  
Oil:  
Helper:  
Hrs.:  
Repairs:  
Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:  

Bit-Size: 14"  
Type:  

Casing-Size: 20" in.  
Length in hole: 43 ft.  
Amt. Perforated:  
ft. in.  

Depth Start: 210 ft.  
Depth Stop: 940 ft.  
Feet Drilled: Clean out  

Water Levels, Time: M ft., Time: M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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</table>

Remarks: 
- Some places clean out very hard  
- Lots of gravel & small rocks, but hole still muddy.  

Signed: Richard Brown  
Date: 11/16 1983
## DRILLING LOG

**Date:** 11/15

**Job No.:** 4-82

**Hole No.:** #1

**Elevation:**

**Customer:** Dept Nat - Resources

**Location:** Makaha

**Driller:** Richard Brown  
**Hrs.:** Rig 28

**Helper:** Earl Ching  
**Hrs.:** Gas

** Helper:**  
**Hrs.:** Repairs

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:** Or. No.

**Bit-Size:**  
**Type:**  
**Action:**

**Casing-Size:** 20" in.  
**Length in hole:** 43 ft.  
**Amt. Perforated:**

**Depth Start:**

**Depth Stop:**

**Feet Drilled:**

**Water Levels, Time:** M  
**ft.**, Time M  
**ft.**

## Depth

<table>
<thead>
<tr>
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<th>Remarks</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Casing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20&quot; Hole</td>
<td>with 14&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tools</td>
<td>1/2 to 1&quot; off on line</td>
<td></td>
</tr>
<tr>
<td></td>
<td>But all one way. Can trim if all</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goes same way to bottom.</td>
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</tbody>
</table>

**Remarks:** Cleaning out 14" hole spent about 3 days repining but 4 putting on new bas.

**Passing almost all day**

**Signed:** Richard Brown  
**Date:** 11/15  
**1982**
Date  11/14  1952  Job No.  4-51  Hole No.  #1  Elevation

Customer  Dept. Mt. Tamana  Location  Makaha

Driller  Richard Brown  Hrs.  Rig  281
Helper    Earl Chung  9 Hrs.  Gas
-helper
Arv. Job  Lv. Job  Hrs.  Repairs

Bit-Size  20”  Type  M.H.
Casing-Size  20”  in., Length in hole  73  ft.  in., Amt. Perforated  56  ft.  in.
Depth Start  144  ft., Depth Stop  177  ft., Feet Drilled  34  ft.

Water Levels, Time M ft., Time M ft.  Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Broke out of Hard Lenses, Hole</td>
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<tr>
<td></td>
<td></td>
<td>Coring took about 1 ft. foot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>still have to pull bits to keep</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sharp edges &amp; cut into base.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>up lenses.</td>
</tr>
</tbody>
</table>

Remarks: Hole shows no signs of Coring as for.-
Problem will begin with Water透水.

Signed  Richard Brown  Date  11/14  1952
<table>
<thead>
<tr>
<th>Date</th>
<th>11/11/19</th>
<th>Job No.</th>
<th>4-5</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>ft.</th>
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</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept Nat Resources</td>
<td>Location</td>
<td>Wind\n</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Hrs.</td>
<td>Rig</td>
<td>284</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Chung</td>
<td>Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td>Hrs.</td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td></td>
<td>Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td></td>
<td>ft., Depth Stop</td>
<td>ft., Feet Drilled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels</td>
<td></td>
<td>M ft., Time</td>
<td>M ft., Time</td>
<td></td>
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</tr>
</tbody>
</table>

**Depth** | **Formation** | **Remarks** | **Top** | **A** | **B** |
|-----------|---------------|-------------|---------|------|-------|

**Remarks:**

Company Holiday.

Signed: Richard Brown  Date: 11/11/19
### DRILLING LOG

**Ruscoe Moss Company**

830 Aueva Street • Honolulu, Hawaii 96819

Telephone: (808) 923-6555 • 833-1444

---

**Date:** 11/10/82  
**Job No.:** 4-82  
**Hole No.:** #1  
**Elevation:** Ft.

**Customer:** Dept. Nat. Res.  
**Location:** Makaua

**Driller:**  
**Hrs.:**  
**Rig:** 281

**Helper:**  
**Hrs.:**  
**Gas:**  
**Oil:**

**Helper:**  
**Hrs.:**  
**Reps:**

**Arv. Job:**  
**L. Job:**  
**Hrs.:**  
**Or. No.:**

**Bit-Size:** 20  
**Type:** M. H

**Casing-Size:** 20 in., Length in hole 43 ft.  
**In., Amt. Perforated:**  
**Feet Drilled:**

**Depth Start:** 16 ft., Depth Stop 16 ft., Feet Drilled 2

**Water Levels, Time:** M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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<tbody>
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</tbody>
</table>

**Remarks:**  
Material very hard on cutting  
About 2 new Obs on hard ledge. Had 23/10 to put new Obs on bit for them spent  
mast of A.M. doing so. Don't think  
Stay bit more enough key to start back  
work.

**Remarks:** Hole will take 14" pipe so far bit any  
Working on mud - drift. Hop coming look  
a little one way now how to Cental that.  
Air showers.

**Signed:** Richard Bours  
**Date:** 11/10/82
Date 11/9 1982  Job No. 4/84  Hole No. #1  Elevation ________ ft.
Customer Dept Nat Blemco  Location Malakiki
Driller Richard Bourn  Hrs. Rig 28L  
Helper Earl Cherry  Hrs.  Gas ____________ Oil ________  
Helper ____________ Hrs.  Repairs ____________  
Arv. Job ________  Lv. Job ________  Or. No. ________  

| Bit-Size | 20" |
| Type     | M4  |
| Casing-Size | 20" in., Length in hole 43 ft. in., Amt. Perforated ________ ft. ________ in. |
| Depth Start | 154 ft., Depth Stop 166 ft., Feet Drilled 8 |

Water Levels, Time ________ ft., Time ________ ft., Time ________ ft., Time ________ ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B</td>
</tr>
</tbody>
</table>

Remarks: How to be very careful in hard layers as don't want off if go too fast. How to slow down. Working on bit every 30 minutes to keep sharp cutting edges.

Remarks: The pipe will go if don't start casing off does will have to ream top to 24" to get 18" casing down 155 ft. Rain overseas.

Signed Richard Bourn  Date 11/9 1982
### DRILLING LOG

**Customer:** Dept Nat. Resources  
**Location:** Makaha

<table>
<thead>
<tr>
<th>Date</th>
<th>11/8/1962</th>
<th>Job No.</th>
<th>4-83</th>
<th>Hole No.</th>
<th>#1</th>
<th>Elevation</th>
<th>ft.</th>
</tr>
</thead>
</table>

**Driller:** Richard Brown  
**Helper:** Earl Chung  
**Helper:**  
**Arv. Job:**  
**Lv. Job:**  
**Hrs.:** 9  
**Rig:** 284  
**Gas:**  
**Oil:**  
**Repairs:**  
**Or. No.:**

**Bit-Size:** 20"  
**Type:** M.H.  
**Casing-Size:** 20" in.  
**Length in hole:** 43 ft.  
**In., Amt. Perforated:** ft. in.

**Depth Start:** 150 ft.  
**Depth Stop:** 154 ft.  
**Feet Drilled:** 4 ft.  
**Water Levels, Time:** M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Can't Ram jet or want do any good. 10 1/2 in. Hard Ledges.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Have some measurements when 14&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Job begin to off 3&quot; to 1&quot;, trying</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to build these looks like hole just off 20 ft.</td>
</tr>
</tbody>
</table>

**Remarks:**  

**Signed:** Richard Brown  
**Date:** 11/8/1962
Date: 4/5 1984  
Job No. 4-84  
Hole No. #1  
Elevation ft.  

Location: Makaleha  

Driller: Richard Brown  
Hrs.  
Rig: 286  

Helper: Earl Chris  
10 Hrs.  
Gas: Oil:  

Helper:  
Hrs.  
Repairs:  

Arr. Job:  
Lv. Job:  
Hrs.  
Or. No.:  

Bit-Size: 20 in.  
Type: M.H.  

Casing-Size: 20 in., Length in hole 48 ft.  
Am. Perforated: ft.  

Depth Start: 148 ft., Depth Stop: 150 ft., Feet Drilled: 2  

Water Levels, Time: M ft., Time: M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hole Off 1 1/2&quot;</td>
<td>on line Measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&quot; Hole measurement from 143' to 150'</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>But don't know how much more Job not coming in any way</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set line back to about 1&quot; to 2&quot; Still</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working in that area</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Remarks:  
Supposing pull new Rope socket down.  
Have Chain in Am, Raised in afternoon. Rain held up progress.  

Signed: Richard Brown  
Date: 4/5 1984
Date 11/4 1984
Job No. 4-56
Customer Dept. Natural Resources
Driller Richard Bourn
Helper Earl Chung
Arv. Job
Hrs. 2
Repairs

Bit-Size 20°
Casing-Size 20" in., Length in hole 43 ft.
Depth Start 145 ft., Depth Stop 148 ft., Feet Drilled 3

Remarks:

Must be where he had 14" pipe set as hole drills just line making new hole in Blue Rock lease fell out of bit.

Signed Richard Bourn
Date 11/4 1984

Spent most of time welding on bit needed to change in pouring down rain.
**Date**: 11/3 1983  
**Job No.**: 482  
**Hole No.**: #1  
**Elevation**: ft.

**Customer**: Dept. Natural Resources  
**Location**: Makalili

**Driller**: Richard Brown  
**Hrs.**:  
**Rig**: 284

**Helper**: Earl Hains  
**Hrs.**: 9  
**Gas**:  
**Oil**:  

**Arv. Job**:  
**Lv. Job**:  
**Hrs.**:  
**Repairs**:  
**Or. No.**: 

**Bit-Size**: 20"  
**Type**: M.T.

**Casing-Size**: 20" in.  
**Length in hole**: 43 ft.  
**In. Amt. Perforated**: ft. in.

**Depth Start**: 143 ft.  
**Depth Stop**: 145 ft.  
**Feet Drilled**: 3

**Water Levels, Time**: M ft., Time M ft.

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<th>Depth</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Spent all day on edges bod bod line</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mess 1/2&quot; am gradually cutting off</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some slow process.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks**: Hole seems to just move over to same side 1/2" on line. Too much to go by.

**Signed**: Richard Brown  
**Date**: 11/3 1983
### Drilling Log

**Ruscoe Moss Company**

830 Alua Street * Honolulu, Hawaii 96819

**Telephone:** 808/339-6855 * 833-1444

---

**Date:** 11/2 1983  
**Job No.:** 4-83  
**Hole No.:** #1  
**Elevation:** ft.

**Customer:** Dept. Nate Diamond  
**Location:** Wahiawa

**Driller:** Richard Bouma  
**Hrs.:** 9

**Rig:** 281

**Helper:** Earl Ching  
**Hrs.:** 9

**Gas:** Oil

**Repair:**

**Arv. Job:** 12:00  
**Lv. Job:** 12:00  
**Hrs.:**

**Or. No.:**

**Bit-Size:** 20"  
**Type:** M.H.

**Casing-Size:** 20" in.  
**Length in hole:** 43 ft.  
**Amt. Perforated:** 9 ft.

**Depth Start:** 137 ft.  
**Depth Stop:** 142 ft.  
**Feet Drilled:** 9

**Water Levels, Time:** M ft., Time M ft.

### Measurements

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</table>

- Dan had to change stem, uplug 9" cutting edge every few minutes. Hard to keep welded up in rain.

**Remarks:**

- Had some very bad edges. Don't know how he got 14" pipe by.

---

**Signed:** Richard Bouma  
**Date:** 11/2 1983
## Drilling Log

**Customer:** Dept. Nat. Resources  
**Location:** Makalapa

**Driller:** Richard Bourn  
**Rig:** 286  
**Hrs:** 9

**Helper:** Earl Chung  
**Gas:**  
**Oil:**  
**Hrs:**  
**Repairs:**

**Arr. Job:**  
**Lv. Job:**  
**Hrs:**  
**Or. No.:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
</table>

- Cleaning on 14” hole to 20”
- Trying to correct bad hole as go.

**Remarks:** Some ledges very bad. Have to spend time drilling on grade to correct enough to pass. Lining fell out of bugs & cutting edges building into 30 minutes past like drilling new hole. Down Rain all day.

**Signed:** Richard Bourn  
**Date:** 11/1 1982
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Didn't do any drilling built rock dog</td>
</tr>
<tr>
<td></td>
<td></td>
<td>House in between flood showers never</td>
</tr>
<tr>
<td></td>
<td></td>
<td>did stop rainy Completely gave up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>gut.</td>
</tr>
</tbody>
</table>

**Remarks:** Rainy day house to try to keep some things dry. Unloaded 18" bit 6 feet later.

**Signed:** Richard Brown  Date 10/30 1986
## Drilling Log

**Date:** 10/28 19 84  
**Job No:** 4-28  
**Hole No:** #1  
**Elevation:** ft.  
**Customer:** Dept Nat - Resources  
**Location:** Makaha  

**Driller:** Richard Bourn  
**Hrs.:**  
**Rig:** 284  
**Helper:** Earl Ching  
**Hrs.:**  
**Gas:**  
**Oil:**  
**Reps:**  
**Arr. Job:**  
**Lv. Job:**  
**Hrs.:**  

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</tr>
</thead>
<tbody>
<tr>
<td>20 5%</td>
<td>M.H.</td>
<td>20”</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>114</td>
<td></td>
<td>125</td>
<td></td>
<td>9.4</td>
<td></td>
<td></td>
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### Remarks

Old log said clay but the very hard layers that lead off were to ream on well hard to keep shift OK.

Remain: Half yard wind storm blow away dog house. TERRIBLE heavy rain just drilling & Earl went to look about 3 o'clock pick up 19" bit.

**Signed:** Richard Bourn  
**Date:** 10/28 19 84
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cleaning on shift on</td>
<td>9 1/2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hole not much</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Progress.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Hole coming, rock here can hold general shift. Hole either bridged or filled from coming.

Signed: Richard Brown Date 10/23 1984
Date: 10/16 19-52  
Job No.: 4-85  
Hole No.: #1  
Elevation: ft.  
Customer: Dept. Nat. Resources  
Location: Makaha  

Driller: Richard Browne  
Hrs.: Rig 28  
Helper: Earl Ching  
Hrs.: Gas  
Helper:  
Hrs.: Oil  
Arv. Job:  
Lv. Job:  
Or. No.:  

Bit-Size: 20"  
Type: M.H.  
Casing-Size:  
In., Length in hole: 4  
In., Amt. Perforated:  
Depth Read:  
ft., Depth Step:  
ft., Feet Drilled: 23  
Water Level: 
M., ft., Time:  
M., ft.  
Measurement:  

Depth  
Formation  
Remarks  

9 1/2 9 1/2  

Drilling very hard rock l wedges at 105 10 1/2  
105 to 110 fall off again  

Remarks: 
Home to stall out & hold bore until lugger  
shoulder of pit to bear with.  
Worked on sheel of toyota pick up.  
Airing in afternoon had.  

Signed: Richard Browne  
Date: 10/26 1952
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6588 • 833-1444

**Date** 10/25 1986  **Job No.** 4-86  **Hole No.** #1  **Elevation** [Blank]
**Customer** Dep't Nat. Resources  **Location** Makalapa

**Driller** Richard Brown  **Hrs.**  **Rig** SD-1
**Helper** Earl Chingy  **10 Hrs.**  **Gas** Oil
**Arv. Job**  **Lv. Job**  **Or. No.**

**Bit-Size** 20"  **Type** M.H.
**Depth Start** 86 ft., Depth Stop 90 ft., Feet Drilled 105 ft.
**Water Levels, Time** M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Higher hole lots of sharp edges 9 ½ 9 ½</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some casing</td>
</tr>
</tbody>
</table>

**Measurements**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 ½ 9 ½</td>
<td></td>
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</tr>
</tbody>
</table>

**Remarks:** Hole very crooked in place seems to straighten out OK if run long enough & keep bit sharp. Chaining had every clay.

**Signed** Richard Brown  **Date** 10/25 1986
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-5555 • 623-1444

---

**Date:** 10/32 1984  
**Job No.:** 4-8E  
**Hole No.:** 1  
**Elevation:** ft.  
**Customer:** Dept. Nat Resources  
**Location:** Makaha

---

**Driller:** Richard Brown  
**10 Hrs.**  
**Rig:** 28L

**Helper:** Earl Ching  
**10 Hrs.**  
**Gas:**  
**Oil:**  
**Repairs:**

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  
**Or. No.:**

---

**Bit-Size:** 20"  
**Type:** M.H.

**Casing-Size:** 20"  
**in., Length in hole:** 42 ft.  
**in., Amt. Perforated:**  
**ft.**  
**in.**

**Depth Start:** 65 ft.  
**Depth Stop:** 80 ft.  
**Feet Drilled:** 15'

**Water Levels, Time:** M  
**ft., Time:** M  
**ft.**

---

**Depth**  | **Formation**  | **Remarks**  | **Top**
--- | --- | --- | ---

Drilling out sand, boulders & crumbling on walls.

---

**Remarks:** Time out all drill & put new timber along  
Drill & anchor rig to two tall, rebuilt platforms to brake to boulders well in  
any due to crumbling.

**Signed:** Richard Brown  
**Date:** 10/32 1984

---

**Measurements**

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<th>A</th>
<th>B</th>
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<tr>
<td>Depth</td>
<td>Formation</td>
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</tbody>
</table>

Remarks: Fat pipe Richard good now.

Signed: Richard Bowns  Date: 10/31 1986
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Drilling out gravel from hole 4 Chaining on Wailea Beach.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Changed from Star Club meant a bit added on pipe 1/4 put on M.H. Bit start drilling pipe went down about 2 ft than anchored hose.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Build up M.H. with sharp cutting edge.</td>
</tr>
</tbody>
</table>

Remarks: Job off in bottom crossing on same put sharp cutting edge 1/2 way to sea.

Signed: Richard Brown Date 10/20 1983
**Drilling Log**

Date: 10-19-84  
Job No: 4-81  
Hole No: 2  
Elevation: [Value] ft.

**Customer**  
Dept Nat - Resources  
Location: [Value]

**Driller:**  
Rig: [Value]

**Helper:**  
Earl Ching  
Gas: [Value]  
Oil: [Value]  
Repairs: [Value]  
Hrs: [Value]  
Or. No: [Value]  
Lv. Job: [Value]

**Arr. Job:**  
Hrs: [Value]

**Bit-Size:**  
Type: [Value]

**Casing-Size:**  
in., Length in hole: [Value] ft.  
In., Amt. Perforated: [Value] ft.  
In.

**Depth Start:**  
ft., Depth Stop: [Value] ft., Feet Drilled: [Value]

**Water Levels, Time:**  
M ft., Time: [Value] M ft.

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Value] ft.</td>
<td>[Value] M</td>
<td>Earl picked me up at air port at 5:30 PM.</td>
</tr>
</tbody>
</table>

**Signed:** Richard Brown  
Date: 10/19-84
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 829-5888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>10-13 1982</th>
<th>Job No.</th>
<th>48</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Nat. Res.</td>
<td></td>
<td></td>
<td>Location</td>
<td>Kalakaua - Hawai'i</td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Tommy Cunningham</td>
<td>10 Hrs.</td>
<td>Rig</td>
<td>284</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>E. Ching</td>
<td>10 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td>Or. No.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>2 3/4</th>
<th>Type</th>
<th>Stee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casing-Size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>ft.</td>
<td>Depth Stop</td>
<td>ft.</td>
</tr>
<tr>
<td>Feet Drilled</td>
<td>ft.</td>
<td>Water Levels, Time</td>
<td>M ft., Time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

- Queen on wall at bottom
- Slow Rock Going
- Hole off Spec y't last 6'
- 3 hrs welding bit

**Signed:** Tommy Cunningham  Date: Oct. 11, 1982
Date 10-12-19  Job No. 8-8  Hole No.  Elevation ft.
Customer: Dept. of Land Natural Resources  Location: Makaleha - Kauai
Driller: Cunningham 10 Hrs.  Rig: 8
Helper: Z. Ching 10 Hrs.  Gas: Oil
Bit-Size  3 1/4  Type: Star
Casing-Size  in., Length in hole  ft.  in., Amt. Perforated  ft.  in.
Depth Start  ft., Depth Stop  ft., Feet Drilled
Water Level Time  M  ft., Time  M  ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We filled 83. the last 3 ft. all clay nearly dry. Straight fall, 7-12 good.
Closing at churn at 83 ft.

Signed: Cunningham  Date: Oct. 12, 19 84
Date: 10-8-1982  Job No: 4-82  Hole No: 1  Elevation: 111 ft.
Customer: Dept. of Land & Natural Resources  Location: Hakalehia, Kauai
Driller: T. Cunningham 9 Hrs.  Rig: 284
Helper: E. Ching 10 Hrs.  Gas: Oil
Arv. Job: 7  Ev. Job: 5  Repairs:

Bit-Size: 2 1  Type: Steel
Depth Start: 0 ft., Depth Stop: 111 ft., Feet Drilled: 111 ft.
Water Levels, Time:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Welding Bit 2 1/2 has Bent Blogs Off Body Much</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drilling &amp; Bailing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tony Cunningham  Date: Oct 8, 1982
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>10-7-1982</th>
<th>Job No.</th>
<th>4-81</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>ft.</th>
</tr>
</thead>
</table>

**Customer:** DEPT. OF LAND & NATURAL RESOURCES

**Location:** Makaleha - Kauai

**Driller:** T. Cunningham 10 Hrs.

**Rig:** 284

**Helper:** E. Chang 10 Hrs.

**Gas:**

**Oil:**

**Repairs:**

**Arv. Job:**

**LV. Job:**

**Or. No.:**

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type, Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>in., Length in hole</th>
<th>ft.</th>
<th>m., Amt. Perforated</th>
<th>ft.</th>
<th>m.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft., Depth Stop</th>
<th>ft., Feet Drilled</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft., Time</th>
<th>M</th>
<th>ft.</th>
</tr>
</thead>
</table>

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>39 ft.</td>
<td>DRILLING &amp; Boring</td>
<td>Weld Lost 3 Hrs. a more.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Rain

**Signed:** Ray Cunningham  
**Date:** Oct. 7, 1982
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6886 • 833-1444

Date: **10-6-19**  
Job No. 4-82  
Hole No.  
Elevation: ____ ft.

**Customer:** Dept. of Land & Natural Resources  
**Location:** Makaleha - Kauai

---

**Driller:** Cunningham  
10 Hrs.  
Rig 284

**Helper:** T. Ching  
10 Hrs.  
Gas  
Oil  
Repairs

**Arv. Job:** 7:  
L. Job: 5:  
Or. No.  

---

**Bit-Size:** 2  
Type: HMB

**Casing-Size:**  
in., Length in hole: ft.  

**Depth Start:** 33  
**Depth Stop:** 33  
**Feet Drilled:**

---

**Water Levels, Time:** M  
M  

---

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>
| 33    | FT.       | Drilling & Backing Out  
Could 1/2 hrs on bit |

---

**Remarks:**  

---

**Signed:** Ray Cunningham  
**Date:** Oct. 6, 1982
## Drilling Log

**Date:** 10-5-1984  
**Job No.:** 4-81  
**Hole No.:**  
**Elevation:**  
**Customer:** Dept. of Land & Natural Resources  
**Location:** Makalea - Kauai  

### Driller Information
- **T. Cunningham**  
  - **Hrs.:** 10  
  - **Rig:** 284  

### Helper Information
- **E. Chris**  
  - **Hrs.:** 10  
  - **Repairs:**  

### Well Details
- **Bit-Size:** 21  
- **Casing-Size:** in., Length in hole: ft., Amt. Perforated: ft.  
- **Depth Start:** ft., Depth Stop: 70 ft., Feet Drilled:  
- **Water Levels, Time:** M., ft., Time: M., ft.  

### Depth and Remarks

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>Wild Clay &amp; gravel</td>
<td>3 hrs; mostly drill in Boulder</td>
<td></td>
</tr>
</tbody>
</table>

### Measurements

- **Measurements A & B:**  

### Signed
- **Signed:** T. Cunningham  
- **Date:** Oct. 5, 1984
<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-4-</td>
<td>82</td>
<td>4-8</td>
<td></td>
</tr>
</tbody>
</table>

**Customer:**

Dept of Land & Natural Resources

**Location:**

Makaleha - Kauai

**Driller:** T. Cunningham  
**Hrs.:** 10

**Helper:** E. Cheng  
**Hrs.:** 10

**Arv. Job:** 7:00  
**Lv. Job:** 5:15

**Rig:** 28L  
**Gas:** Oil

**Depth Start:** 0 ft.  
**Depth Stop:** 0 ft.  
**Feet Drilled:** 0 ft.

**Water Levels:**

- Time: M  
- Depth: M  
- Time: M  
- Depth: M

**Drill Remarks:**

- **Drill on Boulder most of time**
- Drilling & Bailing out by Pass the Boulder + 1 Boulder fell down

**Signed:** T. Cunningham  
**Date:** Oct. 4, 1982
Date: 10-1-51  Job No.: 4-8  Hole No.: 1  Elevation: 10 ft.

Customer: Dept. of Land & Natural Resources  Location: Makaloa - Kauai

Driller: T. Cunningham  Hrs.: 10  Rig: 28-4

Helper: E. Cheung  Hrs.: 10  Gas: 0  Oil: 0  Repairs: 0


Bit-Size: 2-1  Type: 28-4

Casing-Size: 10 in., Length in hole: 100 ft., Amt. Perforated: 0 ft., 0 in.

Depth Start: 0 ft., Depth Stop: 20 ft., Feet Drilled: 20 ft.

Water Levels, Time: M 20 ft., Time: M 20 ft.

<table>
<thead>
<tr>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
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</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-4</td>
<td></td>
<td>W.php</td>
<td></td>
</tr>
</tbody>
</table>
|       | Work on the Buildderthey put in casing to drill deep. We good, cutting pump doesn't feel.  
|       | Bypass Buildder than Buildder move hole no longer   
|       | good.  
|       | (Work total week - accomplished nothing) |

Remarks:

Signed: T. Cunningham  Date: Oct 1, 1951
Date: 9-30- 1952  Job No. 7-3  Hole No. 7  Elev. ft.
Customer: Dept. of Land and Natural Resources, Naloloa, Kauai

Driller: C. CUNNINGHAM  10 Hrs.  Rig 2 5-1
Helper: H. HING  10 Hrs.  Gas Oil
Helper: J. Leben  10 Hrs.  Repairs

Bit-Size 2/1  Type 5/8
Depth Start ft., Depth Stop ft., Feet Drilled
Water Levels, Time M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</tbody>
</table>

Remarks: Accomplished nothing.

Signed: Ray Cunningham  Date: Sept. 30, 1952
Date: 9-29-1952  Job No. 9-5  Hole No.  10 Hrs.  Rig No. 280

Customer: Dept. of Land & Natural Resources  Location: Waikane - Hanu

Driller: J. Cunningham  Helper: E. Ohashi


Bit-Size: 21  Type: Star

Casing-Size: in., Length in hole ft.  in., Amt. Perforated ft.  in.

Depth Start ft., Depth Stop ft., Feet Drilled 

Water Levels, Time M ft., Time M ft.  

Remarks:

- We drill down to about 26 ft. to pass the boulder. But the boring motor is not strong enough to pass it. We had to cut the casing straight up. We can't get the boulder under the bit.
- We repair the bit twice.
- We weld the machine and run it.
- The water temperature is 45 degrees. Put in a new hose of thermostat.

Signed: J. Cunningham  Date: Sept. 29, 1952
**Date:** 9-28-19  
**Job No.:** 50  
**Hole No.:** 5  
**Elevation:** ft.

**Customer:** Dept. of Land & Natural Resources  
**Location:** Makaha, Hawaii

**Driller:** J. Cunningham  
**Hrs.:** 10  
**Rig:** 18

**Helper:** T. Chung  
**Hrs.:** 10  
**Gas:** Oil

**Arv. Job:** 7'  
**Lv. Job:** 5'

**Bit-Size:** 2"  
**Type:** Steel

**Casing-Size:** in., Length in hole ft., in., Amt. Perforated ft., in.

**Depth Start:** ft., Depth Stop ft., Feet Drilled

**Water Levels, Time:** M ft., Time M ft.

---

**Depth** | **Formation** | **Remarks** | **Top**
---|---|---|---
| | | | |

---

**Measurements**

---

**Remarks:**

---

**Signed:** J. Cunningham  
**Date:** Sept. 28, 1952
Date: 9-27-1952
Job No: 9-52
Hole No. Elevation _____ ft.
Customer: H. A. C. M. Re. Co.
Location: Makalea - Kauai
Driller: T. Cunningham
10 Hrs.
Helper: C. Ching
10 Hrs.
Hrs.

Bit Size: 7/8 in., Length in hole _ ft. in. Am. Perforated __________ ft. in.
Casing Size: __________ in., Length in hole __________ ft. in., Amt. Perforated __________ ft. in.
Depth Start __________ ft., Depth Stop __________ ft., Feet Drilled __________

Remarks: We have started readings from lease at depth 11-1'; try all day to get closer.

Signed: Ray Cunningham
Date: Sept 27, 1952
### Drilling Log

**SCOE MOSS COMPANY**

**830 AHUA STREET • HONOLULU, HAWAII 96819**

**TELEPHONE:** (808) 839-6888 • 833-1444

---

**Date:** 9-24-19  
**Job No.:** 4-J 2  
**Hole No.:**  
**Elevation:** ft.  
**Customer:** DEPT. OF LAND & NATURAL RESOURCES  
**Location:** NALAKULUA WELL

**Driller:** T. CUNNINGHAM  
**Hrs.:**  
**Rig No.:** 20

**Helper:** E. CHENG  
**Hrs.:**  
**Gas:**  
**Oil:**  
**Repairs:**  
**Arv. Job:**  
**Lv. Job:**  
**Or. No.:**

**Bit-Size:** 2  
**Type:** STAR

**Casing-Size:** in., **Length in hole:** ft.  
**Amt. Perforated:** ft.  
**Depth Start:** ft., **Depth Stop:** ft., **Feet Drilled:**

**Water Levels:** Time M ft., **Time:** M ft.

---

**Depth** | **Formation** | **Remarks** | **Top**
---|---|---|---
42 | Drill down to 42' or 43' (cave in) |  
23 | Hole caved in, lost our hole  
or 'Plugged off at 22'- 0'-30'- (Mul-inaction) |  

**Remarks:**

---

**Signed:** T. CUNNINGHAM  
**Date:** Sept. 24, 1982
Customer: Dept. of Land Natural Resources  Location: Makaha - well

Driller T. Cunningham  10 Hrs.  Rig 282
Helper E. Ching  10 Hrs.  Gas  Oil
Helper
Arv. Job 1, Lnv. Job 2:

Bit-Size 2 1/4 Type:

Casing-Size in., Length in hole ft. in., Amt. Perforated ft. in.
Depth Start ft., Depth Stop ft., Feet Drilled

Water Levels, Time M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We drill down to 36 but have to bail out twice, split mud, and we go. We try the 21 again but only pass down to 23 ft. off time at bottom.

Remarks: We hear of some builder that pretends I'm in the well.

Signed: T. Cunningham Date: Sept. 23, 1982

Customer: Dept. of Land Natural Resources  Location: Kakaha Kauai

Driller: J. Cunningham  10 Hrs.  Rig: 241
Helper: M. Chung  10 Hrs.  Gas: Oil  Oil

Bit-Size: 2 1/2 Type: Stack

Casing-Size: 10 in., Length in hole: 100 ft.  10 in., Amt. Perforated: 60 ft.  10 in.
Depth Start: 49.9 ft., Depth Stop: 59.9 ft., Feet Drilled:

Water Levels, Time:  9.5 M ft., Time:  10.5 M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We Rabbit Rabbit the roped socket

Remark: working on hole Rowl Drilling for gravel.

Remarks:

Signed: J. Cunningham  Date: Sept. 27, 1984
**DRILLING LOG**

**830 AHUA STREET • HONOLULU, HAWAII 96819**
**TELEPHONE (808) 839-6888 • 833-1444**

Date: 9-21-1952  
Job No.: 9-8  
Hole No.:  
Elevation:  

Customer: Dept. of Land & Natural Resources, Location: Wailua

Driller: T. Kuramochi  
10 Hrs.  
Rig: 280

Helper: E. Chang  
10 Hrs.  
Gas:  
Oil:  
Repaired:  

Arv. Job:  

dL. Job:  

Bit-Size: 21  
Type: 


Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Measurements**

**Remarks:**

We found 13 or 14 ft. of dark cut large and it about 11/2 in. 

Long back to dark cut. Chisel, no footing. 

Signed: Roy Kuramochi  
Date: Sept. 21, 1952
**DRILLING LOG**

**RUSCOE MOSS COMPANY**
830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

**Date:** 9-20-1982  **Job No.:** 4-3-2  **Hole No.:** 8  **Elevation:**

**Customer:** Dept of Land & Natural Resource  **Location:** Mililani, HI 5661

**Driller:** J. CUMMINS  **Hrs.:** 10  **Rig:** 28

**Helper:** E. CHING  **Hrs.:** 10  **Gas:**  **Oil:**

**Arv. Job 2:**  **Lv. Job 3:**  **Hrs.:**  **Or. No.:**

**Bit-Size:** 1-1/2  **Type:** Saw  **Sin.:**

**Casing-Size:**  **in., Length in hole:**  **ft.**  **in., Amt. Perforated:**  **ft.**  **in.**

**Depth Start:**  **ft., Depth Stop:**  **ft., Feet Drilled:**

**Water Levels, Time:**  **M ft., Time:**  **M ft.**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

**Remarks:**

East Pick up the liner another 3" from the down under a couple of hrs to finish hel. We lost mud on the 15" liner, Scape out to 1", set on 2.5" of 16" casing. only 2' down to 2.5' off about 3' or 4' at tubing pullout and bean.

**Signed:** J. CUMMINS  **Date:** Sept. 20, 1982

**Remarks:** We change bits, bite off the shudder.
Date: 9-17-19 8 v. Job No. 9-8 H. Hole No. ___________ Elevation __________ ft.

Customer: Dept. of Land & Natural Resources  Location: Makaheha - Kauai

Driller: T. Cunningham  Helper: C. Ching

<table>
<thead>
<tr>
<th>Shifter</th>
<th>10 Hrs.</th>
<th>10 Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rig</td>
<td>280</td>
<td>Gas</td>
</tr>
<tr>
<td>Oil</td>
<td>Repairs</td>
<td></td>
</tr>
</tbody>
</table>

Arv. Job: 2'  Lv. Job: 5'  Or. No.: ___________

Bit-Size: 2"  Type: Hub

Casing-Size __________ in., Length in hole __________ ft. __________ in., Amt. Perforated __________ ft. __________ in.

Depth Start __________ ft., Depth Stop __________ ft., Feet Drilled __________

Water Levels, Time __________ M __________ ft., Time __________ M __________ ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>30</td>
<td>Same</td>
<td>[Handwritten notes]</td>
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</table>

Measurements

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

Remarks:

"We built out the bugs on the 18" star bit. Sub out the bugs only for use inside casing.

Signed: T. Cunningham  Date: Sept. 17, 1982"
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

**Date:** 9-16-1982  
**Job No.:** 6-S  
**Hole No.:**  
**Elevation:**  

**Customer:** Dept. of Land & Natural Resources  
**Location:** Makaha - Kauai

**Driller:** J. Cunningham  
**Hrs.:** 10  
**Rig:** 286

**Helper:** E. Ching  
**Hrs.:** 10  
**Gas:**  
**Oil:**  
**Repairs:**

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  
**Or. No.:**

**Bit-Size:** 20  
**Type:** Hut

**Casing-Size:**  
**in., Length in hole:**  
**ft., Amt. Perforated:**  
**ft., in.**

**Depth Start:**  
**ft., Depth Stop:**  
**ft., Feet Drilled:**

**Water Levels, Time:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top A</th>
<th>Top B</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>Driller</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** We became in Boulder, 12' to 14' depth
Some Boulder, maybe a few partially loose
Boulder, No. 3 alcub.  
Boulders too large
To much cut.

**Remarks:** Check the dock for the Aqua Gel Papers but not the Brilliants

**Signed:** Ray Cunningham  
**Date:** Sept. 16, 1984
## DRILLING LOG

**830 AHUA STREET · HONOLULU, HAWAII 96819**  
**TELEPHONE (808) 839-6888 · 833-1444**

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. of Land &amp; Natural Resources</td>
<td>Location</td>
<td>Malaekahana · Kaa Kai</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>T. Cunningham</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>28C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>E. Ching</td>
<td>10 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Arv. Job</td>
<td>7</td>
<td>Lv. Job</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Or. No.</td>
<td></td>
<td>Or. No.</td>
<td></td>
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<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>20</th>
<th>Type</th>
<th>Hub.</th>
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<tbody>
<tr>
<td>Depth Start</td>
<td>18</td>
<td>in.</td>
<td>Depth Stop</td>
<td>25 ft.</td>
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<tr>
<td>Water Levels, Time</td>
<td>M ft.</td>
<td>Time</td>
<td>M ft.</td>
<td></td>
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### Measurements

<table>
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<th>Remarks</th>
<th>Top</th>
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<tbody>
<tr>
<td>25</td>
<td>Redrilling</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- We try Pot clean 20" casing
- No good of casing stop until 10-14
- Bind to house, local builder

### Remarks:

- Note Plenty of water
- Some raw

**Signed by Cunningham**  
**Date** Sept. 15 - 1982
Date: 9-14-1982

Job No.: 4-5

Hole No.: Elevation: ____________ ft.

Customer: Dept. of Land & Natural Resources

Location: Maalea - Kauai

Driller: Cunningham

Helper: ____________

Arv. Job: ____________

Rig: ____________

Hrs. Gas.: ____________

Hrs. Oil.: ____________

Hrs. Repairs: ____________

Or. No.: ____________

Bit Size: 20

Type: H-6


Depth Start: ________ ft., Depth Stop: ________ ft., Feet Drilled: ________

Water Levels, Time: ________ M ft., Time: ________ M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Drill</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

- Large Boulder Slow-up Drilling.
- We Rebuild the Stem Guide 3 Hrs.
- Rain Most of the Day

Signed: Cunningham

Date: Sept. 14 - 1982
**DRILLING LOG**

830 Ahua Street • Honolulu, Hawaii 96819
Telephone (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>9-13-71</th>
<th>Job No.</th>
<th>4-82</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>ft.</th>
</tr>
</thead>
</table>

Customer: Dept. of Lands & Natural Resources  
Location: Makalani - Kahu

Driller: T. Cunningham  
Rig: 286

Helper: F. Ching  
Gas: Oil

Arv. Job: 7'  
Lv. Job: 5'

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>H6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>in., Length in hole</th>
<th>ft.</th>
<th>in., Amt. Perforated</th>
<th>ft.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft., Depth Stop</th>
<th>ft., Feet Drilled</th>
<th>ft.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft., Time</th>
<th>M</th>
<th>ft.</th>
</tr>
</thead>
</table>

**Depth**

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refill</td>
<td></td>
</tr>
</tbody>
</table>

**Remark:**  
They drill off load.  

**Remarks:**  
Break the stem guide off.

Signed: T. Cunningham  
Date: Sept. 13, 1982
Date: 9-10 - 1982  Job No: 4-82  Hole No.  Elevation

Customer: Dept. of Land & Natural Resources  Location: Makaha - well

Driller: J. Cunningham  10 Hrs.  Rig: 284
Helper: E. Ching  10 Hrs.

Bit-Size:  Type:  Size:
Casing-Size:  in., Length in hole  ft.  in., Amt. Perforated  ft.  in.
Depth Start:  ft., Depth Stop: 42 ft., Feet Drilled
Water Levels, Time:  M.  ft., Time:  M.  ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formaion</th>
<th>Remarks</th>
<th>Top</th>
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</thead>
<tbody>
<tr>
<td>0</td>
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</tbody>
</table>

Remarks: We have 3 loads, 5 tons each, hand in to us. Fill well up to main surface. Have some large chunks to fill.

Prepar to Refill, some large boulders out.

Signed: J. Cunningham  Date: Sept. 10, 1982
#### DRILLING LOG

**RUSCOE MOSS COMPANY**

830 ANUA STREET • HONOLULU, HAWAII 96819
TELEPHONE: (808) 839-6888 • 833-1444

Date: 9-9-19

<table>
<thead>
<tr>
<th>Job No.</th>
<th>8r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hole No.</td>
<td>8r</td>
</tr>
<tr>
<td>Elevation</td>
<td>ft.</td>
</tr>
</tbody>
</table>

Customer: Dept. of Land & Natural Resources, Makaleha, Kauai

**Driller:** Tungwehaira

- 10 Hrs. Rig 281

**Helper:** E. Ching

- 10 Hrs. Gas
- 8 Hrs. Oil
- Hrs. Repairs

Arv. Job

<table>
<thead>
<tr>
<th>Lv. Job</th>
<th>Hrs.</th>
</tr>
</thead>
</table>

---

**Bit-Size:**

- Type

**Casing-Size:**

- in., Length in hole ft.

**Depth Start:**

- ft., Depth Stop 49 ft., Feet Drilled

**Water Levels, Time:**

- M ft., Time M ft.

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<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

We try to pump & knock out the large boulders near the surface, no good, only knock down a few of the very small ones, they still plug off at depth 50ft.

We call Make arrangements for truck to haul gravel out for us.

Remarks: Take truck into Lihue Water Co., Pick up one joint 16' x 10' casing

Signed: JAY CUNNINGHAM  Date: Sept. 9, 1982
Date 9-8-1982  Job No. 4-82  Hole No.  Elevation ft.
Customer Dept of Land & Natural Resources  Location Makaleha - Kauai
Driller T. Qunningham 10 Hrs. Rig 28c
Helper  Hrs. Gas
Helper E. Ching 10 Hrs. Repairs

Bit-Size in., Length in hole ft. in., Amt. Perforated ft. in.
Casing-Size ft., Depth Stop ft., Feet Drilled
Depth Start ft., Time M
Water Levels, Time M

Measurements
Depth Formations Remarks Top

We Pull out all the Casing 148 ft. of 14" - 40' of 18"

George Bitte, put on the 20" bit

Remarks: Hole Came a lot after Removing the Casing

Signed T. Ounningham Date Sept. 8, 1982
<table>
<thead>
<tr>
<th>Date</th>
<th>8-7-1982</th>
<th>Job No.</th>
<th>4-82</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>ft.</th>
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</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. of Land &amp; Natural Resources</td>
<td>Location</td>
<td>Malakolua, Kauai</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Driller</td>
<td>Cunningham</td>
<td>10 Hrs.</td>
<td>Rig 284</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>F. Cheung</td>
<td>10 Hrs.</td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Av. Job</td>
<td>2</td>
<td>Ul. Job</td>
<td>5</td>
<td>Or. No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>14</td>
<td>Type</td>
<td>Star</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>487</td>
<td>ft.</td>
<td>Depth Stop</td>
<td>492</td>
<td>ft.</td>
<td>Feet Drilled</td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>173</td>
<td>ft.</td>
<td>Time</td>
<td>M</td>
<td>ft.</td>
</tr>
</tbody>
</table>

### Measurements

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<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>487</td>
<td>Ford Blue Pole, decomposed shale</td>
<td></td>
</tr>
<tr>
<td>492</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Remarks:

- Rain morning, welding bit, repair 2/813.

Signed: Cunningham  Date: 8-7-1982
## DRILLING LOG

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819
TELEPHONE (808) 839-6888 • 833-1444

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<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
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<tbody>
<tr>
<td>9-3</td>
<td></td>
<td>0623-A</td>
<td>520 ft</td>
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**Customer**

- Dept. of Land & Natural Resources

**Location**

- Hānale'i - Hawaii

---

<table>
<thead>
<tr>
<th>Driller</th>
<th>Helper</th>
<th>Hrs.</th>
<th>Rig</th>
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<tbody>
<tr>
<td>J. Cunningham</td>
<td>E. Ching</td>
<td>10 Hrs.</td>
<td>284</td>
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<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
<th>Type</th>
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<tbody>
<tr>
<td>Gas</td>
<td></td>
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</tr>
<tr>
<td>Oil</td>
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<table>
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<tr>
<th>Bit-Size</th>
<th>Type</th>
<th>Size</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft.</th>
<th>Depth Stop</th>
<th>ft.</th>
<th>Feet Drilled</th>
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</thead>
<tbody>
<tr>
<td>481</td>
<td></td>
<td>487</td>
<td></td>
<td>6</td>
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<table>
<thead>
<tr>
<th>Water Level</th>
<th>Time</th>
<th>Depth</th>
<th>Time</th>
<th>M</th>
<th>ft.</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>481</td>
<td>Hand obtained, slight, decomposed shale.</td>
<td></td>
<td>A</td>
</tr>
</tbody>
</table>

---

| Remarks: | Hand obtained, slight, decomposed shale. |

---

<table>
<thead>
<tr>
<th>Signed</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Cunningham</td>
<td>Sept. 3, 1986</td>
</tr>
</tbody>
</table>
DRILLING LOG

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

Date 9-2-1952  Job No. 4-52  Hole No. Elevation ft. 
Customer Dept of Land & Natural Resource Location Makaha, Oahu

Driller T. Cunningham  10 Hrs.  Rig 28
Helper                  384
Helper E. Coping  10 Hrs.  Repairs
Arv. Job 7:  Lv. Job 3: 

Bit-Size 14  Type
Casing Size in., Length in hole ft. in., Amt. Perforated ft. in.
Depth Start 475 ft., Depth Stop 481 ft., Feet Drilled 6

Water Levels, Time  A.M. 173 ft., Time  M  ft. 

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.75</td>
<td>HARD-BROWN Blue Rock - Tracks of Decomposed Blue Rock</td>
<td></td>
</tr>
<tr>
<td>4.81</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Beam some build up the rig. Some very hard streak of Rock.

Signed T. Cunningham  Date Sept 2, 1952
### Drilling Log

**Ruscoe Moss Company**

830 Aua Street • Honolulu, Hawaii 96819
Telephone 808-839-6888 • 833-1444

#### Drilling Log

- **Driller:** T. Cunningham
- **Helper:** E. Ching

**Job Information**

- **Date:** 9-1-82
- **Job No.:** 482
- **Hole No.:** 1
- **Customer:** Dept. of Land & Natural Resources
- **Location:** Makalapa - Kauai

**Time and Measurements**

- **Drilling Time:**
  - **Gas:** 10 Hrs.
  - **Oil:**
  - **Repairs:**

- **Arrival & Leaving:**
  - **Arv. Job:** 7
  - **Lv. Job:** 12

- **Casing Information:**
  - **Size:** 14 in.
  - **Type:** PA

- **Depth Start & Stop:**
  - **Start:** 470 ft.
  - **Stop:** 750 ft.

- **Drilled Depth:**
  - **Feet Drilled:**

- **Water Levels:**
  - **Time:** M 17.3 ft.
  - **Time:** M 4.5 ft.

**Formation Details**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>470</td>
<td>Hard-brown shale, streaks of decomposed blue code</td>
<td></td>
</tr>
<tr>
<td>475</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

- We worked for water supply at 4 HRC.
- Two wells filled to surface concrete.
- Surface to 50' 8 yards total used both wells.

**3 1/2 Yards**

**4.5 ft.**

**Rain:** Pulled out the conductor casing from both wells.

**Signed:** T. Cunningham  Date: Sept 1, 1982
Date: 8-31-19

Job No.: S-2

Hole No.: 2

Elevation: 50 ft.

Customer: Board of Water Supply

Location: Makaha - South Oahu

Driller: Cunningham

8 Hrs.

Rig 281

Helper: E. Ching

8 Hrs.

Gas

Oil

Helper

1 Hrs.

Repairs

Arv. Job

Tv. Job

Or. No.

Bit-Size

Type

Casing-Size

in., Length in hole

ft.

in., Amt. Perforated

ft.

in.

Depth Start

ft., Depth Stop

ft., Feet Drilled

Water Levels, Time

M ft., Time

M ft.

We will 2 holes with gravel up to
50' of surface.

Use about 50 tons gravel

(42.5 tons - Home about 15 tons)

Remarks: We will 15 tons first well

35 tons - 2nd well

Signed: Cunningham

Date: Aug. 31, 19
# Drilling Log

**Date:** 8-30-1985  
**Job No.:** 4-5  
**Hole No.:** 1  
**Elevation:**  

**Customer:** Dept. of Land & Natural Resources  
**Location:** Makaleha - Kauai  

**Driller:** T. Cunningham  
**Rig:** 281  
**Helper:** E. Ching  

**Helper:**  
**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  
**Or. No.:**  

**Bit-Size:** 1 4  
**Type:**  
**Stake:**  

**Casing-Size:**  
**Length in hole:**  
**in., Amt. Perforated:**  
**ft.**  
**in.**  

**Depth Start:** 4-6-5  
**Depth Stop:** 4-7-0  
**Feet Drilled:**  

**Water Levels:**  
**Time:**  
**A.M.** 175  
**M.**  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top A</th>
<th>Top B</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-6-5</td>
<td>Hard Brown, Feldspar</td>
<td>[Remarks]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-7-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** We use 9 ft. hose leading up to top of pump  
Ship out to Han, use in brother.  

**Signed:** Ray Cunningham  
**Date:** Aug 30, 1985
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** 8-27-1952  **Job No.:** 4-82  **Hole No.:** __  **Elevation:** __ ft.

**Customer:** Dept of Land & Natural Resources  **Location:** Makaleha, Kauai

**Driller:** T. CUNNINGHAM  **10 Hrs.**  **Rig:** 286

**Helper:** E. CHING  **10 Hrs.**

**Arv. Job:** __  **Lv. Job:** __  **Or. No.:** __

**Bit-Size:** __  **Type:** __  **Star:** __

**Casing-Size:** __ in., Length in hole __ ft. __ in., Amt. Perforated __ ft. __ in.

**Depth Start:** 457 ft., **Depth Stop:** 465 ft., **Feet Drilled:** 8

**Water Levels, Time:** A.M. 173 ft., **Time:** M. __ ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>457</td>
<td>Hand, Raw, Clay, weed - more weed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>465</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

- Bit loss wear pretty much
- Work estimate 15 hrs.

**Signed:** T. CUNNINGHAM  **Date:** Aug. 27, 1952
### Drilling Log

**Date:** 8-26-1955  
**Job No.:** 4-82  
**Hole No.:**  
**Elevation:** ft.  

**Customer:** Dept. of Land & Natural Resources  
**Location:** Kailua - Oahu  

**Driller:** T. Cunningham  
**Hrs.:** 10  
**Rig:** 2s  

**Helper:** E. Ching  
**Hrs.:** 10  
**Gas:**  
**Oil:**  

**Arv. Job:**  
**Lv. Job:**  
**Repairs:**  
**Hrs.:**  
**Or. No.:**  

**Bit-Size:** 14  
**Type:** SAR  

**Casing-Size:** in., Length in hole ft., Amt. Perforated ft. in.  

**Depth Start:** 450 ft.  
**Depth Stop:** 457 ft.  
**Feet Drilled:** 7  

**Water Levels, Time:** A.M. 12.5 ft., Time M. ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
</tr>
</thead>
</table>
| 450   | Hard Iron Clay Fride  
| 457   |  

**Remarks:**  
Early Hard. The 18" + 20" Coming Out  
From Drift - 20" Bit  

**Signed:** T. Cunningham  
**Date:** Aug. 30, 1955
**DRILLING LOG**

830 AHUJA STREET • HONOLULU, HAWAII 96819
TELEPHONE: (808) 839-6888 • 833-1444

---

**Date:** 8-25-1982  
**Job No.:** 4-82  
**Hole No.:**  
**Elevation:** ft.

**Customer:** Department of Land and Natural Resources  
**Location:** Mililani - OAHU

**Driller:** T. Cunningham  
**10 Hrs.**  
**Rig:** 281

**Helper:** E. Ching  
**10 Hrs.**  
**Gas:**  
**Oil:**  
**Repairs:**

**Arv. Job:**  
**Lv. Job:**  
**1 Hrs.**  
**Or. No.:**

---

**Bit-Size:** 14  
**Type:** STAR

**Casing-Size:** in., Length in hole ft., in., Amt. Perforated ft. in.

**Depth Start:** 435 ft., Depth Stop 450 ft., Feet Drilled 15

**Water Levels, Time:** 4 M 173 ft., Time M ft.

---

**Depth**  
**Formation**  
**Remarks**  
**Top**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>435</td>
<td>Red, sh. Brown Clay &amp; Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>450</td>
<td></td>
<td>Some Clinker</td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:**

**Some rain, muddy**

**Signed:** T. Cunningham  
**Date:** Aug. 25, 1982

---
Date: 8-24-1982  
Job No.: 4-82  
Hole No.:  
Elevation:  

Customer: Dept. of Land & Natural Resources  
Location: Makapeha, Kauai  

Driller: Cunningham  
Hrs.: 10  
Rig: 586  

Helper: E. Chung  
Hrs.: 10  
Gas:  
Oil:  
Repairs:  

Arv. Job: 7  
Lv. Job: 5  

Bit-Size: 14  
Type: STAR  


Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: AM / PM  

Remarks:  

---

We changed drill cable  
100 feet, Repaired  
Put new 1/8 cable (Pos. & Pull)  

---

Remarks:  

---

Signed: (signature)  
Date: Aug 24 1982
**DRILLING LOG**

**830 AHUA STREET • HONOLULU, HAWAII 96819**
TELEPHONE: (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>8-23-1982</th>
<th>Job No.</th>
<th>4-82</th>
<th>Hole No.</th>
<th>Elevation ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. of Land &amp; Natural Resources</td>
<td>Location</td>
<td>Makaleha — Kauai</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>T. Cunningham</td>
<td>10 Hrs.</td>
<td>Rig 281</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>E. Chile</td>
<td>10 Hrs.</td>
<td>Gas Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td>2'</td>
<td>Lv. Job 3'</td>
<td>Repairs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Bit-Size | 14 | Type: STAR |
| Casing-Size | in., Length in hole | ft. in., Amt. Perforated | ft. in. |
| Depth Start | 425 ft. | Depth Stop | 4-35 ft. | Feet Drilled | 10 |

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.25</td>
<td>Hard Rock</td>
<td>Brown Clay</td>
<td>Photo, Mostly Rock</td>
</tr>
<tr>
<td>4.35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Steam as we drill. Base screen.

**Signed:** T. Cunningham Date: Aug. 23, 1982

Customer  Dept. of Land and Natural Resources  Location Waialua - well Hauai

Driller  T. Cunningham  8 Hrs.  Rig 291
Helper  F. Ching  8 Hrs.  Gas
Helper  E. Ching  5 Hrs.  Oil

Bit Size  4  Type  Y-90
Casing Size  in., Length in hole  ft.  in., Amt. Perforated  ft.  in.
Depth Start  415 ft., Depth Stop  435 ft., Feet Drilled 70


<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Tap</th>
</tr>
</thead>
<tbody>
<tr>
<td>415</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>425</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: The mud we bail is a little more redish brown the last 10'

Signed  T. Cunningham  Date  Aug. 20, 1982
Date: 8-19-19  
Job No.: 4-82  
Hole No.: 9083-04  
Elevation: 520 ft.

Customer: Dept. of Land & Natural Resources  
Location: Makawelo, Kauai

Driller: Cunningham  
10 Hrs.  
Rig: 286

Helper: E. Ching  
10 Hrs.  
Gas:  
Oil:

Arv. Job: 7'  
Lv. Job: 0'  
Repairs:  
Or. No.: 

Bit-Size: 14  
Type: STAR


Depth Start: 400 ft., Depth Stop: 415 ft., Feet Drilled: 15


<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>415</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:
- Change out of the Top to Pickup
- Formation not realized, more time used in cleaning

Signed: Troy Cunningham  
Date: Aug. 19, 1982
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** 8-18-1982  
**Job No.:** 7-82  
**Hole No.:** D253-04  
**Customer:** DEPT. OF LAND & NATURAL RESOURCES  
**Location:** MAALOA - WAIKU - KAUAI

<table>
<thead>
<tr>
<th>Driller</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. CHINGHAM</td>
<td>284</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>F. CHING</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>F. CHING</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>STAR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>Length in hole</th>
<th>ft.</th>
<th>Amt. Perforated</th>
<th>ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Depth:** 390 ft.  
**Stop:** 400 ft.  
**Feet Drilled:** 10

**Water Levels:** Time A M 129 ft., Time M

---

**Depth**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>390</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
- Rain nearing
- Beam some

---

**Signed:**

Signed by: J. CHINGHAM  
Date: Aug. 18, 1982
Date: 8-17 - 1982 Job No: 4-52 Hole No: 263-04 Elevation: 529 ft.

Customer: Dept of Land & Natural Resources

Location: Mākaha - Kauai

Driller: J. Cunningham 10 Hrs. Rig 284

Helper 10 Hrs.

Helper: E. Ching 10 Hrs.

Arv. Job: 2

Drilled: 15


Depth: 375 ft., Depth Stop: 590 ft., Feet Drilled: 15

Formation: Hard-brown clay and silt, with hard fractures

Remarks: Have to tear up all the hole we drill as we go. Hole back off. I pick up the 1½ casing and lost one.

Rain must wait any.

Signed: [Signature]

Date: Aug. 17 - 1982
Date: 8-16-1952  Job No.: 4-8  Hole No.: 363-04  Elevation: 520 ft.

Customer: Dept. of Land & Natural Resources  Location: Makalapa - Kauai

Driller: J. Cunningham  10 Hrs.  Rig: 284
Helper: E. Ching  10 Hrs.  Gas:  Oil
Arv. Job: 7'  Lv. Job:  8'  Or. No.:  

Bit-Size: Star 14  Type: Star
Depth Start: 363 ft.  Depth Stop: 775 ft.  Feet Drilled: 12

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>363</td>
<td>Hard brown clay士de, with hard strata.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>375</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:
Earl Ching picked up the ship of cable from the dock.

Lot of rain.

Signed: [Signature]  Date: Aug 16, 1952
Date 8-13-1982  
Job No. 4-82  
Hole No. 0623-04  
Elevation 5202 ft.

Customer: DEPT. OF LAND & NATURAL RESOURCES  
Location: MAKALEHA, KAUAI

Driller: F. CUNNINGHAM  
Hrs. 10  
Rig D82

Helper: E. CHING  
Hrs. 10  
Repairs

Arr. Job 2  
Lv. Job 3  
Hrs.

Bit Size: 4  
Type: STAR

Casing Size: 355  
In., Length in hole: 91 ft.  
In., Amt. Perforated: 360 ft.

Depth Start: 355 ft.  
Depth Stop: 363 ft.  
Feet Drilled 8

Water Levels, Time: 7:30 A.M.  
91 ft., Time: M.  
ft.

Depth  
Formation  
Remarks  
Top

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>355</td>
<td>HARD BLUE ROCK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>360</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>363</td>
<td></td>
<td>drilling ease up a little at 360</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Build up clay line 4 lbs.  

Signed: FAY CUNNINGHAM  
Date: Aug. 13, 1982
Date: 8-12-72  Job No: 4-82  Hole No: 0623-04  Elev. 520 ft.
Customer: Dept of Land & Natural Resources  Location: Makaleha - Kauai

Driller: J. Cunningham  10 Hrs.  Rig: 281
Helper: E. Ching  10 Hrs.  Gas:  Oil:  Repairs: 
Arv. Job: 7'  Lv. Job: 5'  Or. No: 

Bit Size: 14  Type: SAE
Depth Start: 75.2 ft. Depth Stop: 75.5 ft. Feet Drilled: 3
Water Levels, Time: 2' M 66 ft. Time: M ft.

Depth | Formation   | Remarks
--- | --- | ---
352  | Three Blue Rock | Very Hard
355  |

we have snare string tangling in the drill line. Cut off 30 ft.
Think the rope too big

Remarks: we have some clay came down during the first water level came up some.

Signed: J. Cunningham  Date: Aug 12, 1982
Date: 8-11-82
Job No: J-82
Hole No: 0623-04
Elevation: 520 ft.

Customer: Department of Natural Resources
Location: Makaloha - Kauai

Driller: Cunningham
10 Hrs.
Rig: 284

Helper: E. Ching
10 Hrs.
Gas
Oil

Arv. Job: 7:00
Lv. Job: 5:00

Bit Size: 14
Type: star

Casing Size: 4-1/2 in.
Length in hole: 39 ft.
Amt. Perforated: 2 ft.

Depth Start: 342 ft.
Depth Stop: 352 ft.
Feet Drilled: 4

Water Level: M 9.3 ft.
Time: M 9.4 ft.

Formation
Remarks
Top

342
Hard Blue Rock

**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 833-6688 • 833-1444

---

**Date** 8-10-19  **Job No.** 78

**Hole No.** 0833-04  **Elevation** 520 ft.

**Customers**

Dept. of Land and Natural Resources  Location MAKALOA - KAUAI

---

**Driller** J. CUNNINGHAM 10 Hrs.  Rig L

**Helper** E. CHING 10 Hrs.  Gas

**Helper**  Hrs.  Repairs


---

**Bit Size** 14  **Type** fair

**Casing-Size** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start** 34 ft., Depth Stop 148 ft., Feet Drilled 4

**Water Levels, Time** 2 AM 6:34 ft., Time 7:50 ft.

---

**Depth**  **Formation**  **Remarks**  **Top**

344  **Harp Blue Rock,**  Solid

---

**Remarks:** Well the bit seizes, Rather the Clayham Stone

---

**Signed** JAY CUNNINGHAM  Date Aug. 10, 19
Date: 8-9-1982  Job No. 4-82  Hole No. 0623-04  Elevation: 520 ft.

Customer: Dept. of Land & Natural Resources  Location: Makalei - Kauai

Driller: T. Cunningham  10 Hrs.  Rig: 98
Helper: 10 Hrs.  Gas:
Helper E. Ching  10 Hrs.  Oil:
Arv. Job: 11 Hrs.  Repairs:
Lv. Job: 22 Hrs.  Or. No.:

Bit-Size 14  Type 542

Depth Start: 341 ft., Depth Stop: 344 ft., Feet Drilled: 3
Water Levels, Time: AM 48 ft., Time: M

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>341</td>
<td>Hard Blue Rock</td>
<td>making manual pretty cutting</td>
<td></td>
</tr>
<tr>
<td>344</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>344</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Measurements

Signed: T. Cunningham  Date: Aug. 9, 1982

Remarks: Stimulation one HR- very hard drilling.
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

Date 8-6-1982  Job No. 4 - 82  Hole No. 063204  Elevation 520 ft.

Customer Department of Land and Natural Resources  Location Makaleha - Kauai

Driller: Cunningham  10 Hrs.  Rig 282
Helper: E. Ching  10 Hrs.
Arv. Job 7  Lv. Job 0  Or. No. __________

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>ST12</td>
</tr>
</tbody>
</table>

Casing-Size _______ in., Length in hole _______ ft. _______ in., Amt. Perforated _______ ft. _______ in.

Depth Start 340 ft., Depth Stop 467 ft., Feet Drilled 1

Water Levels, Time AM 34 ft., Time PM 46 ft.

### Depth Information

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>141</td>
<td>HARD LIME ROCK</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

- Only drill about 1/2 FT - very hard.
- Have Team to help with drill, hole to south.

**Remarks:**

- Help Earl getting the truck & rig ship out to Hon. First time to put on a new starter on International. Took about 3 hours total.
- Lift the 1 1/2” casing a little ok.

Signed: Cunningham  Date: Aug. 6, 1982
Date: 8-5-1982  Job No. 4-82  Hole No. 0623-D  Elevation: 520 ft.
Customer: Dept. of Land & Natural Resources  Location: Mauelno - Hauiki

Driller: T. Quangphan  10 Hrs.  Rig: 2K1
Helper: T. Ching  10 Hrs.  Gas: Oil

Bit Size: 14 - Type: Star
Casing Size: in., Length in hole ft.  in., Amt. Perforated ft.  in.
Depth Start: 335 ft., Depth Stop: 540 ft., Feet Drilled: 5

Water Levels, Time 2.1 ft., Time 4.24 ft.  23 ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>335</td>
<td>HARD BLUE ROCK</td>
<td>Better the bit break soon</td>
<td></td>
</tr>
<tr>
<td>540</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: WATER LEVEL START TO DROP in the afternoon at dept. 335'

Signed: Troy Q. Hingston  Date: Aug. 5, 1982
Date: 8-4-1982  
Job No.: 4-82  
Hole No.: 2623-04  
Elevation: 520 ft.

Customer: Dept. of Land & Natural Resources  
Location: Makaha - Kualoa

Driller: Cunningham  
10 Hrs.

Helper: E. Ching  
10 Hrs.

Arv. Job: 7  
Lv. Job: 5  
Or. No.: 

Bit-Size: 14  
Type: Star


Depth Start: 380 ft., Depth Stop: 335 ft., Feet Drilled: 5

Water Levels, Time: M 9 ft., Time: M 

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>380</td>
<td>HARD Blue Rock</td>
<td>More hard</td>
<td></td>
</tr>
<tr>
<td>335</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: By some Pecan, Hole 90' off.
2 Help Earl Yale rig out to dock 2 hrs.

Signed: Troy Cunningham  
Date: Aug. 4, 1982
Date: 8-3-1982  
Job No.: 452  
Hole No.: 062304  
Elevation: 520 ft.

Customer: C.O. (not legible)  
Location: Mars Liquid - Kauai

Driller:  
Helper:  
Arv. Job: 7  
Lv. Job: 5

Rig: 284  
Gas:  
Oil:  
Repairs:  
Or. No.:  

Bit-Size: 14  
Type: STAR


Depth Start: 320 ft., Depth Stop: 330 ft., Feet Drilled: 10

Water Levels, Time: M 9 ft., Time: M 9 ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>320</td>
<td>Med. &amp; Hard-rock Grey Sand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>328</td>
<td>Hard Blue Sand</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Plenty wear on bit, huge well 3 Ton, Ball clay & little

Signed: Ray Cunningham  
Date: Aug 3, 1982
**DRILLING LOG**

**830 AHUA STREET • HONOLULU, HAWAII 96819**

**TELEPHONE (808) 839-6888 • 833-1444**

<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-2-1982</td>
<td>4-8</td>
<td>0628-04</td>
<td>520° ft.</td>
</tr>
</tbody>
</table>

**Customer**

Dept of Land & Natural Resources - Location: Makaha - Unit 1

**Driller**

J. Cunningham 10 Hrs.

**Helper**

E. Ching 10 Hrs.

**Arv. Job**

7 Hrs. 616 Job 2 Hrs.

**Bit-Size**

14

**Casing-Size**


**Depth Start**

315 ft., Depth Stop 520 ft., Feet Drilled 5

**Water Levels**

Time M 7 ft., Time M 2 ft.

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

We fixed the lift and took the time.

Do some reaming on hard rock.

**Signed**

J. Cunningham Date Aug. 3, 1982
Date: 7-30-1981  Job No.: Hole No.: 0623-04  Elevation: 520 ft.

Customer: Dept. of Land & Natural Resources  Location: Makahena - Kauai

Driller: T. Cunningham  10 Hrs.  Rig: 252

Helper: E. Ching  10 Hrs.


Blk-Size: 14  Type: S/AR2


<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>309</td>
<td>Med &amp; Hard-Dark Grey Rock</td>
<td></td>
</tr>
<tr>
<td>315</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Late of wear on the Kit legs, build up the mix 3 time

Signed: T. Cunningham  Date: July 30, 1981
**DRILLING LOG**

**RUSCOE- MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6555 • 833-1444

---

**Date:** 7-29-1985  
**Job No.:** 84-64  
**Hole No.:** 0663.04  
**Elevation:** 520 ft.

**Customer:** DEPT. OF LAND & NATURAL RESOURCES  
**Location:** MAKALOA - KAUAI

---

**Driller:**  
**Helper:**

---

**Rig:** 
**Gas:**

---

**Oil:**

---

**Reps.:**

---

**Or. No.:**

---

**Bit-Size:** 14  
**Type:** S-712

---

**Casing-Size:** in., Length in hole ft.  
**Amt. Perforated:** ft. in.

---

**Depth Start:** 302 ft.  
**Depth Stop:** 309 ft.  
**Feet Drilled:** 7

---

**Water Levels, Time:** M 9/10 ft., Time M ft.

---

**Formation:** Med. 4 HARD-PAV Chinset

---

**Remarks:** Build up to test water

---

**Signed:**  
**Date:** July 29, 1985
DRILLING LOG

Date: 7-28-1982  Job No.: 9-82  Hole No.: 0623-04  Elevation: 520 ft.
Customer: Dept. of Land and Natural Resources  Location: Makaleha, Hawaii

Driller: T. CUNNINGHAM  10 Hrs.  Rig: 204
Helper: F. CHING  10 Hrs.  Gas:  Oil
Arv. Job: 7;  Iv. Job: 5;  Hrs. Repairs:  

Depth Start: 290 ft., Depth Stop: 302 ft., Feet Drilled: 12

Water Levels, Time: M  ft., Time: M  ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>290</td>
<td>Brown Clay with Tack, Hard Streaks</td>
<td></td>
</tr>
<tr>
<td>299</td>
<td></td>
<td></td>
</tr>
<tr>
<td>290</td>
<td>Med. to Hard - Dark Gray Rock, Some Clay</td>
<td></td>
</tr>
<tr>
<td>302</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Earl Welding. Repaired the 1/8" pit on the ground.

I refer the firm after investigation.
We hit set up the Conductive 4" casing twice, API Back down is OK.

Signed: [Signature]  Date: July 28, 1982
## Drilling Log

**Date:** 7-27-208

**Job No.:** 4-8

**Hole No.:** 0623-04

**Elevation:** 500 ft.

**Customer:** Dept. of Land & Natural Resources

**Location:** Mala Loha - Kauai

### Driller:
- **Name:** J. Cunningham
- **Hours:** 10 hrs.

### Helper:
- **Name:** E. Ching
- **Hours:** 10 hrs.

### Arv. Job:
- **Hours:**

### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>279</td>
<td>Brown Clay with Rock hard Spots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>290</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Remarks:

- Time spent on hard ground.
- Hole try going off all the time due to drift.

**Signed:** J. Cunningham

**Date:** July 27, 1982
## DRILLING LOG

**Address:**
830 Ahua Street • Honolulu, Hawaii 96819
Telephone (808) 839-6888 • 833-1444

---

**Date:** 7-26-1982
**Job No.:** 7-8
**Hole No.:** 0623-04
**Elevation:** 520 ± ft.

**Customer:** Department of Land and Natural Resources
**Location:** Mahalea, Kauai

---

**Driller:** T. Cunningham 10 Hrs.  
**Gas Oil**  
**Helper:** E. Ching 10 Hrs.  
**Rig:** 282  
**Helper:**  
**Arv. Job:** 7  
**Lv. Job:** 5  
**Or. No.:**  

---

**Bit-Size:** 14  
**Type:** T-13  
**Casing-Size:** in., Length in hole ft. in., Amt. Perforated ft. in.  
**Depth Start:** 360 ft., Depth Stop 278 ft., Feet Drilled 19  
**Water Levels, Time:** M 9:34 ft., Time M ft.  

---

### Depth | Formation | Remarks | Top
---|---|---|---
256 | Brown Clay, with Peck Sand Streets |  
227 |  

---

**Remarks:** Hole to off bottom 1/2 line

---

**Signed:** T. Cunningham  
**Date:** July 26, 1982
**Drilling Log**

**Date:** 7-23 - 19 **Job No.:** 4-5 **Hole No.:** ft. **Elevation:** ft.

**Customer:** DEPT. OF LAND & NATURAL RESOURCES  **Location:** MAKALEHA, KAUAI

**Driller:** T. CUNNINGHAM  **Helper:** E. O HING  **Arv. Job:** 7. **Lv. Job:** 5.  **Rig:** 282  **Gas:**  **Oil:**  **Repairs:**

---

**Bit-Size:** 14  **Casing-Size:** in., Length in hole ft. in., Am. Perforated ft. in.  **Depth Start:** 255 ft., Depth Stop: 260 ft., Feet Drilled: 5

**Water Levels, Time:** M. **ft., Time:** M. **ft.**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>255</td>
<td>Grey Silt &amp; Clay, with had. streaks</td>
<td>Drilling Clay in the bottom.</td>
<td>A</td>
</tr>
<tr>
<td>256</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>256</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>260</td>
<td></td>
<td></td>
<td>A</td>
</tr>
</tbody>
</table>

**Remarks:** We broke up the 14" Casing a little and back down more of the casing.

**Remarks:** I hear on 2 places hard streak about 6 or 7 hrs after hole go off, looks better.

**Signed:** T. CUNNINGHAM  **Date:** July 23, 1985
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96818
TELEPHONE (808) 838-6888 • 833-1444

---

**Date:** 7-22-1982  
**Job No.:** 4-82  
**Hole No.:**   
**Elevation:** ft.  
**Customer:** DEPT. OF LAND & NATURAL RESOURCES  
**Location:** MAKALEA KAILUA

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hrs.</th>
<th>Rig</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T. CUNNINGHAM</td>
<td>10</td>
<td>285</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. CHING</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Arv. Job</th>
<th>Lv. Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>7'</td>
<td>5'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>To do somereaming on the hole.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top</th>
</tr>
</thead>
</table>

---

**Bit-Size:** 4"  
**Type:** 5748

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>in., Length in hole</th>
<th>ft.</th>
<th>in., Amt. Perforated</th>
<th>ft.</th>
<th>in.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Depth Start:** 24.5 ft.  
**Depth Stop:** 55 ft.  
**Feet Drilled:** 10

**Water Levels, Time:**  
**M. 94 ft., Time:** M. 10 ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.5</td>
<td>Grey Rock &amp; Clay with hard streaks</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:** To do some reaming on the hole.

**Signed:** T. CUNNINGHAM  
**Date:** July 22, 1982
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819  
TELEPHONE (808) 833-6988 • 833-1444

---

**Date:** 7-21-1982  
**Job No.:** 48  
**Elevation:** ft.  
**Location:** MAKALEHA, TAHII

**Customer:** DEPT. OF LAND & NATURAL RESOURCES

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hours</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>T. CUNNINGHAM</td>
<td>10</td>
<td>28C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hours</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. CHING</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Arv. Job:** 7  
**Lv. Job:** 3

---

**Bit Size:** 14  
**Type:** STARK

**Casing Size:** in., Length in hole ft., Amt. Perforated in.

**Depth Start:** 230 ft.  
**Depth Stop:** 245 ft.  
**Feet Drilled:** 15

**Water Levels, Time:** M 95 ft., Time M  ft.

---

**Depth** | **Formation** | **Remarks** | **Top** | **Measurements** | **A** | **B**
--- | --- | --- | --- | --- | --- | --- |
230 | Redish Brown & Grey Rock, Clay | | | | |
243 | | | | | |
243 | Grey Rock of Clay with hard streaks | | | | |
245 | | | | | |

**Remarks:**

---

**Signed:** T. CUNNINGHAM  
**Date:** July 21, 1982
DRILLING LOG

Date: 7-20-1952  Job No.: 7-12  Hole No.: 1  Elevation: 198 ft.

Customer: DEPT. OF LAND & NATURAL RESOURCES  Location: MAUI - HAWAII

Driller: J. CUNNINGHAM  10 Hrs.  Rig 2B6
Helper: R. BARBERO  10 Hrs.  Gas  Oil

Helper:  1 Hrs.  Repairs:
Arv. Job 2:  1 Hrs.  Or. No.: ______

Bit-Size: 14  Type: SAEK


Depth Start: 206 ft., Depth Stop: 230 ft., Feet Drilled: 24


<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>206</td>
<td>Reddish Brown &amp; Gray Rock Clay</td>
<td></td>
</tr>
<tr>
<td>230</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: __________________________________________

Signed: J. CUNNINGHAM  Date: July 20, 1952
### DRILLING LOG

**Customer:** Dept. of Land + Natural Resource  
**Location:** Malaekahana - Kauai

<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-19-19</td>
<td>8</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T. Cunningham</td>
<td>P. B. Gay</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Hrs.</td>
<td>10 Hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rig 284</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Casing-Size</th>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/4</td>
<td>in., Length in hole</td>
<td>202 ft.</td>
<td>206 ft.</td>
<td>4 ft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>AM</th>
<th>ft.</th>
<th>Time</th>
<th>M</th>
<th>ft.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>202</td>
<td>Med. + HARD Blue</td>
<td>Rich, Very Hard</td>
</tr>
<tr>
<td>206</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

**Remarks:**
- 2 pick up one roll: Box LH-110 waterbed, dig 3
- 2 work on pit, rebuilding Crank about 2 1/2 hrs.

**Signed:** T. Cunningham  
**Date:** July 19, 198...
**DRILLING LOG**

- **Date:** 7-16-1952  
- **Job No.:** 4-8  
- **Hole No.:**  1  

**Customer:** Dept. of Land & Natural Resources  
**Location:** Makalea - Kauai

- **Driller:** T. Cunningham  
- **Helper:** T. Barchay  
- **Arrv. Job:** 2'  
- **Lv. Job:** 5'  

- **Hrs.:** 10  
- **Rig:** 387  
- **Gas:**  
- **Oil:**  
- **Reps.:**

**Bit-Size:** 1/4  
**Type:** S/A

**Casing-Size:** in., **Length in hole:** ft.  
**Amt. Perforated:** in., **In:**

**Depth Start:** 194 ft., **Depth Stop:** 207 ft., **Feet Drilled:** 8

**Water Levels, Time:** M 11 ft., **Time:** M  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>194</td>
<td>Med. &amp; Hard Shale</td>
<td>a little more soft in strata</td>
</tr>
</tbody>
</table>

**Remarks:** Rain most of afternoon.

- **Driller:** T. Cunningham  
- **Date:** July 16, 1952
**Date:** 7-15-1982  
**Job No.:** 4-8  
**Hole No.:**  
**Elevation:** ft.  
**Customer:** Dept. of Land & Natural Resources  
**Location:** Makaleha - Kauai

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hrs.</th>
<th>Rig</th>
<th>Helper</th>
<th>Hrs.</th>
<th>Gas</th>
<th>Oil</th>
<th>Helper</th>
<th>Hrs.</th>
<th>Or. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Cunningham</td>
<td>10</td>
<td>25</td>
<td>R. Bargeau</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size:** 14  
**Type:** STA

**Casing-Size:** in., Length in hole ft., in., Amt. Perforated ft. in.

**Depth:** Start 186 ft., Depth Stop 194 ft., Feet Drilled 8

**Water Levels, Time:** 7 A.M. 11 ft., Time  M ft.

<table>
<thead>
<tr>
<th>Measurements</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>186</td>
<td>Med &amp; Hard Blue Rock</td>
<td>Rain - The tub type &amp; bar welding repair - about 2 1/2 hrs</td>
<td></td>
</tr>
<tr>
<td>194</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Rain A lot.

**Signed:** I. Cunningham  
**Date:** July 15, 1982
Date: 7-14-1982
Job No. 4-5-
Hole No. Elevation ft.
Customer: Department of Land and Natural Resources
Location: Makalana - Kauai

Driller: T. Cunningham 10 Hrs. Rig-263
Helper: R. Kanoa 10 Hrs. Gas - Oil
Helper: Hrs. Repairs
Av. Job 6 Hrs. Or. No.

Bit Size: 14 Type: Stand
Depth Start: 181 ft., Depth Stop: 186 ft., Feet Drilled: 5
Water Levels, Time M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>181</td>
<td>Med. 4 Harp Kelp</td>
<td></td>
</tr>
<tr>
<td>186</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:
- Pull up the 14" conductor casing cut off 4" below Casing would not go back down.
- Rounders around casing pull up casing for the depth today - 4.5 ft.

Signed: T. Cunningham Date: July 14, 1982
Date: 7-12-1952  Job No: 4-82  Hole No:  
Customer: Dept. of Land & Natural Resources  Location: Makaleha - Maui

Driller: J. Cunningham [10 Hrs]  Rig: 25'  
Helper: Randy T. Barayco [10 Hrs]  Gas:  
Helper:  [Hrs]  Oil:  
Arv. Job: 7:00 am  Lv. Job:  

Bit Size: 14  Type: Stab  
Casing Size: 14 in., Length in hole: 152 ft.  
Depth Start: 175 ft., Depth Stop: 187 ft., Feet Drilled: 6

Water Levels, Time: 7:00 AM, 12 ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>175</td>
<td>Med. &amp; Haau Blue Pearl</td>
<td>Formation - very hard streaks, they ease up a little for a couple of feet.</td>
<td></td>
</tr>
<tr>
<td>187</td>
<td></td>
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</tbody>
</table>

Remarks: We thabbi the rope socket - build up the bit 2 time.
Earl Chang bring me out 2 barrel of dirt.

Signed:  Date: July 12, 1952
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

630 AHUAI STREET • HONOLULU, HAWAI'I 96819

TELEPHONE (808) 833-5688 • 833-1444

---

Date: 7-9-1982  
Job No.: 9-5'  
Hole No.:  
Elevation: ft.

Customer: Dept. of Land & Natural Resources  
Location: NAKALEHA, KAUAI

Driller: Te CUNNINGHAM  
10 Hrs.  
Rig: 281

Helper: B. BARCAYO  
10 Hrs.  
Gas:  
Oil: 

Helper:  
Hrs.  
Repairs: 
Or. No.

Arv. Job: 7'  
Lv. Job: 5'  
Hrs.  

Bit Size: 14 -  
Type: J-48


Depth Start: 169 ft., Depth Stop: 175 ft., Feet Drilled: 6

Water Level, Time: M ft., Time: M ft.  

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</thead>
<tbody>
<tr>
<td>169</td>
<td>MED. HARD BLas Lick</td>
<td></td>
<td></td>
</tr>
<tr>
<td>175</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

- Weld on Bit 2 1/4 in.
- Pick up one Kettle of oxygen at Rig 3.

---

Signed: Te CUNNINGHAM  
Date: July 9, 1982
Date 7-8-19 82  Job No. 4-52  Hole No. Elevation ft.

Customer: DEPT. OF LAND & NATURAL RESOURCES  Location MAMULA, KAAI

Driller: CUNNINGHAM  10 Hrs.  Rig 284
Helper: R. BARGAYU  10 Hrs.  Gas  Oil
Helper:  Hrs.  Repairs

Bit-Size: 14 Type  S4R


<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</thead>
<tbody>
<tr>
<td>163</td>
<td>Med. &amp; Hard Bluff</td>
<td></td>
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<tr>
<td>169</td>
<td></td>
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<td></td>
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</tbody>
</table>

Measurements

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<thead>
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<th>A</th>
<th>B</th>
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</thead>
</table>

Remarks: DEPIT on the 14" BIT.
RATHER THE CLAY THAN SOMETHING ELSE. THE WORST WORK ON
LAPS

Signed: CUNNINGHAM  Date: July 8, 1982
### DRILLING LOG

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6688 • 833-1444

---

**Date:** 7-7-1952  
**Job No.:** 4-52  
**Hole No.:**   
**Elevation:**  
**Customer:** Dept. of Land & Natural Resources  
**Location:** MAKALEHU  
**Kauai**

**Driller:** Quinn  
**Hrs.:** 10  
**Rig:** 287

**Helper:** Barr  
**Hrs.:** 10  
**Gas:**  
**Oil:**

**Arv. Job:** 7  
**Lv. Job:** 5  
**Hrs.:**  
**Or. No.:**

---

**Bit-Size:**  
**Type:**

**Casing-Size:** 14"  
**Temp.:**  
**Length in hole:** 150 ft.  
**in., Amt. Perforated:**  
**ft., in.**

**Depth Start:**  
**ft., Depth Stop:**  
**ft., Feet Drilled**

**Water Levels, Time:**  
**M ft., Time:**  
**M ft.**

---

**Depth**  
**Formation**  
**Remarks**  
**Top**

---

**We Set 152' of 14" Casing**

**Eas taking out our 14" bit at cutting line**

---

**Remarks:**  
**We haul in some sand, lay mud around**

---

**Signed:**  
**Date:** July 7, 1952
### Drilling Log

**RUSCOE MOSS COMPANY**

830 Aunua Street • Honolulu, Hawaii 96819

Telephone (808) 839-5888 • 833-1444

**Date:** 7-6-1982  
**Job No.:** 4-82  
**Hole No.:**  
**Elevation:** _____ ft.

**Customer:** Dept. of Land & Natural Resources  
**Location:** Maka'aleha - Kauai

**Driller:** T. Cunningham  
**Hrs.:** 10

**Helper:** R. Karcay  
**Hrs.:** 10

**Arv. Job:**  
**Lv. Job:**  
**Or. No.:**

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
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</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft.</th>
<th>Depth Stop</th>
<th>ft.</th>
<th>Feet Drilled</th>
</tr>
</thead>
<tbody>
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</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft.</th>
<th>Time</th>
<th>M</th>
<th>ft.</th>
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</thead>
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</table>

### Measurements

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<thead>
<tr>
<th>A</th>
<th>B</th>
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<tbody>
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</tbody>
</table>

### Remarks

- We unloaded 14" casing at site.
- We checked the burs for 14" bit (but didn't).  
- We picked up two 200-lb. welding rods  
- At 10 ft.  
- We got everything ready to set casing.  
- Break off the 18" bit.

**Remarks:** Muddy on site

**Signed:** T. Cunningham  
**Date:** July 6, 1982
Date: 6-30-1982  
Job No.: 9-84  
Hole No.:  8-14

<table>
<thead>
<tr>
<th>Customer: Dept. of Land &amp; Natural Resources</th>
<th>Location: Makalapa - 44704</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driller: T. Cunningham</td>
<td>Rig: 281</td>
</tr>
<tr>
<td>Helper: Randy Kurogawa</td>
<td>Gas: Oil</td>
</tr>
<tr>
<td>Helper: Nathan Kupchea</td>
<td>Repairs</td>
</tr>
<tr>
<td>Arv. Job:</td>
<td>Lv. Job:</td>
</tr>
<tr>
<td>Or. No.</td>
<td>Hrs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size: 1 8</th>
<th>Type:</th>
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|---------------------------------------------------------------|

<table>
<thead>
<tr>
<th>Depth:</th>
<th>Formation:</th>
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<tbody>
<tr>
<td>161</td>
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<table>
<thead>
<tr>
<th>Remarks:</th>
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<table>
<thead>
<tr>
<th>Water Levels, Time: M 13 ft., Time: M ft.</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Measurements</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

Remarks: 
1. We pick up the bit & sub line ahead.  
2. Earl Claims Nathan help us. Bring in feel to our site.  
3. We change some tools at site.
DRILLING LOG

RUSCOE MOSS COMPANY
830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

Date 6-29-19 Hrs. Job No. A - B Hole No. Elevation ft.
Customer Dept. of Land & Water Conservation Location Makanakua - Kaua'i
Driller J. WUNNINGS-HAM 6 Hrs. Rig —
Helper B. BARGAYO — 6 Hrs. Gas
Driller
Helper
Hrs. Repairs
Arv. Job ___________ Lv. Job ___________ Or. No. ___________

Bit-Size

Casing-Size ___________ in., Length in hole ___________ ft. ___________ in., Amt. Perforated ___________ ft. ___________ in.
Depth Start ___________ ft., Depth Stop ___________ ft., Feet Drilled ___________

Water Levels, Time M ___________ ft., Time M ___________ ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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Measurements

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Remarks: De idi oasel end on fr Cau. Set f sol.

Signed: ___________ Date 6-29-1952
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

---

**Date**: 6-28-1982  
**Job No.**: 4-5  
**Hole No.**:  
**Elevation**:  

**Customer**: DEPT. OF LAND & NATURAL RESOURCES  
**Location**: WHALENA - KAUAI

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hrs.</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>T. CUNNINGHAM</td>
<td>10</td>
<td>254</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. JARGADO</td>
<td>10</td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
<th>Repairs</th>
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<table>
<thead>
<tr>
<th>Bit Size</th>
<th>Type</th>
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<tbody>
<tr>
<td>1 8</td>
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<table>
<thead>
<tr>
<th>Casing Size</th>
<th>in., Length in hole</th>
<th>ft.</th>
<th>in., Amt. Perforated</th>
<th>ft.</th>
<th>in.</th>
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<tr>
<th>Depth Start</th>
<th>ft.</th>
<th>Depth Stop</th>
<th>ft.</th>
<th>Feet Drilled</th>
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<tbody>
<tr>
<td>155</td>
<td></td>
<td>161</td>
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<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft.</th>
<th>Time</th>
<th>M</th>
<th>ft.</th>
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<th>Depth</th>
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<th>Remarks</th>
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<th>A</th>
<th>B</th>
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<tbody>
<tr>
<td>155</td>
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<td>161</td>
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</table>

**Remarks**: HAVE BIT STUCK in THE BOTTOM of well with a BACK OUTF, unable to set Bore So Far

**Signed**: T. CUNNINGHAM  
**Date**: June 28, 1982
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE: 808-839-6888 • 833-1444

Date 19__________ Job No. ________ Hole No. 623-04 Elevation ________ ft.
Customer Dep't. ________ Location Waialua 1 In.

Driller 11:00 A.M. 8:00 P.M. 10 Hrs. Rig __________
Helper 11:00 A.M. 8:00 P.M. 10 Hrs. Gas __________ Oil __________
Helper __________ 10 Hrs. Repairs __________
Arv. Job __________ Lv. Job __________ Hrs. __________ Or. No. __________

**Bit Size** 18 ________ **Type** 5412

**Casing Size** ________ in., Length in hole ________ ft. ________ in., Amt. Perforated ________ ft. ________ in.
**Depth Start** 115 ft., Depth Stop 155 ft., Feet Drilled 3
**Water Levels, Time** M 12 ft., Time M __________ ft.

### Depth | Formation | Remarks | Top
---|---|---|---
115 | | |

**Measurements**

A   | B
---|---

**Remarks:**

Signed ___________________________ Date ___________________________
**Date:** 6-24- 1982  
**Job No.:** 4-82  
**Hole No.:** 0623-06  
**Location:** Makaleha - Kauai

**Driller:** I. Cunningham  
**Helper:** H. Barkayu

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
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<tbody>
<tr>
<td>145</td>
<td>Med. of Hard-Blue Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>151</td>
<td></td>
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</tbody>
</table>

**Remarks:**  
We battered up the clay base floor - leg 9:30. Beat off edge.  
Rope socket continues, knocking down clay.

**Signed:** Troy Cunningham  
**Date:** June 24, 1982
<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>Customer</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-23-82</td>
<td>4-82</td>
<td>01-2306</td>
<td>ft.</td>
<td>Dept of Land &amp; Natural Resources</td>
<td>Makaleha - Kauai</td>
</tr>
</tbody>
</table>

**Driller:** I. Cunningham  
**Helper:** R. Bargayo

- **Rig:** 2R-4  
- **Gas:**  
- **Oil:**  
- **Repairs:**

**Arv. Job:** 7'  
**Lv. Job:** 5'  
**Hrs.:**

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
<th>STAQ</th>
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<tbody>
<tr>
<td>18</td>
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<table>
<thead>
<tr>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>140 ft.</td>
<td>145 ft.</td>
<td>5 ft.</td>
</tr>
</tbody>
</table>

**Water Levels:**  
- Time: 7:12 AM  
- Level: 12 ft.  
- Time: M  
- Level: ft.  

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>Med. &amp; Hard-Blue-Rock</td>
<td></td>
<td></td>
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<tr>
<td>145</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Remarks:** WE - Babbit The-Rope-Socket

**Signed:** I. Cunningham  
**Date:** June 23, 1982
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

630 AHUAI STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-5888 • 833-1444

Date: 06-22-82  Job No. 4-82  Hole No. 062304  Elevation 0 ft.

Customer: DEPT. OF LAND & NATURAL RESOURCES  Location: MAKALAPA - KAUAI

Driller: T. CUNNINGHAM 10 Hrs.  Rig 282

Helper  Hrs.  Gas  OIL

Helper  Hrs.  Repairs


Bit-Size 18  Type STAR

Casing-Size  in., Length in hole  ft.  in., Amt. Perforated  ft.  in.

Depth Start 135  ft., Depth Stop 140  ft., Feet Drilled 5

Water Levels, Time  M  12  ft., Time  M  ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>135</td>
<td>Med. &amp; Hard Blue Rock</td>
<td>Weld Repair the bit</td>
</tr>
<tr>
<td>140</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Measurements**

- **Depth**
- **Formation**
- **Remarks**
- **Top**

**Remarks:**
Randy Pare Company take off - forward agreement.

Signed: T. CUNNINGHAM  Date: June 22, 1982
**Date**: 6-21-1982  **Job No.**: A-82  **Hole No.**: 0623-04  **Elevation**: ft.

**Customer**: Dept of Land & Natural Resources  **Location**: Makaleha - Kauai

**Driller**: J. Cunningham  10 Hrs.  **Rig**: Q8C

**Helper**: R. Bargas  10 Hrs.  **Gas**: Oil  **Repairs**:

**Arv. Job**: 7  **Lv. Job**: 5

**Bit-Size**: 18  **Type**: Star

**Depth Start**: 115 ft.  **Depth Stop**: 135 ft.  **Feet Drilled**: 20

**Water Levels, Time**: 7:40 M 12 ft.  **Time**: M ft.

<table>
<thead>
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<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>1/15</td>
<td>Brown Clay</td>
<td></td>
<td></td>
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<tr>
<td>1/20</td>
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<td>1/20</td>
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<td>1/33</td>
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<tr>
<th>Depth</th>
<th>Formation</th>
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</thead>
<tbody>
<tr>
<td>1/33</td>
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<tr>
<td>1/35</td>
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</tbody>
</table>

**Remarks**: Rope collapse, backing down clay, too hot of sand.

**Signed**: J. Cunningham  **Date**: June 21, 1982
DRILLING LOG

Date: 6/18/19  Job No.: 13  Hole No.: 0623-04  Elevation ___ ft.

Customer

Driller

Helper

Arv. Job

Av. Job

Hrs.

Hrs.

Hrs.

Hrs.

Rig

Gas

Oil

Repairs


Bit-Size 15"  Type S-36

Casing-Size ___ in., Length in hole ___ ft. ___ in., Amt. Perforated ___ ft. ___ in.

Depth Start ___ ft., Depth Stop ___ ft., Feet Drilled ___

Water Levels, Time ___ M ___ ft., Time ___ M ___ ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Measurements

Remarks:

Signed:  

Date: 6/18/19
### DRILLING LOG

**Customer**
- Date: 17-19
- Job No. 4
- Hole No. 01623-04
- Elevation:__ ft.
- Location: Waikiki, Hawaii

**Driller**
- Hours: Rig:__

**Helper**
- Hours: Gas:__ Oil:__

**Arv. Job**
- Hrs.:__

**Bit Size**
- 1 3/4

**Casing Size**
- in., Length in hole:__ ft.

**Depth Start**
- 5 1/8 ft., Depth Stop: 53 ft.

**Water Levels**
- Time:__ M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>53</td>
<td>Hard Clay</td>
<td></td>
</tr>
<tr>
<td>52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Loose Clay</td>
<td>Red soil embedded</td>
</tr>
<tr>
<td>53</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Plenty rain.
We lowered the conductor about 1/2 in. to push it down with the bit. Weight was fine at first.

**Signed:** Reg Cunningham
**Date:** Jan 17, 19__
**DRILLING LOG**

RUSCOE MOSS COMPANY

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-8888 • 833-1444

---

**Date** 6-16-78 Job No. 4-5 Hole No. 0623-04 Elevation ft.

**Customer** DEPT. OF LAND & NATURAL RESOURCES Location Maka'eha, KA\[16pt]

**Driller** CUNNINGHAM 10 Hrs. Rig 18
**Helper** BARGAY 10 Hrs. Gas Oil

**Elevation** ft.

**Location**

---

**Bit-Size** 18 **Type** Steel

**Casing-Size** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start** 50 ft., Depth Stop 58 ft., Feet Drilled 8

**Water Levels, Time** M 15 ft., Time M ft.

---

**Depth** **Formation** **Remark**

| 50 | Hard blue rock - | Not very tough, more soft |
| 58 |                |                           |

---

**Remarks:** Have one boulder hang up the tools about 2 minutes. Get loose ok if.

---

**Signed** CUNNINGHAM **Date** June 16, 1982
Date: 6-15-1982  Job No: 4-82  Hole No: 0623-04  Elevation  0 ft.

Customer: Dept. of Law Natural Resources  Location: Makaleha, Kauai

Driller: T. Cunningham  10 Hrs.  Rig: 281
Helper: T. Hargrove  10 Hrs.
Helper: ____________________________________________  Hrs.

Bit Size: 12  Type: SF 12
Depth Start: 45 ft., Depth Stop: 50 ft., Feet Drilled: 5

Water Levels, Time: M 13 ft., Time: M ______ ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td></td>
<td>Have this tank - seem to ease up some pulling</td>
</tr>
<tr>
<td>50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remark: Acting up the Near Waesa thing from Island Air

Signed: T. Cunningham  Date: June 15, 1982
**DRILLING LOG**

Date: 6-14-1952  
Job No.: 4-82  
Hole No.: 0623-04  
Elevation:  

Customer: DEPT. OF LAND & NATURAL RESOURCES  
Location: MAKALUA WELL  

Driller: T. CUNNINGHAM  
10 Hrs.  
Right: 281  

Helper: R. BARAYO  
10 Hrs.  
Gas:  
Oil:  

Arv. Job:  
Ln. Job:  
Hrs.:  

Bit-Size: 18  
Type: STAR  

Casing-Size: 18 in.  
Length in hole:  
Conductor: in.  
Amt. Perforated: ft.  

Depth Start: 43 ft.  
Depth Stop: 85 ft.  
Feet Drilled: 2  

Water Levels, Time: 7 AM  
13 ft., Time: M  
ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>Hana Blue Fafu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We put on another section of conductor making 40 ft. 12 ft. above ground.

Signed: T. CUNNINGHAM  
Date: June 14, 1952
DRILLING LOG

Date: 6-11-1982  Job No. 4-82  Hole No. 0623-04  Elevation ft.  0

Customer: Dept. of Land & Natural Resources  Location: Makalapa Well

Driller: Cunningham 10 Hrs.  Rig: 38C
Helper: T. Tagayu 10 Hrs.  Gas:  Oil
Helper:  Hrs.  Repairs

Bit-Size: 18  Type: STARK

Casing-Size: in., Length in hole ft.  in., Amt. Perforated ft.  in.
Depth Start:  ft.  Depth Stop:  ft.  Feet Drilled: 1

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-2</td>
<td>HARD-BLUE ROCK</td>
<td>Very</td>
</tr>
</tbody>
</table>

Remarks: We lowered the conductor 21 ft. last night. But could not go through with the bit. I ran off side of conductor still ran 2 ft. through. Continue drilling.

Weld the bit lugs. Pretty bad shape.

Signed:  Troy Cunningham  Date: June 11, 1982
Date: 6-10-1982  
Job No.: 482  
Hole No.: 0623-04  
Elevation: __________ ft.

Customer: Dept. Land & Natural Resources  
Location: Maka Lehua Well

Driller: T. Cunningham  
Helper: R. Bargay  
Arv. Job 7:  
Lrv. Job 51:

Rig: 284  
Gas: __________ Oil: __________  
Repairs: __________ Or. No.: __________

Bit Size: 18  
Type: Steel

Casing Size: __________ in., Length in hole __________ ft.  
In., Amnt. Perforated __________ ft. __________ in.

Depth Start: __________ ft., Depth Stop: __________ ft., Feet Drilled __________

Water Levels, Time: M __________ ft., Time: M __________ ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>Hard Blue Rock</td>
<td>Very</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: We have one small trouble came in  
Weed, bit hung, pretty bad shape.

WATER stands about 15' from surface, not very much.

Signed: T.J. Cunningham  
Date: June 10, 1982
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>we drill out the lift of fill</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>boilure</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>very slow blind drilling</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>some boilure edges stick out in well</strong></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: **Ready take off 2 HRS.**

Signed: [Signature]
Date: June 9, 1982
Date: 6-8-1982  Job No.: 4-82  Hole No.: 2623-04  Elevation: _______ ft.

Customer: Dept. of Land Natural Resources  Location: Makaleha Well

Driller: Cunningham  10 Hrs.  Rig: 986
Helper: Randy Garcia  10 Hrs.  Gas: Oil
Helper:  Hrs.  Repairs:  Or. No.: 


Bit Size: 18  Type: STAR

Depth Start: _______ ft., Depth Stop: _______ ft., Feet Drilled: _______ ft.

Water Levels, Time: _______ M ft., Time: _______ M ft.,

Depth  | Formation | Remarks | Top | Measurements
--------|-----------|---------|-----|-------------

Remarks:

Signed: Cunningham  Date: June 8, 1982

---

2. Pick up one bottle of [connection] liquid at Rig 3.

But our seal tightened. Buck us security. We replaced one from Earl. Chris.

We started the [connection] socket.

We radiated the hole, filled in 11 ft.
**DRILLING LOG**

---

**Date** 6-7-1982  **Job No.** 4-82  **Hole No.** 0623-04  **Elevation** [Blank] ft.

**Customer** DEPT. OF LAND & NATURAL RESOURCES  **Location** NAALUKAI, WELL

**Driller** G. CUNNINGHAM  **Hrs.** 10  **Rig** 28L

**Helper** EARL CHING  **Hrs.** 10  **Gas** [Blank]  **Oil** [Blank]

**Helper** RANDY BARBAYO  **Hrs.** 10  **Repairs** [Blank]

**Arv. Job** NATHAN J. JOE  **Hrs.** [Blank]  **Or. No.** [Blank]

**Bit-Size** [Blank]  **Type** [Blank]

**Casing-Size** [Blank] in., **Length in hole** [Blank] ft.  **In., Amt. Perforated** [Blank] ft.  **In.**

**Depth Start** [Blank] ft.,  **Depth Stop** [Blank] ft.,  **Feet Drilled** [Blank]

---

**Water Levels, Time** [Blank] ft.,  **Time** [Blank] ft.  **Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:**

WE TAKEN THE DRILLING STRING TOOLS FROM E. CHING 2 Job 2 Start Making Hole Drill Out The LARGE Boulder waiting and take out the tools. Return to Earl.

[Hard Time drilling the Boulder] 

[Blank]

**Signed** G. CUNNINGHAM  **Date** 6-7-1982
### DRILLING LOG

**Customer:** DEPT. OF LAND 
**& NATURAL-RESOURCES**  
**Location:** MAKALEHA

<table>
<thead>
<tr>
<th>Date</th>
<th>6-5-1982</th>
<th>Job No.</th>
<th>4-82</th>
<th>Hole No.</th>
<th>O023-04</th>
<th>Elevation</th>
<th>ft.</th>
</tr>
</thead>
</table>

**Driller:**  
**Helper:**  
**Helper:**  
**Arv. Job:**  
**Lv. Job:**  
**Or. No.:**  

**Bit-Size:** 18  
**Type:** Steer  
**Casing-Size:** in.  
**Length in hole:** ft.  
**Amount Perforated:** ft.  
**Depth Start:** ft.  
**Depth Stop:** 40 ft.  
**Feet Drilled:** ft.  

**Water Levels:** M.  
**Time:** M.  
**Depth:** ft.  

**Formation:** 
- HARD-DARK GREY BUCK SAND CLAY

**Earl Ching went out to job site with me to see about removing the Boulder from over the well. But the Boulder had grown to cover the well.**

**Remarks:** The Boulder water is standing about 16'-18' from surface. The large Boulder is about 20'-25' down.

**Signed:** Troy Cunningham  
**Date:** June 5, 1982
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-8888 • 833-1444

**Date:** 6-4-1982  
**Job No.:** 4-82  
**Hole No.:** 0623-04  
**Elevation:** ft.

**Customer:** DEPT. OF LANDS & NATURAL RESOURCES  
**Location:** MAKALÉHA.

**Driller:** T. QUINNELLHAM  
**Hrs.:** 10  
**Rig:** 28^°

**Helper:** R. BARAYO  
**Hrs.:** 10  
**Gas:** Oil

**Arv. Job:** 7'  
**Lv. Job:** 5'

**Bit-Size:** 18  
**Type:** STAR

**Casing-Size:** in., **Length in hole:** ft.  
**In., Amt. Perforated:** ft.  
**In.**

**Depth Start:** 26 ft., **Depth Stop:** 40 ft., **Feet Drilled:** 14

**Water Levels, Time:** M. **ft., Time:** M. **ft.**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>HARD BOULDER + CLAY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>MED. HARD DARK GREY ROCK + SOME CLAY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** We have one LARGE Boulder came in on the tools  
Wedged the tools, unable to take out the bit.  
About 8 to 10' off bottom with the tools.

**Signed:** T. QUINNELLHAM  
**Date:** June 4, 1982
Date: 6-3-82  Job No.: 4-82  Hole No.: 0623-04  Elevation: ______ ft.

Customer: Dept. of Land & Natural Resources  Location: MAKALEHA-WELL

Driller: T. CUNNINGHAM  10 Hrs.  Rig: 28L
Helper: R. BARGAYO  10 Hrs.  Gas:  Oil:  Repairs: 
Arr. Job: 1st  Lv. Job: 5th  Or. No.: 

Bit-Size: 18  Type: STAE
Depth Start: 14 ft., Depth Stop: 26 ft., Feet Drilled: 12
Water Levels, Time: __________ M. ft., Time: __________ M. ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Loose Hard Boulders</td>
<td>Clay—more clay mixed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>drilling eased up a little</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Repairs the kit lugs, welding & Mas.
Have to rebuild the trip lugs.

Signed: T.C. Cunningham  Date: June 3, 1982
**DRILLING LOG**

Date: 6-2-1982  
Job No.: 4-82  
Hole No.: 0623-04  
Elevation: 500 ft.

Customer: Dept. of Land & Natural Resources  
Location: Makaheha Well

<table>
<thead>
<tr>
<th>Driller</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>281</th>
</tr>
</thead>
<tbody>
<tr>
<td>T. Cunningham</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>10 Hrs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. Barcayu</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Arr. Job: 7',  
Lv. Job: 5',  
Or. No.:     

Bit-Size: 1½ in.  
Type: Star

Depth Start: 10 ft., Depth Stop: 14 ft., Feet Drilled: 4 ft.

Water Levels: M     ft., Time: M     ft.

**Depth** | **Formation** | **Remarks** | **Top** | **Measurements**
---|---|---|---|---
10/14 | LARGE HARD BOUDDERS | Clay | | |

Remarks: Repair Thr. Stem Guide

Signed: T. Cunningham  
Date: June 2, 1982
### DRILLING LOG

**RUSCOE MOSS COMPANY**

830 ANUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6588 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>6-1-1982</th>
<th>Job No.</th>
<th>4-92</th>
<th>Hole No.</th>
<th>0623-04</th>
<th>Elevation</th>
<th>ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>DEPT OF LAND &amp; NATURAL RESOURCES</td>
<td>Location</td>
<td>MAKALIHI-ANK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Driller    | J. CUNNINGHAM | 10 Hrs. | Rig | 284 |
| Helper     | RANDY BACCAIO | 10 Hrs. | Gas | Oil |
| Helper     |                | Hrs.    | Repairs |        |
| Av. Job L | Lv. Job S | Hrs. | Or No. |      |

| Bit-Size | 18 | Type | STAR |
| Casing-Size | in., Length in hole | ft. | in., Amt. Perforated | ft. | in. |
| Depth Start | ft. | Depth Stop | 10 ft. | Feet Drilled | 2 |
| Water Levels, Time | M | ft., Time | M | ft. |

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>LARGE-HAND BOULDERS, CLAY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

- We jack up the Rig. Move the Bit Forward about 3 ft. inches to cure up the hole.
- We add extension to the stove pipe, more long, etc.

**Signed:** J. C. Cunningham  
**Date:** June 1, 1982
**DRILLING LOG**

Date: 5-28-1982  
Job No: 4-82  
Hole No: 0623-04  
Elevation: ft.  

Customer: Dept. of State Natural Resources  
Location: MAKALEHA-TANK  

Driller: T. Cunningham  
Helper: R. Bargayo  

<table>
<thead>
<tr>
<th>Hours</th>
<th>Rig</th>
<th>Gas</th>
<th>Oil</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>28C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Arr. Job: 6:00 a.m.  
Lrv. Job: 4:00 p.m.  


depth Start: ft., Depth Stop: 7 1/2 ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 1/2</td>
<td>LARGE HARD BUILDERS CLAY</td>
<td>Semi-Losse Boulder</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:  
- We began core on off the side of one large Building most of the day  
- Very Hard. I heard of pretty straight.  
- Boulder seems to roll over. Some  
- Boulder continues to come in.  
- Big hole top 5 ft.  

Signed: Troy Cunningham  
Date: May 28, 1982
**Date**: 5-27-1982  
**Job No.**:  
**Hole No.**: 0423-04  
**Elevation**:  

**Customer**: Dept of State Natural Resources  
**Location**: Makaha Tan  

**Driller**: T. Cunningham  
**8 Hrs.**:  
**Rig**: 281  

**Helper**: T. Isebayo  
**8 Hrs.**:  
**Repairs**:  
**Arv. Job**:  
**Lv. Job**:  
**Or. No.**:  

**Bit-Size**: 18  
**Type**: Star  

**Casing-Size**:  
**in., Length in hole**:  
**ft.**:  
**in., Amt. Perforated**:  
**ft.**:  
**In.**:  

**Depth Start**:  
**ft., Depth Stop**: 6  
**6  
**ft., Feet Drilled**:  

**Water Levels, Time**:  
**M**:  
**ft., Time**:  
**M**:  
**ft.**:  

**Depth** | **Formation** | **Remarks** | **Top**
--- | --- | --- | ---
0  
Drill down to about 6 1/2 ft from surface, about 6 1/2 ft. dry.  
We pick up one 8' Piece of 20" casing from kitchen floor in ledge, set feet very down in hole.  
Remarks: Rain very much in the am.  
Signed: T. Cunningham  
Date: May 27, 1982
<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>Driller</th>
<th>Hours</th>
<th>Rig</th>
<th>Helper</th>
<th>Hours</th>
<th>Gas</th>
<th>Oil</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-26-1982</td>
<td>7-82</td>
<td>D10-23-04</td>
<td>ft.</td>
<td>T. CUNNINGHAM</td>
<td>10</td>
<td></td>
<td>F. BARGAYO</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Customer:** Dept. of State, Natural Resources  
**Location:** MAKALEHA-TANK

<table>
<thead>
<tr>
<th>Arrival Job</th>
<th>Length</th>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>z'</td>
<td></td>
<td>ft.</td>
<td>ft.</td>
<td>ft.</td>
</tr>
<tr>
<td>5'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>STAK</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>Length in hole</th>
<th>Amt. Perforated</th>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ft.</td>
<td>ft.</td>
<td>ft.</td>
<td>ft.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Levels</th>
<th>Time</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Formation:**  
4: Kansas tundra - Some Clay  
5: ...  
6: Hole going off ground large boulder. Very fast, try to bail off hole. Some of the small boulder came in from surface down.

**Remarks:**

**Signed:** T. CUNNINGHAM  
**Date:** May 26, 1982
Date: 5-25-1982  
Job No.: 4-82  
Hole No.: 0623-04  
Elevation: ______ ft.

Customer: ____________________  
Location: Nukolani  

Driller: J. Cunningham  
10 Hrs.  
Rig: 286

Helper: R. Barcayo  
10 Hrs.  
Gas: Oil

Helper: ____________________  
Hrs.  
Repairs: ____________________

Arv. Job: ______  
Lv. Job: ______  
Hrs.: ____________________  
Or. No.: ____________________

Bit-Size: 18  
Type: Star

Casing-Size: ______ in., Length in hole ______ ft.  
In., Amt. Perforated ______ ft.  
In.

Depth Start: ______ ft., Depth Stop: ______ ft., Feet Drilled: ______

Water Levels, Time: M ______ ft., Time: M ______ ft.

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Soil-Large Boulders, Hard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We drill down to about 4 ft. have trouble from boulders rolling into hole. Boulder are very hard - the rock type.

Remarks: We have some trouble with the fuel on the Rig Engine about 4 p.m. got Earl Ching to come out and bleed off the fuel injection (4-25-82)

Signed: J. Cunningham  
Date: 5-25-1982
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 832-6888 • 833-1444

---

**Date**: 5-24-1982  
**Job No.**: 4-82  
**Hole No.**: 0623-04  
**Elevation**: ft.

**Customer**: Dept. of State, Natural Resources  
**Location**: Mahaloha-Wainiha

**Driller**: T. Cunningham  10 Hrs.  
**Rig**: 286

**Helper**: Randy Bargayo  10 Hrs.  
**Gas**: Oil

**Helper**:  
**Repairs**:

**Arv. Job**: 1'  
**Lv. Job**: 2'  
**Hrs.**:

---

**Bit-Size**: 10  
**Type**: STAR

**Casing-Size**: in., Length in hole ft., Length in hole in., Amt. Perforated ft. in.

**Depth Start**: ft.  
**Depth Stop**: ft.  
**Feet Drilled**:

**Water Levels, Time**: M ft., Time M ft.

---

**Depth**  
**Formation**  
**Remarks**  
**Top**

0  
**We placed some water base from Site 2**  
Start the hole rig out larger hours by hand  
**etc. work on dayumps**

---

**Remarks**: Rain off and on all day.

---

**Signed**: Ray Cunningham  
**Date**: May 24, 1982
Date: 5-22 - 1982  
Job No.  
Hole No. 0623-04  
Elevation 5'-10"  

Customer: DEPT. OF STATE  
Driller: E. CHING  
Drilling for: CUNNINGHAM 10  
Arv. Job 6:30  
Lv. Job 4:30  

Rig 286  
Gas  
Oil  
Repairs  

Bit-Size  
Casing-Size  
Depth Start  
Water Levels, Time  

Depth

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE FINISH SETTING UP THE RIG; HOOK UP THE TOOLS, ETC.</td>
</tr>
<tr>
<td>READY TO START THE DRILL</td>
</tr>
</tbody>
</table>

Signed: CUNNINGHAM  
Date: May 22, 1982  

Remarks: Have some trouble making the rig fit together.
### Drilling Log

**Date:** 5-21-1982  
**Job No.:**  
**Hole No.:** 0673-04  
**Elevation:** ft.  
**Location:** MAKALEHA-1  
**Rig:** 29C  
**Driller:** T. Cunningham  
**Helper:** Mandy Barcayo  
**Arv. Job:**  
**Hv. Job:**  
** remarks: **

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>we had in some more equipment, pick up some</strong> 12 drums Fuel. <strong>Block up the rig, rig sat on a slope, hard to level</strong> up</td>
</tr>
</tbody>
</table>

**Remarks:** NATHAN-KUPIHEA, NEW MAN EARL CHING, HELPER

**Signed:** T. Cunningham  
**Date:** May 21, 1982
Date: 5-20-1982  
Job No.: Hole No.: 0123-04  
Elevation: _____ ft.  
Customer: Dept. of State, Natural Resources  
Location: Makaleha - Tank - Kapaa  

<table>
<thead>
<tr>
<th>Driller</th>
<th>E Cunningham</th>
<th>10 Hrs.</th>
<th>Rig: 286</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>E Chung</td>
<td>10 Hrs.</td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td>J. E. Ayon</td>
<td>10 Hrs.</td>
<td>Repairs</td>
</tr>
<tr>
<td>Arv. Job</td>
<td>6:30</td>
<td>4:30 Hrs.</td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size:** __________  
**Type:** __________

**Casing-Size:** __________ in., Length in hole __________ ft., in., Amt. Perforated __________ ft., in.  
**Depth Start:** __________ ft., Depth Stop __________ ft., Feet Drilled __________  
**Water Levels, Time:** M __________ ft., Time __________ M __________ ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top A</th>
<th>Top B</th>
</tr>
</thead>
</table>

- We move the Rig from one well site to the other.
- A little trouble getting the Rig spotted.
- We were at the tank.

Remarks:  

Signed: Ray Cunningham  
Date: May 20, 1982