KEEI WELL "C" 2653-01

DRILLER'S LOG

SUMMARY
<table>
<thead>
<tr>
<th>DATE</th>
<th>DEPTH BELOW DRILLING PLATFORM (ELEV. 884.24) FROM TO</th>
<th>DRILLER'S ROCK DESCRIPTION</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun 15</td>
<td>884 - 892</td>
<td>Black cinder</td>
<td>Casing ; some water</td>
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<tr>
<td>Jun 16</td>
<td>892 - 894</td>
<td>Hard clay - black rock</td>
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<tr>
<td>Jun 17</td>
<td>894 - 902</td>
<td>Black cinders or something</td>
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<tr>
<td>Jun 21</td>
<td>902 - 91.5</td>
<td>Pukka; broken</td>
<td>Date at 880.2', 37 ppm</td>
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<tr>
<td>v</td>
<td></td>
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<td>Cut off 2' of surface pipe</td>
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<td>Elevation at top of pipe now 882.24 ft.</td>
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<td>29</td>
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<td></td>
<td>Measured up &amp; run 420</td>
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<tr>
<td>30</td>
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<td>casing Over 6604 ft.</td>
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<td>Total casing in the hole - 9121'</td>
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<td>25</td>
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<td>24 Joint + 8' barrels</td>
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<td>44 Joint + 4 barrels</td>
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<td>Pump hole - 897' Airline at 2910'</td>
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<td>Started pump test</td>
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<td></td>
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<td>No flow</td>
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<td></td>
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<td>jaki</td>
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<td>Depth Below Drilling Platform (Elev. 884.2 ft)</td>
<td>Driller's Rock Description</td>
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<td>Apr 12</td>
<td>695</td>
<td>720</td>
<td>Placing Units &amp; silt lens</td>
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<td>Depth TO</td>
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<td>----------</td>
<td>-----------------------------</td>
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<tr>
<td>Mar 13</td>
<td>462</td>
<td>465</td>
<td>Blue rock; very hard</td>
</tr>
<tr>
<td></td>
<td>465</td>
<td>467</td>
<td>Blue rock; very hard</td>
</tr>
<tr>
<td></td>
<td>467</td>
<td>472</td>
<td>Soft bit churn big</td>
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<tr>
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<td>472</td>
<td>475</td>
<td>Blue rock; very hard</td>
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<td>475</td>
<td>477</td>
<td>Blue rock; very hard</td>
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<tr>
<td></td>
<td>477</td>
<td>487</td>
<td>Pale grey sand</td>
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<td></td>
<td>487</td>
<td>491</td>
<td>Blue rock; very hard</td>
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<td></td>
<td>491</td>
<td>510</td>
<td>Puka</td>
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<td></td>
<td>510</td>
<td>524</td>
<td>Pale grey; Hard; soft strata</td>
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<tr>
<td>23/24</td>
<td>—</td>
<td>—</td>
<td>Repairing rig</td>
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<td>524</td>
<td>534</td>
<td>Puka; Hard; soft strata; layers</td>
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<td>534</td>
<td>554</td>
<td>do.</td>
</tr>
<tr>
<td></td>
<td>554</td>
<td>569</td>
<td>do.</td>
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<tr>
<td></td>
<td>569</td>
<td>594</td>
<td>do.</td>
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<tr>
<td>Apr 03</td>
<td>594</td>
<td>615</td>
<td>do.</td>
</tr>
<tr>
<td>05</td>
<td>615</td>
<td>616</td>
<td>Blue rock; very hard</td>
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<tr>
<td></td>
<td>616</td>
<td>626</td>
<td>do.</td>
</tr>
<tr>
<td></td>
<td>626</td>
<td>632</td>
<td>Puka; hard; soft layers</td>
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<td></td>
<td>632</td>
<td>660</td>
<td>do.</td>
</tr>
<tr>
<td></td>
<td>660</td>
<td>675</td>
<td>do.</td>
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<tr>
<td></td>
<td>675</td>
<td>695</td>
<td>Puka</td>
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<td>Depth Below Drilling Platform (ft)</td>
<td>Driller’s Rock Description</td>
<td>Remarks</td>
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<td>------------------------------------</td>
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<tr>
<td>Feb 13</td>
<td>302 – 309</td>
<td>Blue rock; very hard</td>
<td>Reading w/24&quot; bit</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td>Do.</td>
</tr>
<tr>
<td>15</td>
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<td>2 &quot;rips&quot; on bottom edge</td>
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<tr>
<td>16</td>
<td>309 – 311</td>
<td>Blue rock (very hard)</td>
<td>Hard/silt streaks but thin</td>
</tr>
<tr>
<td>17</td>
<td>311 – 312</td>
<td>Puka</td>
<td>Hard/silt streaks</td>
</tr>
<tr>
<td>18</td>
<td>312 – 330</td>
<td></td>
<td>Do.</td>
</tr>
<tr>
<td>20</td>
<td>330 – 342</td>
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<tr>
<td>21</td>
<td>342 – 348</td>
<td>Blue rock; very hard</td>
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<tr>
<td>22</td>
<td>348 – 361</td>
<td></td>
<td>Don’t hold water in the hole.</td>
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<td>361 – 364</td>
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<td>One layer of silt, 2 ft had water.</td>
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<tr>
<td>24</td>
<td>354 – 357</td>
<td>Cinder; very soft</td>
<td>Hole lasing mixture – used back.</td>
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<tr>
<td>25</td>
<td>357 – 362</td>
<td>Another &amp; minor, blue stuff.</td>
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<td>26</td>
<td>362 – 368</td>
<td>Puka, Hard/silt streaks</td>
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<td>27</td>
<td>368 – 380</td>
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<td>28</td>
<td>380 – 394</td>
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<tr>
<td>MAR 01</td>
<td>394 – 409</td>
<td>Puka, hard/silt layers</td>
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</tr>
<tr>
<td>02</td>
<td>409 – 423</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>423 – 435</td>
<td></td>
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</tr>
<tr>
<td>06</td>
<td>435 – 440</td>
<td>Hole crooked</td>
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<td></td>
<td>Reaming at 260°-270° w/24&quot; bit</td>
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<tr>
<td>08</td>
<td>440 – 448</td>
<td>Puka</td>
<td>Big ledge at 265</td>
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<tr>
<td>09</td>
<td>448 – 450</td>
<td>Puka</td>
<td>Hard/silt layers; shot hole</td>
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<td>10</td>
<td>450 – 456</td>
<td>Aa</td>
<td>Hard layers</td>
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<tr>
<td></td>
<td>456 – 465</td>
<td>Aa</td>
<td>Using bent stick</td>
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<tr>
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<td>From</td>
<td>To</td>
<td>Driver's Rock Desc.</td>
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<td>7-7-78</td>
<td>284</td>
<td>288</td>
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<td>288</td>
<td>292</td>
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<td>305</td>
<td>307</td>
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1978
Jan. 03  295  305  Puka, hard + soft streaks
04  305  308  Puka, brown
05  [220  225]
06  [225  235]
07  [235  245]
08  [245  265]
09  [265  275]
10  [275  295]
11  [285  295]
12
13
14
15
16
17
18  [0  24]
19  [24  40]
20  [40  52]
21  [52  64]
22  [64  114]
23  [104  114]
24  [119  174]
25  [174  220]
26  [220  232]
27  [232  240]
28
29
Feb. 01  [24  187]
02  [255  273]
03  [275  287]

Some very hard streaks but thin layers
Hard + soft streaks  14" bit
Reaming; 18" bit
Reaming

Finished reaming till 340'

Egyptian fauna
Reaming, 24" bit

Hard layers
Hard + soft layers
<table>
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<th>DATE</th>
<th>Depth Below Drilling Platform (ft)</th>
<th>Driller's Rock Description</th>
<th>Remarks</th>
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<td>269-274</td>
<td>Blue rock, very hard</td>
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<td>279-281</td>
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<td>281-283</td>
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<td>283-288</td>
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<td>22</td>
<td>288-289</td>
<td>Blue rock, very hard</td>
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<tr>
<td>23</td>
<td>289-295</td>
<td>Paken, hard &amp; soft layers</td>
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<td>295</td>
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<td>Jan. 1978*</td>
<td>0-24</td>
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<td>Remarks: 24&quot; bit; 24&quot; c.g.</td>
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<td>Feb. 01</td>
<td>240-255</td>
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<tr>
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<td>273-284</td>
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<td>06-07</td>
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*NOTE: 24" bit used on 10/12/78 while building up 24" bit.
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<th>Depth Below Drilling Platform (feet 884.24 to 884.25)</th>
<th>Driller's Rock Description</th>
<th>Remarks</th>
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<td>Nov 14</td>
<td>120 to 124</td>
<td>Brown puka</td>
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<tr>
<td>15</td>
<td>124 to 129</td>
<td>Puka rock</td>
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</tr>
<tr>
<td>16</td>
<td>129 to 134</td>
<td>Aa cobbles &amp; broken</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>134 to 154</td>
<td>Puka rock</td>
<td></td>
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<tr>
<td>18</td>
<td>154 to 160</td>
<td>Puka rock</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>160 to 165</td>
<td>Aa layer, very broken</td>
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</tr>
<tr>
<td>21</td>
<td>165 to 177</td>
<td>Puka 1-7 soft layers</td>
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<td>22</td>
<td>177 to 190</td>
<td>Puka rock</td>
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<td>190 to 202</td>
<td>Puka rock</td>
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<td>202 to 212</td>
<td>Puka rock</td>
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<td>212 to 215</td>
<td>Undisturbed</td>
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<td>215 to 220</td>
<td>Aa layer</td>
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<tr>
<td>Dec 01</td>
<td>220</td>
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<tr>
<td>06</td>
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<tr>
<td>07</td>
<td>220 to 224</td>
<td>Brown</td>
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<tr>
<td>08</td>
<td>224 to 230</td>
<td>Aa layer</td>
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<td>09</td>
<td>230 to 230</td>
<td>Puka rock, soft</td>
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<td>12</td>
<td>236 to 248</td>
<td>Puka, soft</td>
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<td>13</td>
<td>248 to 260</td>
<td>Puka, worn soft layers</td>
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<td>14</td>
<td>260 to 261</td>
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<td>15</td>
<td>261 to 268</td>
<td>Puka halo, very broken</td>
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</tr>
<tr>
<td>16</td>
<td>268 to 269</td>
<td>Blak rock, very hard</td>
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</tr>
</tbody>
</table>

**Summary**

Drilling Log (cont.)
<table>
<thead>
<tr>
<th>DATE</th>
<th>DEPTH BELOW DRILLING PLATFORM (ft)</th>
<th>DRILLER'S ROCK DESCRIPTION</th>
<th>REMARKS</th>
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<tbody>
<tr>
<td>OCT 24</td>
<td>2 feet</td>
<td>Broken cinders</td>
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<tr>
<td></td>
<td>7</td>
<td>Broken cinders</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Broken &quot;pink&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Hard Aa</td>
<td>17 ft.</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Broken cinders and clinkers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>Clinkers and clinkers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>Clinkers and clinkers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>43</td>
<td>Broken cinders and clinkers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>46</td>
<td>Red cinders and clinkers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>55</td>
<td>Red cinders and clinkers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>Clinkers + hard lodes, red cinders</td>
<td></td>
</tr>
<tr>
<td></td>
<td>67</td>
<td>Clinkers; very hard large chucks</td>
<td></td>
</tr>
<tr>
<td>Nov. 01 '77</td>
<td>67</td>
<td>Clinkers + hard clays lodes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>70</td>
<td>Red, very soft</td>
<td></td>
</tr>
<tr>
<td></td>
<td>76</td>
<td>Aa; hard layer</td>
<td></td>
</tr>
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<td></td>
<td>90</td>
<td>Hard Aa</td>
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<td>Hard Aa</td>
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<td>101</td>
<td>Hard Aa</td>
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<td></td>
<td>105</td>
<td>Hard Aa</td>
<td></td>
</tr>
<tr>
<td></td>
<td>106</td>
<td>Hard Aa</td>
<td></td>
</tr>
<tr>
<td></td>
<td>108</td>
<td>Very hard blue rock</td>
<td></td>
</tr>
<tr>
<td></td>
<td>114</td>
<td>Very hard blue rock</td>
<td></td>
</tr>
<tr>
<td></td>
<td>120</td>
<td>Broken &quot;pink&quot; rock</td>
<td></td>
</tr>
</tbody>
</table>
LOCATION PLAN

ISLAND OF HAWAII

PROJECT SITE

TMK: 8-3-08-41
Date: 8/12/78  
Job No.: 876-44  
Hole No.: A-C  
Elevation: 871 ft.

Customer: Dept. Natural Resources  
Location: Ki'i, South Kauai

Driller: Richard Brown  
Helper: Roy Austin  
Arv. Job: ___________  
Lv. Job: ___________

Rig: E  
Gas: ___________  
Oil: ___________  
Repairs: ___________

Hrs.: 10  
Hrs.: 10  
Hrs.: 10

Bit-Size: ___________  
Type: ___________


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

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

Measurements:

Depth  
Formation  
Remarks  
Top  

A  
B


Remarks: Pulling & rocking up pump.

Signed: Richard Brown  
Date: 8/16/78
Date: 8/11/1978  
Job No.: 376-44  
Hole No.: A  
Elevation: 833 ft.  

Customer: Robert Natural Resources  
Location: Kaa Palu Park  

Driller: Richard Barron  
Helper: Art Austrian  
Helper: Milford Taylor  
Arv. Job:  
Lv. Job:  

10 Hrs.  
12 Hrs.  
16 Hrs.  

Rig: 361  
Gas:  
Oil:  
Repairs:  

Bit-Size:  
Type:  

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

Depth Start:  
Depth Stop:  
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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</tbody>
</table>

Remarks:  
Pulled apart 20 ft. Wait until 8 ft. more before start pulling pump.

Signed: Richard Barron  
Date: 8/11/1978
**Drilling Log**

**Date:** 8/10 1978  
**Job No.:** 84W-49  
**Hole No.:** C  
**Elevation:** 882 ft.  
**Customer:** Dept. Natural Resources  
**Location:** Kailua South Kona

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hours</th>
<th>Rig</th>
<th>Helper</th>
<th>Hours</th>
<th>Gas</th>
<th>Oil</th>
<th>Helper</th>
<th>Hours</th>
<th>Repairs</th>
<th>Arv. Job</th>
<th>Lv. Job</th>
<th>Hrs.</th>
<th>Or. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Bourn</td>
<td></td>
<td>366</td>
<td>Alon Austin</td>
<td>14</td>
<td></td>
<td></td>
<td>Terry Arambula</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
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</tr>
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</table>

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

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

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

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Double back to help time out engine.</td>
</tr>
<tr>
<td>9 to find foodable to fuel plant</td>
</tr>
<tr>
<td>Also help tear down mine of jet</td>
</tr>
<tr>
<td>ready to start pulling pump.</td>
</tr>
</tbody>
</table>

| Remarks: | Terry, Lift & Came to Home |

**Signed:** Richard Bourn  
**Date:** 8/10 1978
<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Elevation</th>
<th>Customer</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/9 1978</td>
<td>8HW-44</td>
<td>883 ft.</td>
<td>Dept. Natural Resources</td>
<td>Kea South Kona</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Helper</th>
<th>10 Hrs.</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terry Gomesini</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>14 Hrs.</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alon Austin</td>
<td></td>
<td></td>
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</tbody>
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<tr>
<th>Bit-Size</th>
<th>Type</th>
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</table>

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

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

<table>
<thead>
<tr>
<th>Remark:</th>
<th>___________________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pump testing well hall down over well.</td>
</tr>
<tr>
<td></td>
<td>Hauled fuel in A.M. v. at 2 bbls at a time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signed</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Brown</td>
<td>8/9 1978</td>
</tr>
</tbody>
</table>

| Measurements |
|--------------|-----------|
| A | B |
|    |   |
|    |   |
Date: 8/8/78  Job No. 8HW-44  Hole No. #C  Elevation 884 ft.
Customer: Dept Natural Resources  Location: Keei, South Kona

Driller: Richard Bourn  Hrs.: 14.40  Rig: 366
Helper: Don Austin    10.00 Hrs.  Gas:  
Helper: Terry Rossmuir  1.00 Hrs.  Oil:  
Arv. Job:  
Lv. Job:  

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>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>


Remark:  

Don stayed over until noon so could load more fuel.
Pump lasting well, everything running steady.
No complaints as yet.

Signed: Richard Bourn  Date: 8/8/1978
**DRILLING LOG**

Date: 8/7/78  
Job No.: SHW-44  
Hole No.: #C  
Elevation: 882 ft.

Customer: Dept. Natural Resources  
Location: Kealakekua, Hawaii

Driller: Richard Bourn  
10 Hrs.  
Rig: 361

Helper: Leon Crompton  
14 Hrs.  
Gas:  
Oil:

Arv. 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:

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

**Measurements**

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

**Depth**  
**Formation**  
**Remarks**  
**Top**

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

*Started pump test at 11 A.M. Rate 750 gph, Monitor Reading - Start 11:15*

*Draw down at 7:50 P.M. 11:45 = 1.35 drawdown Water temp 66°F, 22 ppm Salt.*

*Couldn't get fuel delivery house to hold fuel myself.*

---

**Signed**: Richard Bourn  
**Date**: 8/7/78
### DRILLING LOG

**RUSCOE MOSS COMPANY**

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

---

**Date**: 8/3/78  
**Job No.**: HW-44  
**Hole No.**: C  
**Elevation**: 882 ft.

**Customer**: Dept. Natural Resources  
**Location**: Kauai, South Kona

---

<table>
<thead>
<tr>
<th>Name</th>
<th>Hrs.</th>
<th>Rig No.</th>
<th>Gas</th>
<th>Oil</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driller</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Lv. Job</td>
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<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
<th>Casing-Size</th>
<th>Length in hole</th>
<th>in., Amt. Perforated</th>
<th>ft. in.</th>
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<tr>
<th>Depth Start</th>
<th>ft.</th>
<th>Depth Stop</th>
<th>ft.</th>
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<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft., Time</th>
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<th>ft.</th>
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### Measurements

<table>
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<th>A</th>
<th>B</th>
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### Depth

- Book washed, swapped lead shaft coupling. Had to get new one. Made new thread. Got same repair & lead reset. Started pump again, even better no vibrations. Left engine & secured things. Came down on 5/16 (flight) very stayed in hole.
- Start test for salt on Monday.
- Steve talked to people around about noise engine will make.

### Remarks:


---

**Signed**: Richard Bourn  
**Date**: 8/3/78 1978
Date: 8/3 1978   Job No.: BTWH-44   Hole No.: #1   Elevation: 884 ft.
Customer: Dept. Natural Resources   Location: Kealakekua

Driller: Richard Brown   9 Hrs.   Rig: 164
Helper: Terry   9 Hrs.   Gas: Oil
Helper:   Hrs.   Repairs:

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

<table>
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</table>

Remarks: Finished lining up every thing & getting fuel tank up. Drilled 400 ft. & had to get all ready & run about 10 ft. to clean up hole. Everything seems to be O.K. Going to run more in A.M. while Time Inspector around.

Signed: Richard Brown   Date: 8/3 1978
Date: 8/1 1978  
Job No.: 8111-44  
Hole No.: #C  
Elevation: 882 ft.  

Customer: Dept. Natural Resources  
Location: Kaa Lani South, Kona  

Driller: Richard Bourne  
10 Hrs.  
Rig: 364  

Helper: TERRY  
10 Hrs.  

Arv. Job: _______  
Lv. Job: _______  

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

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

Bit-Size: ____________  
Type: ____________  

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

Depth in ft., Lblk at _______ ft.  

Remarks:  
Pump in job - 897 ft Air line set at 891 ft. 7 in. feet above datum on Bore  

drill line laid 8 ft.  

Signed: Richard Bourne  
Date: 8/1 1978  

Remarks:  
Cut off Adaptr plate hole wouldnt fit made some  

fit.jacked up engine 9 set head shift + space set all ready  

ha line up on a.m.
### DRILLING LOG

**Customer:** Dept. Natural Resources  
**Location:** Kea South Kona

<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>Driller</th>
<th>Helper</th>
<th>Helper</th>
<th>Arv. Job</th>
<th>Lv. Job</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/28</td>
<td>84W-44</td>
<td>C</td>
<td>88 1/2 ft.</td>
<td>Richard Brown</td>
<td>Sam</td>
<td>Terry</td>
<td>8</td>
<td>8</td>
<td>Rig 364</td>
</tr>
</tbody>
</table>

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

**Remarks:**

- 44 Joints & Bolts this slate.
- Pump all ready to go except hooking up gear head & engine.

**Remarks:**

- Let in rest of pump & set pump head they want to have. Got gear head in p.m. Gear head won't fit on pump base. Terry & Sam went home. I'm going to Town in A.M. trying to find adapter plate.

**Signed:** Michael Brown  
**Date:** 7/28 1978
Date: 7/27 1978  
Job No. 846-44  
Hole No. #C  
Elevation: 88 ft.

Customer: Dept. Natural Resources  
Location: Kaa South Korea

Driller: Richard Bourn  
10 Hrs.  
Rig: 364

Helper: Sam  
10 Hrs.  
Gas: Oil

Helper: Terry  
10 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>

40 Joints & Bobs, this date.

Remarks: Listed column same slow rate of rod threads  
Couplings also had oil tubes & bearings.

Signed: Richard Bourn  
Date: 7/27 1978
DRILLING LOG

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6668 • 833-1444

Date 7/36 1978  Job No. 844W-44  Hole No. 883  Elevation 883 ft.
Customer  Dept. Natural Resources  Location Keli South Kona

Driller  Richard Bourn  10 Hrs.  Rig 364
Helper  Lagos  10 Hrs.  Gas  Oil
Helper  Adams  10 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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

25 Joints & Bolts this date.

Remarks: Oil tube clamped on first joint 7 out end of Adams. Head off took to shop. Dan took him to Hill cut off threaded Air line cleaned up bearings & coupling 7 ready to go in A.M. Now coming back in A.M.

Signed  Richard Bourn  Date 7/36 1978
**Drilling Log**

- **Date:** 7/25 1928
- **Job No.:** SHW-44
- **Hole No.:** C
- **Elevation:** 88.2 ft.
- **Customer:** Dept. Natural Resources
- **Location:** Kea, South Kona

**Driller:** Richard Brown 10 Hrs. Rig 364
**Helper:** Sam Kakiri 10 Hrs. Gas Oil
**Helper:** Adam 10 Hrs. Repairs
**Arv. Job:** 
**Lv. Job:** 
**Hrs.:** Or. No.

<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>in., Length in hole</th>
<th>ft. in., Amt. Perforated</th>
<th>ft. in.</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>
</table>

**Remarks:**

- Clean 24 Joints & Boulders in Hole as of this date.

**Signed:** Richard Brown  
**Date:** 7/25 1928

---

**Remark:** Please clean & lubricate every joint as you come up out of this hole.
## Drilling Log

**Date:** 7/24/1978  
**Job No.:** 8HW-44  
**Hole No.:** #C  
**Elevation:** 88.5 ft.

**Customer:** Dept. Natural Resources  
**Location:** Kau, South Korea

**Driller:** Richard Bourn  
**Helper:** Dan Leslie, Adam  
**Rig:** 36L  
**Gas:** Oil  
**Oil:**  
**Repairs:**

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

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

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

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

### Depth

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

**Remarks:**

- Took Dlys to move things, in last as pump was sitting all over well.
- Dlys moved around with Dlys, not in service place.
- Got Boul & 1 joint in hole.

**Signed:** Richard Bourn  
**Date:** 7/24/1978
### Drilling Log

**Date:** 7/12/78  
**Job No.:** SHW-44  
**Hole No.:** C  
**Elevation:** 889 ft.

**Customer:** Dep't Natural Resources  
**Location:** Kewi South Korea

**Driller:** Richard Bourn  
**Hrs.:** 6  
**Rig:** 361

**Helper:** Earl Chung  
**Hrs.:** 6  
**Gas:**  
**Oil:**

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

**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>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Decided to let rest of cement go until return to job.</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Took truck & pickup to help lift tanks at 7/17. Also going to home same day. Inspected well, took last pickup at airport key at 9/17.7/17 flew home.

**Signed:** Richard Bourn  
**Date:** 7/11/78
### DRILLING LOG

**Date**: 7/11 1978  
**Job No.**: 8HW-44  
**Hole No.**: #C  
**Elevation**: 88 ft.

**Customer**: Dept Natural Resources  
**Location**: Kea'au South, Kona

<table>
<thead>
<tr>
<th>Driller</th>
<th>10 Hrs.</th>
<th>Helper</th>
<th>10 Hrs.</th>
<th>Helper</th>
<th>Hrs.</th>
<th>Repairs</th>
<th>Or. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Brown</td>
<td></td>
<td>Earl Chung</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rig 59E</td>
<td></td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Arv. Job ** | **Lv. Job** | **Hrs.** | **Or. No.**
---|---|---|---

**Bit-Size** | **Type**
---|---

**Casing-Size** | Length in hole | Amt. Perforated | Ft. | In.
---|---|---|---|---

**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>
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</tbody>
</table>

**Remarks**:  
"Was supposed to get 6 more yards but trucker gave up. We picked up cement truck and drove to hotel so we could get early start. Started at 9 A.M. Tackle 15-ft. hole filling with cement."

**Signed**: Richard Brown  
**Date**: 7/11 1978  

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

**Depth** | **Formation** | **Remarks** | **Top**
---|---|---|---
|       |           |         |     |
Date 7/10 1978  Job No. 8HW-44 Hole No. 7C  Elevation 832 ft.
Customer Dept. Natural Resources  Location Honolua South Kona
Driller  Richard Bourn  10 Hrs.  Rig 366
Helper  Earl Clarke  10 Hrs.  Gas  Oil
Helper  5 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>
</tr>
</thead>
</table>

Measurements

Remarks: Cleaning up location & running cement air hole service truck & pickup home. Time repair on fuel line on rig. New 13 yds. cement in hole. Some more ordered for Am.

Signed Richard Bourn  Date 7/10 1978
<table>
<thead>
<tr>
<th>Date</th>
<th>7/8/1975</th>
<th>Job No.</th>
<th>8Hw. 41</th>
<th>Hole No.</th>
<th>4</th>
<th>Elevation</th>
<th>8 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Kualapa, South Kona</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Hrs.</td>
<td>10</td>
<td>Rig</td>
<td>361</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Chin</td>
<td>Hrs.</td>
<td>10</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Hrs.</td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Lv. Job</td>
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<td>Or. No.</td>
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<tr>
<td>Bit-Size</td>
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<td></td>
<td></td>
</tr>
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<td>Type</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>in., Length in hole</td>
<td>ft.</td>
<td>in., Amt. Perforated</td>
<td>ft.</td>
<td>in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>ft., Depth Stop</td>
<td>ft., Feet Drilled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft., Time</td>
<td>M</td>
<td>ft.</td>
<td></td>
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</tbody>
</table>

### Measurements

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

### Remarks:

- Carried rocks in bucket of 50 by hand and got bridged off on top of rock. Would pull岩石. Filled the gap up to 5 ft.
- Pond 5 bags of cement on top
- Held a 2, going to run 5 more on

### Signed:

Richard Brown | Date 7/8/1975
### Drilling Log

**Date:** 7/7/1978  
**Job No.:** 5155  
**Hole No.:** 49  
**Elevation:** 552 ft.

**Customer:** Dept. Natural Resources  
**Location:** Kee, South Kona

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hrs.</th>
<th>Rig No.</th>
<th>Helper</th>
<th>Hrs.</th>
<th>Or. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Bouru</td>
<td>10</td>
<td>361</td>
<td>Earl Ching</td>
<td>10</td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td>Hrs.</td>
<td>Repairs</td>
<td>Hrs.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit Size</th>
<th>Type</th>
<th>Casing Size</th>
<th>Length in hole</th>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
</tr>
</thead>
</table>

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

**Remarks:**
- Bucket still stuck on ring at 174 ft.  
- Lit down 190 ft., on 2" pipe, but still have problem.  
- Picked up 10 box of cement.

**Remarks:**
- Bucket still stuck  
- Made 2 trips

**Signed:** Richard Bouru  
**Date:** 7/7/1978
Date: 11/16/78  Job No: SHU-44  Hole No: 1  Location: Kea, South Korea

Driller: Richard Brown, 10 Hrs.  Helper: Earl Chung, 10 Hrs.

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>Finished drilling down.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Casing on Bottom Hole: 912'11&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inlet Casing in Hole: 913'11&quot; (913'9&quot;)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water at 872' ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Checked out Cutoff drown in Cutoff pipe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>882' ft.</td>
</tr>
</tbody>
</table>

Signed: Richard Brown, Date: 11/16/78
## DRILLING LOG

**RUSCOE MOSS COMPANY**

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

<table>
<thead>
<tr>
<th>Date</th>
<th>7/5 1975</th>
<th>Job No.</th>
<th>5/6-44</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>284 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natl. Resources</td>
<td>Location</td>
<td>Kea’au South, Kona</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Brown</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Alving</td>
<td>10 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td>Adam</td>
<td>12 Hrs.</td>
<td>Repairs</td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td></td>
<td>Or. No.</td>
<td></td>
</tr>
</tbody>
</table>

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

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

RECEIVED

**LAND DEVELOPMENT**

\( \text{RECEIVED} \)

Remarks: Not all in Hole 920. It only on front left. Put on Bait at 100 ft.

Signed: Richard Brown, Date 7/5 1975
Date: 6/30 1975
Job No.: SMA-44
Hole No.: 1
Elevation: 883.2 ft.

Customer: Dept National
Location: Kaneohe, Oahu, Hawaii

Driller: Richard Brown
10 Hrs. Rig-Hrs.

Helper: Earl Ching
15 Hrs. Gas-Hrs.

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.

<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>

Pumping casing got water 600 ft. away from well. 14 g.p.m.
Pump still going even after casing was repaired.

Remarks:

Signed: Richard Brown
Date: 6/30 1975
Date: 6/19 1978  | Job No.: RHW-44  | Hole No.: 4C  | Elevation: 882.2 ft.
Customer: Dept. Natural Resources  | Location: Near South Korea

Driller: Richard Bourn  | 10 Hrs.  | Rig: 361
Helper: Earl Ching  | 10 Hrs.  | Gas:  | 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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Measured up 38 ft.</td>
<td>Casing is hole going A.M. now.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Going to double up grue in A M. money until 9.

Signed: Richard Bourn  | Date: 6/19 1978
**DRILLING LOG**

**Date:** 6/28 1978  
**Job No.:** HW-49  
**Hole No.:** A-C  
**Elevation:** 884.8 ft.

**Customer:** Dept. Natural Resources  
**Location:** Kaa South Korea

**Driller:** Richard Bourn  
**Helper:** Earl Injury  
**Helper:**  
**Arrv. Job:**  
**Lv. Job:**  
**Hrs. Repairs:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Or. No.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/28 1978</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size:**

**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** | **Top**
--- | --- | --- | ---

- Cut up Bottom 4 Clean up wells.
- Guides patch drill pipe thru cow. Cam. got water samples from sample at check. Water level: 850 ft.
- Assembled 12" Hole Bit & Turns. Cut off steering pipe & taco cut 12 ft & made new deck to support pipe. Filled air line behind 14" steering pipe & cut pipe off changing channel 882.9 ft.
- Umbilical started to make & also shared with derrick to form casing in same part garden on Tender RC. 880 ft.
- Changed with mud & put already to.

**Remarks:** New casing on G.M.  

**Signed:** Richard Bourn  
**Date:** 6/28 1978
## DRILLING LOG

**Date:** 6/27 1978  
**Job No.:** SHW-44  
**Hole No.:** #C  
**Elevation:** 884.6 ft.  
**Location:** Kek South Korea

### Customer Details
- **Department:** National Resources  
- **Location:** Kek South Korea

### Personnel Details
- **Driller:** Richard Brown  
  - 10 Hrs.  
  - Rig: 46L  
- **Helper:** Earl Ching  
  - 10 Hrs.  
  - Gas:  
  - Oil:  
- **Helper:**  
  - Hrs. Repairs:  
  - Arv. Job:  
  - Lv. Job:  
  - Hrs.:  
  - Or. No.:  

### Other Details
- **Bit-Size:**  
- **Type:**  
- **Casing-Size:** in., Length in hole ft. in., Amt. Perforated in 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>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Built #8 ft. dummy and run same also did cleaning and hole didn't get out much. Built water thief so could get water samples for stone in A.M.**
- **Broke off Stem of Bit at 8 ft dummy went all way to bottom water on dummy shown April 25 at 950 2 am must be right.**
- **Hmmm. Turns around in holes can't feel any water in hole up or down.**

### Remarks:
- Stung out dummy line again & measured some again, did make line was right to make ready for inspection in A.M.

### Signed
- **Richard Brown**  
- **Date:** 6/27 1978
Date: 6/26 1978  Job No.: SHW-94  Hole No.: #0  Elevation: 889.2 ft.
Customer: Dept. Natural Resources  Location: Kekii, South Kona

Driller: Richard Bourne  10 Hrs.  Rig: 261
Helper: Earl Ching  16 Hrs.  Gas: Oil:  
Helper:  8 Hrs.  Repairs:  

Bit-Size: 18  Type: Star
Casing-Size: 24 in., Length in hole: 10 ft., in., Amt. Perforated:  
Depth Start: ft., Depth Stop: ft., Feet Drilled:  
Water Levels, Time: M ft., Time: M ft., 

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rowan travels at project. picked up camera at hotel where used stand.</td>
</tr>
<tr>
<td></td>
<td>Rear camera had trouble with count. Couldn't get right count on well, later learned top screen.</td>
</tr>
<tr>
<td></td>
<td>pump camera, I Lauren came down to pump to an part of camera to mainen. I shipped Denver to Hilo.</td>
</tr>
<tr>
<td></td>
<td>Earl went to check, I picked up freight screen and helped with camera, named freight material away from location so can be on my order. got built in Hilo.</td>
</tr>
</tbody>
</table>

Remarks: Bottom of hole 790' and 4' ft for camera. Hike still has some material in bottom.

Signed: Richard Bourne  Date: 6/26 1978
### Drilling Log

**Date:** 6/24/75  
**Job No.:** 844-44  
**Hole No.:** A  
**Elevation:** 884.4 ft.

**Customer:** Dept. Not Provided  
**Location:** Near South Korea

**Driller:** Richard Brown  
**Hrs.:** 10  
**Rig:** 361

**Helper:** Earl Aimy  
**Hrs.:** 10  
**Gas:**  
**Oil:**

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

**Arv. Job:** 7 AM  
**Lv. Job:** 5 PM  
**Hrs.:**

**Bit-Size:** 18  
**Type:** C

**Casing-Size:** 9  
**in., Length in hole:** 12  
**ft., in., Amt. Perforated:** 12  
**ft., in.**

**Depth Start:**  
**Depth Stop:**  
**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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
- Cleaned pit in, stuck I trimmed
- Some also put up put on top on pick-up AM
- Tied all mud in Sam Go Here
- Shift tank.
- Got another coat from lake.

**Remarks:**
- Cleaning up of screen clay. SCOE to Car. Car. Came to get on Monday. I don't know if the cement went there. Sat truck at hotel. Pick up agent this AM. Morn.

**Signed:**  
**Date:** 19
**DRILLING LOG**

Date: 6/23/78  
Job No.: 814W-44  
Hole No.: #5  
Elevation: 884.4 ft.

Customer: Dept. Nat. Resources  
Location: Kea'au South Kona

Driller: Richard Brown  
Helper: Earl Chin  
Helper: ____________________________  
Arv. Job: 7 AM  
Lv. Job: 5 PM

10 Hrs.  
10 Hrs.  
10 Hrs.

Rig: 361  
Gas: ____________________________  
Repairs: ____________________________

Arv. Job: 7 AM  
Lv. Job: 5 PM  
Hrs.  
Or. No.  

Bit-Size: 18"  
Casing-Size: 24" in.  
Length in hole: 10 ft.  
Amt. Perforated: __________ ft. in.

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

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

**Depth**  
**Formation**  
**Remarks**  
**Top**  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formaion</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
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<td></td>
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**Measurements**

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

**Remarks:**  
Cleaning up around location, getting things ready to run casing. End went to depths #7 & #9 and picked up spider & other gunk. Finally got most of it out of hole.

Signed: Richard Brown  
Date: 6/23/78  
1978
**DRILLING LOG**

RUSCOE MOSS COMPANY

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

<table>
<thead>
<tr>
<th>Date</th>
<th>6/23</th>
<th>Job No.</th>
<th>844-74</th>
<th>Hole No.</th>
<th># C</th>
<th>Elevation</th>
<th>884.2 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Nat. Resources</td>
<td>Location</td>
<td>Keiki South Town</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Brown</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>366</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Chung</td>
<td>10 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casing-Size</td>
<td>2-1/4 in. Length in hole</td>
</tr>
<tr>
<td>Depth Start</td>
<td>916 ft. Depth Stop</td>
</tr>
<tr>
<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>
</tr>
</thead>
<tbody>
<tr>
<td>910</td>
<td>Puka Broken</td>
<td>Here Zore Coming from</td>
<td>up high</td>
</tr>
<tr>
<td>915</td>
<td>#202 -</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Leaded 1/4 pipe 9/16 in.
- Drill hole at fishing tool on #7 and #8 job from Hilo.

Remarks: Brought mud of pipe for well 17 Jan 24' long one.
Screen joint 20 ft long one 10 ft 20 ft screen section.
Cleaning and job cutting setting out bed.

Signed: Richard Brown  Date: 6/23  1978
**Date:** 6/21/1978  
**Job No.:** 8HW-44  
**Hole No.:** #3  
**Elevation:** 884.6 ft.  
**Customer:** Dept. Nat. Resources  
**Location:** Kees, South Korea  

**Driller:** Richard Brown  
**Helper:** Earl Ahing  
**Arv. Job:** 7 AM  
**Lv. Job:** 5 PM  
**Rig:** 361  
**Gas:** Oil  
**Hrs.:** 10  
**Hrs.:** 10  
**Hrs.:** 10  
**Or. No.:**  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>902</td>
<td></td>
<td>water still want clean</td>
</tr>
<tr>
<td>910</td>
<td></td>
<td>broken up</td>
</tr>
</tbody>
</table>

**Casing-Size:** 24 in., Length in hole 10 ft.  
**Casing-Type:** 18 in.  
**Casing-Size:** 24 in., Length in hole 10 ft.  
**Casing-Type:** 18 in.  

**Depth Start:** 902 ft., Depth Stop 910 ft., Feet Drilled 8 ft  
**Water Levels, Time:**  
**mm**  

**Remarks:**  
Came with pipe spent most of morning helping unload pipe & stock. Time bought 21 Jan to 50 hrs for 82 ft casing special bond 24" length.  

**Signed:** Richard Brown  
**Date:** 6/21/1978
# DRILLING LOG

**RUSCOE MOSS COMPANY**

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

<table>
<thead>
<tr>
<th>Date</th>
<th>6/30 1978</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>884.1 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Mat. Reservoir</td>
<td>Location</td>
<td>Kealakekua South Kona</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Barn</td>
<td>10 Hrs.</td>
<td>Rig 96L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Carl Chung</td>
<td>10 Hrs.</td>
<td>Gas Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td></td>
<td>Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>24 in.</td>
<td>Type</td>
<td>Steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>900 ft.</td>
<td>Depth Stop</td>
<td>912 ft.</td>
<td>Feet Drilled</td>
<td>2</td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>2 M.</td>
<td>ft.</td>
<td>Time</td>
<td>2 M.</td>
<td>ft.</td>
</tr>
<tr>
<td>Measurements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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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>900</td>
<td>Black Sand &amp; Shale</td>
<td>Broken material, short cuts &amp; damage material coming from above.</td>
<td></td>
</tr>
<tr>
<td>902</td>
<td>Quicksand</td>
<td>Drilled for long period and at 900 ft.,showed poor cutting, had to break down and put down new bits.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Drilled for long period and at 900 ft., showed poor cutting, had to break down and put down new bits. Had to break down some parts of the bit and put new parts to bring it back to normal. Came in on airplane, picked up airport enroute.

**Signed:** Richard Barn | Date: 6/30 1978
# DRILLING LOG

**RUSCOE MOSS COMPANY**

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

**Date** 6/16 1978
**Job No.** SHU-44
**Hole No.** # C
**Location** Keea South Kona

**Elevation** 584.8 ft.

**Driller** Richard Brown
10 Hrs.
Rig 361

**Helper** Earl Cheung
10 Hrs.
Gas

**Arv. Job** 9:45 AM
**Lv. Job** 5:15 PM

**Bit-Size** 18
**Type** Star

**Casing-Size** 24 in.
**Length in hole** 10 ft.
**Depth Start** 873 ft.
**Depth Stop** 900 ft.
**Feet Drilled** 27 ft.

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>897</td>
<td>Hard layer Black</td>
<td>1/2 bit</td>
<td></td>
</tr>
<tr>
<td>894</td>
<td>Rock</td>
<td>1/2 bit</td>
<td></td>
</tr>
<tr>
<td>894</td>
<td>Black Sand</td>
<td>1/2 bit</td>
<td></td>
</tr>
<tr>
<td>800</td>
<td>Or something</td>
<td>1/2 bit</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

- Lick the Sand. Everything all broken up. Give good for while. Other half has fairly clean back. Very heavy water will continue to be about half filled.

**Signed** Richard Brown
**Date** 6/16 1978
Date: 6/15/75  
Job No.: 544-44  
Hole No.: 7  
Elevation: 884 ft.

Customer: Ripley National Insurance  
Location: Kuu South Rose

Driller: Richard Kerrow  
10 Hrs.  
Rig 361

Helper: Carl Albright  
10 Hrs.  
Gas  
Oil

Arv. Job: 7 AM  
Lv. Job: 5 PM  
Or. No.

Bit-Size: 18  
Type: 2  

Casing-Size: 24 in.  
Length in hole: 16 ft.  
Amt. Perforated:  

Depth Start: 588 ft.  
Depth Stop: 89 ft.  
Feet Drilled: 31

Water Levels, Time: M 1 ft., Time: M 1 ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>588</td>
<td>Black Mud</td>
<td>Same as last coat</td>
</tr>
<tr>
<td>592</td>
<td></td>
<td>Tell how much cut off top</td>
</tr>
</tbody>
</table>

Remarks: Water Level to be 80 ft. above Level 884  
Job to be completed by 5 PM today.

Signed: Richard Kerrow  
Date: 6/15/75  
1978
Date: 6/14/1978 Job No. 8411-44 Hole No. #1A Location: Kea South Kona

Customer: Dept. National Gas Company

Driller: Richard Bureau 10 Hrs.  Rig: 36C
Helper: Earl Ching 10 Hrs.

Arv. Job: 7 AM Lv. Job 5 PM

Casing-Size: 2 4 in., Length in hole: 16 ft. in., Amt. Perforated ft. in.

Depth Start: 884 ft., Depth Stop: 858 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>884</td>
<td>Black Sand</td>
<td></td>
</tr>
<tr>
<td>858</td>
<td>Grey Sand</td>
<td>May have hit water in very bottom.</td>
</tr>
</tbody>
</table>

Remarks: Drilling may have went off over south.

Signed: Richard Bureau  Date: 6/15/1978
Date 6/13 1978  Job No. SHW-44  Hole No. #4  Elevation 884.2 ft.
Customer Dept. of National Resources  Location Keiki, South Kona

Driller Richard Bourn  10 Hrs. Rig 36 L
Helper Earl Chang  10 Hrs. Gas
Helper  Hrs. Oil
Arv. Job 7 AM  Lv. Job 5 PM  Hrs. Repairs

Bit-Size 18  Type Star
Casing-Size in. Length in hole ft.  in., Amt. Perforated ft. in.
Depth Start 830 ft., Depth Stop 854 ft., Feet Drilled 24 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>830</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>834</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>854</td>
<td>Casing from above.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Measurements

A B

Remarks: Not much bit work now cut off sand pumping to 15 ft. more & rebuilt same.

Signed Richard Bourn  Date 6/13 1978
<table>
<thead>
<tr>
<th>Date</th>
<th>6/13</th>
<th>Job No.</th>
<th>5HW-44</th>
<th>Hole No.</th>
<th>8C</th>
<th>Elevation</th>
<th>884.2 ft</th>
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</thead>
<tbody>
<tr>
<td>Customer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Location</td>
<td>Kee, South Korea</td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Bourn</td>
<td>10 Hrs.</td>
<td></td>
<td></td>
<td></td>
<td>Rig</td>
<td>36 L</td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>10 Hrs.</td>
<td></td>
<td></td>
<td></td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Arv. Job</td>
<td>7 AM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Or. No.</td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td>5:30 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Or. No.</td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bit Size</td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>2 1/4 in.</td>
<td>Length in hole</td>
<td>10 ft</td>
<td>Amt. Perforated</td>
<td>30 ft</td>
<td>in.</td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>840 ft</td>
<td>Depth Stop</td>
<td>850 ft</td>
<td>Feet Drilled</td>
<td>10 ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft.</td>
<td>M</td>
<td>ft.</td>
<td></td>
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<td></td>
</tr>
</tbody>
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**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>840</td>
<td>Red Cinder &amp;</td>
<td>Casing in main pinnacle</td>
<td></td>
</tr>
<tr>
<td>875</td>
<td>Cinder &amp;</td>
<td>Try 4 stand some</td>
<td></td>
</tr>
<tr>
<td>875</td>
<td>Pebble &amp;</td>
<td>Cinder &amp; Cinder still in hole</td>
<td></td>
</tr>
<tr>
<td>875</td>
<td>Cinder &amp;</td>
<td>Cinder &amp; Cinder still in hole</td>
<td></td>
</tr>
</tbody>
</table>

**Laid development**

Remarks: More paper lost in A.M. today, going away day from about 11:30 on to gather it.
**DRILLING LOG**

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

<table>
<thead>
<tr>
<th>Date</th>
<th>6/16 1975</th>
<th>Job No.</th>
<th>SMAH-47</th>
<th>Hole No.</th>
<th># A</th>
<th>Elevation</th>
<th>834.6 ft.</th>
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<tbody>
<tr>
<td>Customer</td>
<td>Dept Natural Resource</td>
<td>Location</td>
<td>Kea South Kona</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Brown</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>361</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Cherry</td>
<td>10 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit Size</th>
<th>13&quot;</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casing Size</td>
<td>24&quot; in.</td>
<td>Length in hole</td>
</tr>
<tr>
<td>Depth Start</td>
<td>86 ft.</td>
<td>Depth Stop</td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>86</td>
<td>Old Clinton 4</td>
<td>Hole was completed of</td>
<td></td>
</tr>
<tr>
<td>576</td>
<td>Clendenning</td>
<td>sand in hole, height to</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Measure in hole was off for foot, with all the line coming in too high. Drilled up some hard rock, in cutting cone. Sand should make firm footer in view. Measure must check again.

**Signed:** Richard Brown Date 6/16 1975
<table>
<thead>
<tr>
<th>Date</th>
<th>6/9 1978</th>
<th>Job No.</th>
<th>34W-44</th>
<th>Hole No.</th>
<th>#6</th>
<th>Elevation</th>
<th>884 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Kea Lani, South Korea</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Hrs.</td>
<td>16</td>
<td>Rig</td>
<td>361</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Carl Ching</td>
<td>Hrs.</td>
<td>16</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td>Hrs.</td>
<td></td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit Size</td>
<td>15”</td>
<td>Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing Size</td>
<td>24” in.</td>
<td>Length in hole</td>
<td>10 ft.</td>
<td>in.</td>
<td>Amt. Perforated</td>
<td>2 ft.</td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>860 ft.</td>
<td>Depth Stop</td>
<td>561 ft.</td>
<td>Feet Drilled</td>
<td>2 ft.</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 A</th>
<th>Top B</th>
</tr>
</thead>
<tbody>
<tr>
<td>860</td>
<td>Blue Rock or Still light gray in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>862</td>
<td>Sandy boggy with dark hole face</td>
<td>Hard</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tapped Clay</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Well was very 30 minutes could be going really slow, Just added different bent for bit.
Date: 6/8/78  
Job No.: 8744  
Hole No.: C  
Elevation: 884.2 ft.  

Customer: Dept. National Insurance  
Location: Kei, South Korea  

Driller: Richard Bourn  
Helper: Carl Ching  
Arv. Job: 7 A.M.  
Lv. Job: 5 P.M.  

Rig: 864  
Gas:  
Oil:  
Repairs:  

Bit Size: 1.25"  
Type:  

Casing Size: 24 in.  
Length in hole: 10 ft.  
Amt. perforated:  

Depth Start: 858 ft.  
Depth Stop: 540 ft.  
Feet Drilled: 215 ft.  

Water Levels, Time: 

Measurements: 

<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>858</td>
<td>Blue tonk</td>
<td>Still same stuff from the hanging hold up above.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:  

Can't seem to get any more footage.  

Signed: Richard Bourn  
Date: 6/8/78  

Location: Kei, South Korea
**DRILLING LOG**

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

<table>
<thead>
<tr>
<th>Date</th>
<th>6/7 1978</th>
<th>Job No.</th>
<th>SWU-44</th>
<th>Hole No.</th>
<th># C</th>
<th>Elevation</th>
<th>854.2 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Location</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Brown</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>36 L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Chung</td>
<td>10 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td></td>
<td>Hrs.</td>
<td>Repairs</td>
</tr>
<tr>
<td>Arv. Job</td>
<td>7 AM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td>5 PM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>18&quot;</th>
<th>Type</th>
<th>Star</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Casing-Size</td>
<td>24&quot; (in., Length in hole</td>
<td>10 ft. in., Amt. Perforated</td>
<td>15 ft. in.</td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>857 ft.</td>
<td>Depth Stop</td>
<td>858 ft.</td>
<td>Feet Drilled</td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M ft.</td>
<td>Time</td>
<td>M ft.</td>
<td>Measurements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>857</td>
<td>Blue Boke up</td>
<td>Reduce Endo bit</td>
<td></td>
</tr>
<tr>
<td>858</td>
<td>Very very hard!</td>
<td>Changed Bar - furnished</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cleaning out broken bit</td>
<td></td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Come in Score to be blue block Chicago from up above still skidding some.

Signed: Richard Brown
Date: 6/7 1978
**Date**: 6/6/1978  
**Job No.**: NW-44  
**Hole No.**: # C  
**Elevation**: 884.3 ft.

**Customer**: Dept. National Resources  
**Location**: Keen, South Korea

**Driller**: Richard Brown  
**Hrs.**: 10 Hrs.  
**Rig**: 36 cm.

**Helper**: Carl Ching  
**Hrs.**: 10 Hrs.  
**Gas**: Oil

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

---

**Bit-Size**: 18 in.  
**Type**:  
**Casing-Size**: 2-1/4 in., Length in hole 10 ft.  
**Amt. Perforated**: ft. in.

**Depth Start**: 8 ft., Depth Stop**: ft., Feet Drilled**:

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

---

**Depth**  
**Formation**  
**Remarks**  
**Top**  
**A**  
**B**

Cleaning out Core was not bridged off at 810 but also came in 27 ft.

---

**Remarks**: Slow core response on trailer, clean out slow at eight hundred.

**Signed**: Richard Brown  
**Date**: 6/6/1978
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>853</td>
<td>Blue Perkin Basalt welling very 30 or 40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>857</td>
<td>very very Hard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Drilled on Hole 1 1/2 drill bit. Decided to work with 1/2 bit. Hole then put bit in hole. Either could not get 1 1/2 or drill bit got stuck. Took long time. Rope stuck in hole for safety.

Signed: Richard Brown  Date: 6/1/1978
Date: 6/1/78  
Job No: 8HH-44  
Hole No: 7  
Elevation: 584.2 ft.

Customer: Dept. Natural Resources  
Location: Kaua South Kona

Driller: Richard Brown  
10 Hrs.  
Rig: 361

Helper: Earl Chung  
10 Hrs.  
Gas: Oil

Arv. Job: 7 AM  
Lv. Job: 5 PM  
Hrs.:

Bit-Size:  1.5  
Type: Stan


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>
<tbody>
<tr>
<td>849</td>
<td>Blue Rock on</td>
<td>nothing done last 30 minutes</td>
<td></td>
</tr>
<tr>
<td>853</td>
<td>Basalt - very hard</td>
<td>Changed Thrust on Torq. Very Hard. trying to increase footage</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:  
Spin mud: Now lost all torque. Keep astronomers out bobbin. Hot little tight gage when at near still some coming copper. Down down. Have cheat up above bit with Steel wire going in with bit tail.

Signed: Richard Brown  
Date: 6/1/1978
Date: 5/31 1978  Job No. 346-44  Hole No. # C  Elevation 884.2 ft.

Customer:  Dept. of National Resources  Location: Keeaumoku South Kona

Driller:  Richard Bourn  10 Hrs.  Rig 366
Helper:  Earl Clines  10 Hrs.  Gas  Oil
Helper:  Hrs.  Repairs

Bit-Size:  1 1/2"  Type:  Star
Casing-Size:  2 4 in., Length in hole 10 ft.  in., Amt. Perforated ft. in.
Depth Start:  846 ft., Depth Stop:  849 ft., Feet Drilled:  3 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>846</td>
<td>Blue rock</td>
<td>Rock getting lighter in</td>
<td></td>
</tr>
<tr>
<td>849</td>
<td>very very hard</td>
<td>Color became gray but still</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>just as hard</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>drilling every 30 minutes</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:  Rock looks like Basalt light grey stone. To use cementite to scan rock samples. To sample, rebuilt box on bottom of site.

Signed:  Richard Bourn  Date:  5/31 1978
Date: 5/30 1978  
Job No.: HW-44  
Hole No.: #1  
Elevation: 884 ft. 

Customer: Dept. National Resources  
Location: Kaa - South Kona

Driller: Richard Brown  
10 Hrs.  
Rig: 361

Helper: Earl Ching  
10 Hrs.  
Gas: Oil

Arv. Job: 7 AM  
Lv. Job: 5 PM  
Hrs: 
Or. No.

Bit-Size: 18  
Type: Star

Casing-Size: 24 in.  
Length in hole: 10 ft.  
Amt. Perforated: ft.  
In.

Depth Start: 844 ft.  
Depth Stop: 846 ft.  
Feet Drilled: 2 ft

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

Depth  | Formation      | Remarks               | Top  
-------|----------------|-----------------------|
844    | Blue Rock very | drilling every 30     |       |
846    | very very hard | minutes               |       |


Signed: Richard Brown  
Date: 5/30 1978

Customer: Dept. Natural Resources  Location: Keei, South Kona

Driller: Richard Bourn  10 Hrs.  Rig: 36L
Helper: Earl Chung  10 Hrs.  Gas:  Oil


Bit Size: 18  Type:  Stein


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>843</td>
<td>Blue Paka very</td>
<td>Heavy set bit</td>
<td></td>
</tr>
<tr>
<td>844</td>
<td>Weakening Hard</td>
<td>Bad threading every 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 minutes.</td>
<td></td>
</tr>
</tbody>
</table>

Spending most of time welding & gaining winch of hole. Had to rebuild letter cutting edge on bit for same relief. Run new pipe socket.

Signed: Richard Bourn  Date: 5/29/1978
**DRILLING LOG**

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

<table>
<thead>
<tr>
<th>Date</th>
<th>5/26 1978</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>XH-44</td>
</tr>
<tr>
<td>Hole No.</td>
<td># C</td>
</tr>
<tr>
<td>Elevation</td>
<td>594.2 ft</td>
</tr>
<tr>
<td>Customer</td>
<td>Dept National Revenue</td>
</tr>
<tr>
<td>Location</td>
<td>Kaua, Nuth Kau</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Brown 10 Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Chaney 10 Hrs.</td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casing-Size</td>
<td>24 in., Length in hole 10 ft.</td>
</tr>
<tr>
<td></td>
<td>in., Amt. Perforated 27 ft. in.</td>
</tr>
<tr>
<td>Depth Start</td>
<td>841 ft., Depth Stop 843 ft.</td>
</tr>
<tr>
<td></td>
<td>Feet Drilled 3 1/2 ft</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Depth Formaion</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>841</td>
<td>Blue Rock, very</td>
</tr>
<tr>
<td>843</td>
<td>Clayey sand at about 3 ft., cutting away 3 1/2 minute.</td>
</tr>
<tr>
<td></td>
<td>Time going into cut of sand</td>
</tr>
<tr>
<td></td>
<td>860 ft.</td>
</tr>
</tbody>
</table>

**Measurements**

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

**Remarks**

Spending most of time welding & rebuilding.  

Signed: Richard Brown  
Date: 5/26 1978
Date: 5/25/78  
Job No. : Stur-74  
Hole No. : # C  
Elevation: 1212 ft.  

Customer: Dept. Natural Resources  
Location: Kaa I Kea, Kauai  

Driller: Richard Bawer  
Hours: 10  
Rig:  

Helper: Earl Ching  
Hours: 10  
Gas:  
Oil:  
Repairs:  

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

Bit-Size: 18  
Type:  

Casing-Size: 24 in.  
Length in hole: 16 ft.  
in., Amt. Perforated:  
ft.  
in.  

Depth Start: 834 ft.  
Depth Stop: 871 ft.  
Feet Drilled: 37 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>839</td>
<td>Blue Ford quarry</td>
<td>Heavy in abrasion</td>
<td></td>
</tr>
<tr>
<td>842</td>
<td></td>
<td>Heavy Hard.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Drilling was 50 to 60 minutes taken about 1 ft. in  
After drilling, loss of drilling fluid  
Completely took out bit, con off  
Drill, to rebuild.  

Signed: Richard Bawer  
Date: 5/25/78
Date 5/24 1978  Job No. SHW-44  Hole No. # C  Elevation 884.8 ft.  
Customer DP Wt Natinal Resources  Location Ken, South Kona  
Driller Richard Bowers  10 Hrs.  Rig 366  
Helper Earl Ching  10 Hrs.  Gas  
Helper  10 Hrs.  Oil  

Bit-Size 18  Type Star  
Depth Start 838 ft.  Depth Stop 839 ft.  Feet Drilled 1 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>838</td>
<td>Blue Rock</td>
<td>Grey clay</td>
<td></td>
</tr>
<tr>
<td>839</td>
<td>Key Hard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Changed Color from Blue Rock to Light Grey Color.  Almost white when Drilled, mildly 25% of Time.  

Signed Richard Bowers  Date 5/24 1978
**Drilling Log**

**Ruscoe Moss Company**

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

**Date** 5/23/78  
**Job No.** HW-27  
**Hole No.** F  
**Elevation** 884 ft.

**Customer** Dept. Natural Resources  
**Location** Kealakekua Bay

**Driller** Richard Brown  
**Helper** Earl Ching

**Arv. Job**  
**LW. Job**  
**Hrs.** 10  
**Rigs.** 36l

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

**Arv. No.**  
**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>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Measurments**

**A**  
**B**

---

**Remarks:**  
Weighted out for reaming, on trip 60’ ft of 6” w/t  
Shine out, cleaned up case, came out of hole no. 50’ inside  
Shine out, broke down fishing, little stringing up, fishing trip  
Loaded up fishing tools & returned for rig. Debel last of No. 2 Bit

**Signed** Richard Brown  
**Date** 5/23/78  
1978
**Drilling Log**

---

**Date:** 5/22 1978  
**Job No.:** XHw-44  
**Hole No.:** C  
**Elevation:** 884.2 ft.

**Customer:** Dept. National Resources  
**Location:** Koolau, South Kona

**Driller:** Richard Bourn  
**Rig:** 361  
**Helper:** Earl Ching  
**Gas:**  
**Oil:**  
**Repairs:**

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

**Bit-Size:** 18  
**Type:** star

**Casing-Size:** 24 in.  
**Length in hole:** 10 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** | **A** | **B**
---|---|---|---|---|

| **60 ft.** | **Land Development** | Measured in to 460 electrical, drilling to 50 ft. Fench, quiet, pitted up line at 75 ft. Brought to surface, caught some 60 ft. of fluid and ready to speed | | |

---

**Remarks:** Laid down Hill, added Casing, line jumped, blown. Had to put some rock to keep it. Drove string up. Fishing tools had to clean all joints some side. Found that all string was measured in.

**Signed:** Richard Bourn  
**Date:** 5/22 1978
<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>Driller</th>
<th>Hrs.</th>
<th>Helper</th>
<th>Hrs.</th>
<th>Helper</th>
<th>Or. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/19</td>
<td>19-78</td>
<td># C</td>
<td>884.2 ft.</td>
<td>Richard</td>
<td></td>
<td>Earl</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Customer:** Dept. National Academy  
**Location:** Kealakekua Bay South Kona

<table>
<thead>
<tr>
<th>Driller</th>
<th>4 Hrs.</th>
<th>Rig</th>
<th>Helper</th>
<th>8 Hrs.</th>
<th>Gas.</th>
<th>Oil</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>4 Hrs.</th>
<th>Rig</th>
<th>Helper</th>
<th>8 Hrs.</th>
<th>Gas.</th>
<th>Oil</th>
</tr>
</thead>
</table>

**Helper:**

**Av. Job:** 
**Lv. Job:** 
**Hrs.:**

<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>in., Length in hole</th>
<th>ft.</th>
<th>in., Amt. Perforated</th>
<th>ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft.</th>
<th>Depth Stop</th>
<th>ft., Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Water Levels</th>
<th>M</th>
<th>ft., Time</th>
<th>M</th>
<th>ft.</th>
</tr>
</thead>
<tbody>
<tr>
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**Measurements**

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

**Depth**

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

**Remarks:** Earl picked up fishing tools at dock & headed to lighthouse. Cleaned & got ready to string same. Started out day painting on rig. Home for my birthday week end.

**Signed:** Richard Bourn  
**Date:** 5/19 1978
## DRILLING LOG

### Details
- **Date**: 5/18/1978
- **Job No.**: 31140-44
- **Hole No.**: #7
- **Elevation**: 8,844.6 ft.
- **Customer**: Dept. of Natural Resources
- **Location**: Kei, South Korea

### Personnel
- **Driller**: Richard Brown
- **Helper**: Earl Ching
- **Arv. Job**: 8 Hrs.
- **Lv. Job**: 8 Hrs.
- **Hrs. Gas**: 8 Hrs.
- **Hrs. Oil**: 8 Hrs.
- **Hrs. Repairs**: 8 Hrs.
- **Or. No.**:

### 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>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Remarks:
- Changing Oil & Cleaning Clutches & grease off Rig & Engine painting on Rig.

### Signed
- **Signed**: Richard Brown
- **Date**: 5/18/1978
Date 5/12 1978 Job No. 34W-44 Hole No. # C Elevation 884.2 ft.
Customer Dept. National Resources Location Kau South Korea
Driller Richard Bourn 8 Hrs. Rig 36-L
Helper Earl Chun 8 Hrs. Gas Oil
Helper Hrs. Repairs
Arv. 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 ___________
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>

Remarks: He took grade off top of pole & repaired same also weld up grade hole to cut off with tack saw. Came back to shop repairing on rig.

Signed Richard Bourn Date 5/17 1978
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819

**Customer**  National Resources

**Location**  Kees Smith Korea

**Date**  5/16/1978  **Job No.** HW-74  **Hole No.** #C  **Elevation** 984 ft.

**Driller**  Richard Bourn  **Hrs.**  8  **Rig**  36L

**Helper**  Earl Olwig  **Hrs.**  8  **Gas**

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

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

---

**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**

**Formation**

**Remarks**

**Top**

---

**Measurements**

---

**Remarks:**  Repairs on rig.

---

**Signed**  Richard Bourn  **Date**  5/16/1978
**DRILLING LOG**

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

**Date** 5/15 1978  **Job No.** 8HUI-74  **Hole No.** #6  **Elevation** 884.6 ft.

**Customer** Dept. National Airlines  **Location** Kei, South Korea

Driller: Richard Bourn  8 Hrs.  **Rig** 341
Helper: Earl Chung  8 Hrs.  **Gas**  **Oil**

Arv. Job:  **Lv. Job:**  Or. No.:  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>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
Repairing on rig after run away with sand line off, took 500' to take but drum lines also made new string & Equalizer. Box was 1/2 in. from on rig, took clutch apart & cleaned on married tool.

**Signed** Richard Bourn  **Date** 5/15 1978
**DRILLING LOG**

---

**Date**: 5/13 1978  
**Job No.**: SHW-44  
**Hole No.**: #6  
**Elevation**: 884.2 ft.

**Customer**: Dept. National Resources  
**Location**: Kekaha, South Kona

**Driller**: Richard Brown  
**Hrs.**: 10  
**Rig**: 36L

**Helper**: Earl Chung  
**Hrs.**: 10  
**Gas**:  
**Oil**:  
**Repairs**:  
**Hrs.**

**Arv. Job**: 7:AM  
**Lv. Job**: 5:PM  
**Hrs.**

---

**Bit-Size**: 18  
**Type**: Astor

**Casing-Size**: 24 in.  
**Length in hole**: 10 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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Speed wire breaking on bit &amp; cleaning stuck out of hole.</td>
</tr>
</tbody>
</table>

---

**Remarks**: May have drilled a few inches and have pings came out equalng, box of turned stand line loose going in hole 448 away couldn't stop with clutches kept jumping out last cord & line with virtual set of dog being up & firing on done.

---

**Signed**: Richard Brown  
**Date**: 5/13 1978
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 8311-6888 • 833-1444

Date: 5/12 1978  
Job No. SUV-44  
Hole No. #8  
Elevation 884.4 ft.

Customer: Dept National Resources  
Location: Ken, South Korea

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hours</th>
<th>Rig 362</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Bourn</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hours</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earl Ching</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper Hours</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Arv. Job: 7:AM  
Lv. Job: 5:PM  
Hrs.:         
Or. No.:      

<table>
<thead>
<tr>
<th>Bit Size</th>
<th>Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing Size</th>
<th>Length in hole</th>
<th>In., Amt. Perforated</th>
<th>ft. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 in.</td>
<td>10 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>837 ft.</td>
<td>838 ft.</td>
<td>1 ft.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>837</td>
<td>Blue Sand</td>
<td>Hole still coming down</td>
<td></td>
</tr>
<tr>
<td>838</td>
<td>Hard</td>
<td>How to come Carefull</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Get hole Cleaned back to bottom welding every 30 minutes.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Get Cleaned back to bottom still coming down

Signed: Richard Bourn  
Date: 5/12 1978
<table>
<thead>
<tr>
<th>Date</th>
<th>5/11 1978</th>
<th>Job No.</th>
<th>AHW-44</th>
<th>Hole No.</th>
<th>C</th>
<th>Elevation</th>
<th>854.2 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Kauai, South Korea</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Hours</td>
<td>10</td>
<td>Rig 366</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Chun</td>
<td>Hours</td>
<td>10</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td>Hours</td>
<td></td>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Av. Job</td>
<td>7:00 AM</td>
<td>Leaving Job 5:00 PM</td>
<td>Hrs</td>
<td>Or. No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>18</td>
<td>Type</td>
<td>Star</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</td>
<td>ft.</td>
<td>Time</td>
<td>M</td>
<td>ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>Form.</td>
<td>Remarks</td>
<td>Perforated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>836</td>
<td>Blu Btr. Very Very</td>
<td>Building every 30 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>837</td>
<td>Hard Hard</td>
<td>Still coming</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks:</td>
<td>Run new rope socket hole caused in on tools locked for over 2 yrs. To get loose hole caused an extra take off of day trying to clean out hole.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signed</td>
<td>Richard Brown</td>
<td>Date</td>
<td>5/11 1978</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Date 5/10 1978  Job No. 8HW-44  Hole No. #C  Elevation 884 r. ft.
Customer Dept National Resources  Location Keeaumoku, South Kona

Driller Richard Brown  10 Hrs.  Rig 36k
Helper Earl Chun  10 Hrs.  Gas Oil
 Helper                  Hrs.  Repairs

Bit-Size 18  Type stern

Casing-Size 24 in., Length in hole 10 ft. in., Amt. Perforated ft. in.
Depth Start 834 ft., Depth Stop 836 ft., Feet Drilled 2

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>834</td>
<td>Blue Shell Rock</td>
<td>Welding every 30 minutes</td>
</tr>
<tr>
<td>836</td>
<td>Hiawatha Sand</td>
<td>Long trip bit fork</td>
</tr>
</tbody>
</table>


Signed Richard Brown  Date 5/10 1978
<table>
<thead>
<tr>
<th>Date</th>
<th>5/9 1978</th>
<th>Job No.</th>
<th>SWW-44</th>
<th>Elevation</th>
<th>884.6 ft.</th>
</tr>
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<tbody>
<tr>
<td>Customer</td>
<td>Dept. National Resources</td>
<td>Location</td>
<td>Kea, South Kona</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Hrs.</td>
<td>10</td>
<td>Rig</td>
<td>366</td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>Hrs.</td>
<td>10</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Bit-Size</td>
<td>18</td>
<td>Type</td>
<td>Stem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>24 in.</td>
<td>Length in hole</td>
<td>16 ft.</td>
<td>Amt. Perforated ft.</td>
<td>in.</td>
</tr>
<tr>
<td>Depth Start</td>
<td>832 ft.</td>
<td>Depth Stop</td>
<td>834 ft.</td>
<td>Feet Drilled</td>
<td>2 ft.</td>
</tr>
<tr>
<td>Water Levels</td>
<td>M</td>
<td>ft.</td>
<td>M</td>
<td>ft.</td>
<td></td>
</tr>
</tbody>
</table>

**Formation**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>832</td>
<td>At Blue Rock</td>
</tr>
<tr>
<td>834</td>
<td>Well is very heavy. Water in hole rising 70 minutes, freeing up. Bit got stuck. Analysis.</td>
</tr>
</tbody>
</table>

**Measurements**

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

**Remarks:**
Job still coming bad, hope boat helps, on same finished repairing slides on top of pole.

Signed: Richard Brown
Date: 5/9 1978
## DRILLING LOG

**RUSCOE MOSS COMPANY**

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

---

<table>
<thead>
<tr>
<th>Date</th>
<th>5/5 1978</th>
<th>Job No.</th>
<th>8HW-44</th>
<th>Hole No.</th>
<th># C</th>
<th>Elevation</th>
<th>884.1 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Kea South Korea</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Driller    | Richard Bourn | 10 Hrs. | Rig | 361 |
| Helper     | Earl Clary  | 10 Hrs. | Gas | Oil |
| Arv. Job   | 7:AM | Lm. Job | 5:PM |

| Bit-Size   | 18" |
| Casing-Size | 24" in., Length in hole | 10 ft. | in., Amt. Perforated | ft. in. |
| Depth Start | 829 ft. | Depth Stop | 832 ft. | Feet Drilled | 3 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>
<tbody>
<tr>
<td>829</td>
<td>AA &amp; Clinkers</td>
<td>Not much progress</td>
<td></td>
</tr>
<tr>
<td>832</td>
<td>Very Hard Hard</td>
<td>Derick holding metal</td>
<td>metal on one side.</td>
</tr>
</tbody>
</table>

### Remarks:

Worked on crown trying to put new slider in same with out failure. Don’t arcade. Had to take off rope spout to release fire pressure on crown. Got one in need bolts for other. Ran all afternoon. Everyone to stay 100 up in derick.

**Signed** Richard Bourn  **Date** 5/5 1978
**DRILLING LOG**

RUSCOE MOSS COMPANY

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

<table>
<thead>
<tr>
<th>Date</th>
<th>5/4 1978</th>
<th>Job No.</th>
<th>SWU-44</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>884 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Oahu, North Korea</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Brown</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>364</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>10 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td>9:00 AM</td>
<td>Lv. Job</td>
<td>5:00 PM</td>
<td>9:00 AM</td>
</tr>
</tbody>
</table>

| 18"       | 18"     | Star    |       |       |
| 24"       | 18"     | Depth   | 10 ft. |     |
| 18"       | 18"     | Feet Drilled |     |     |

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M 5 ft., Time</th>
<th>M 5 ft.</th>
<th>Measurements</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>picked up men at air port to help pull offline.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>had some problems as plastic would pull line on air. and also didn't have enough rope tied to double of line curled up.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

Hand line broke off when pulling line was so bad to recovery took extra time, finished up in time to put done at Airline, got ready to have rope problem fixed same.

**Signed:** Richard Brown
**Date:** 5/4 1978
Date: 5/3/78

Job No.: 574-74

Hole No.: 4

Elevation: 894 ft.

Customer: Dept. Natural Resources

Location: Kealakekua, Big Island

Driller: Richard Brown

10 Hrs.

Rig: 364

Helper: Carl Ching

10 Hrs.

Gas: 364

Oil: 364

Arv. Job: 7:00 AM

Lv. Job: 5:00 PM

Or. No.: 364

Bit-Size: 18"

Type: Star

Casing-Size: 24"

In., Length in hole: 10 ft.

In., Amt. Perforated: 2 ft.

Depth Start: 824 ft.

Depth Stop: 829 ft.

Feet Drilled: 5 ft.

Water Levels, Time:

M ft., Time: M ft.

Measurements:

Depth | Formation | Remarks |
--- | --- | --- |
824 | AA & Clincher Shale | Slow drilling, cant \n829 | Very hard & abrasive, seem to get 1 foot | Still shuffling down, hole \n
Remarks: Going to change ends on line in 9 AM as was getting hot & need new rope. Just found got them ready & strong to pull off some getting help from Honolulu to pull off line.

Signed: Richard Brown

Date: 5/3/78

1978
#### Drilling Log

**RUSCOE MOSS COMPANY**

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

---

**Date:** 5/2 1978  
**Job No.:** 804-74  
**Hole No.:** #C  
**Elevation:** 884.2 ft.

**Customer:** Dept National Resources  
**Location:** Kaa South Kona

**Driller:** Richard Bourn  
10 Hrs.  
**Helper:** Carl Cheing  
10 Hrs.  
**Helper:**  
**Arv. Job:** 7: AM  
**Lv. Job:** 5:PM  
**Hrs.:**  
**Or. No.:**

---

**Bit-Size:** 18"  
**Type:** Star

---

**Casing-Size:** 24" in., Length in hole 10 ft.  
**Am. Perforated:** ft. in.

---

**Depth Start:** 819 ft., Depth Stop 824 ft., Feet Drilled 5 ft.

---

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

---

**Depth** | **Formation** | **Remarks** | **Top**
---|---|---|---
819 | AA. Chukar | Can't seem to get anything |  
824 | key hard & abrasive | Too drill any faster just about speed still a lot of stuff coming down hole |

---

**Remarks:** Still lots of water on line from mucking. Well seems to be where hot lots of Alum & nodules of Chukar.

---

**Signed:** Richard Bourn  
**Date:** 5/2 1978
Date: 5/1/1978  
Job No: 86W-44  
Hole No: B  
Elevation: 884.2 ft.  

Customer: Dept. of Natural Resources  
Location: Kea'au, South Kona  

Driller: Richard Brown  
10 Hrs.  
Rig: 561  

Helper: Earl Ching  
10 Hrs.  
Gas: Oil  

Helper:  
Hrs.: Repairs  

Arv. Job: 7 AM  
Lv. Job: 5 PM  

Bit Size: 18"  
Type: Steel  

Casing Size: 24" in., Length in hole: 16 ft. in., Amt. Perforated:  


Water Levels, Time:  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formations</th>
<th>Remarks</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>815</td>
<td>Blue Rock</td>
<td>Break out of Blue Rock</td>
<td></td>
</tr>
<tr>
<td>817</td>
<td>Very Hard.</td>
<td>But seems to be AA</td>
<td></td>
</tr>
<tr>
<td>817</td>
<td>A &amp; Clinkers</td>
<td>Blue Block; still stiffing</td>
<td></td>
</tr>
<tr>
<td>819</td>
<td>Very Hard.</td>
<td>Down hole</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Crown still getting rough & bad metal to metal every needs new slides on front side. Still lots of wear on line needs to be reversed, going to Qt when need new pipe available.  

Signed: Richard Brown  
Date: 5/1/1978
**Drilling Log**

**830 AHUA STREET • HONOLULU, HAWAII 96819**

TELEPHONE (808) 839-6558 • 833-1444

---

**Date:** 4/28/78  
**Job No.:** #4W-44  
**Hole No.:** #A  
**Elevation:** 885.4 ft.

**Customer:** Dept. National Reserves

**Location:** Kei, South Korea

**Driller:** Richard Brown  
**Helper:** Carl Cheung

**Rig:** 361

**Arv. Job 9 A.M.**  
**Lv. Job 5 P.M.**

---

**Bit-Size:** 18"  
**Type:** Steel

**Casing-Size:** 24" in.  
**Length in hole:** 10 ft.  
**Amt. Perforated:** in.

**Depth Start:** 813 ft.  
**Depth Stop:** 815 ft.  
**Feet Drilled:** 2 ft.

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

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>813</td>
<td>Blue Clark</td>
<td>put new box on bit again</td>
<td></td>
</tr>
<tr>
<td>815</td>
<td>Very Hard Hold.</td>
<td>swelling every 30 minutes</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

The new rope locker I built up but changed  
for some to try something different, but laid it up just  
the same time to rebuild Roman tomorrow. I am now quite  
bad on whipping or had hoped. Home up across places just lay up  
may have to remove line before finish.

**Signed:** Richard Brown  
**Date:** 4/28/78  
**1978**
**Drilling Log**

**Date:** 4/27/78  
**Job No.:** SHW-44  
**Hole No.:** A-C  
**Elevation:** 884.8 ft.

**Customer:** Dept. National Resources  
**Location:** Keei South Kona

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hours</th>
<th>Rig Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Bower</td>
<td>10</td>
<td>364</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hours</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earl Ching</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hours</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td></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:AM</td>
<td>5:PM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit Size</th>
<th>Type</th>
<th>Casing Size</th>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot;</td>
<td>Star</td>
<td>24&quot; in.</td>
<td>811 ft.</td>
<td>813 ft.</td>
<td>2 ft</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Levels</th>
<th>M</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>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>811</td>
<td>Blue Rock</td>
<td>Still shifting down from above.</td>
<td></td>
</tr>
<tr>
<td>813</td>
<td>Very dry Hrd.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**  
Organic getting worse may have to replace before finish job. Must be using metal to metal yet. Welling every 50 minutes. Got dry dam ppr.

**Signed:** Richard Bower  
**Date:** 4/27/78  
**1978**
Date: 3/26/28  
Job No: SMTW-44  
Hole No: #3  
Elevation 884.2 ft.

Customer: Dept. National Resources  
Location: Kea South Kona

Driller: Richard Bourn  
10 Hrs.  
Rig: 366

Helper: Earl Ching  
10 Hrs.  
Gas:  
Oil:

Helper:  
Hrs.  
Repairs:

Arv. Job: 7:AM  
Lv. Job: 5:PM  
Hrs.  
Or. No.

Bit-Size: 18"  
Type: Steel

Casing-Size: 54" in.  
Length in hole: 10 ft.  
Amt. Perforated: ft. in.

Depth Start: 806 ft.  
Depth Stop: 840 ft.  
Feet Drilled: 3 ft

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>
<tbody>
<tr>
<td>809</td>
<td>Blue Rock</td>
<td>Still some sl Lfing from</td>
<td></td>
<td></td>
</tr>
<tr>
<td>811</td>
<td>clay very hard. Above, Rock very abwe.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Welling on bit every 30 minutes. Spaded most of the welling thin six feet out of hole. Put new bit on bit but first aid for rain. Rigs didn't chilling dotbit also crowns getting worn. Fibre beds starting to fall out.

Signed: Richard M. Brown  
Date: 3/26/28
DRILLING LOG

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

Date 11/25/78 Job No. SHU-47 Hole No. # C Elevation 557.1 ft.

Customer Kept Natural Resources Location Kiki South, Kuu

Driller: Richard Bonac 10 Hrs. Rig 36L
Helper: Earl Ohing 16 Hrs. Gas Oil
Helper

Bit-Size 18" Type: Stan

Casing-Size 14" in., Length in hole 10 ft. in., Amt. Perforated ft. in.

Depth Start 81/6 ft., Depth Stop 8:7 ft., Feet Drilled 3 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>81/6</td>
<td>Blue Pwdr</td>
<td>Leaving own take away</td>
</tr>
<tr>
<td>81/9</td>
<td>Intensive Hard</td>
<td>Both pumping on damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Damage 24 med to 137 still land up tone</td>
</tr>
</tbody>
</table>

Remarks: Still have some stuff from up above learn up some lines since fall Rock pack improperly broken changed pump basket to be other hole to stay out

Signed Richard Bonac Date 11/25/78 1978
Date: 4/24/78  
Job No.: SHW-47  
Hole No.: #C  
Elevation: 884.2 ft.

Customer: Dept. Natural Resources  
Location: Kea, South Kona

Driller: Richard Brown  
10 Hrs.  
Rig: 364

Helper: Earl Chung  
10 Hrs.  
Gas:  
Oil:

Helper:  
Hrs.  
Repair:

Arr. Job: 7 AM  
Lv. Job: 5 PM  
Hrs.  
Or. No.:

Bit-Size: 18"  
Type: Star

Casing-Size: 24"  
In., Length in hole: 10 ft.  
In., Amt. Perforated:

Depth Start: 298 ft.  
Depth Stop: 346 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>795</td>
<td>A A Foam</td>
<td>Shutoff</td>
<td></td>
</tr>
<tr>
<td>806</td>
<td>A A Foam</td>
<td>Hard</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Current did not seem bit out that much, gutter hard all along, running up bit bit. Added 5 new keys and it kept well.

Signed: Richard Brown  
Date: 4/27 1978
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1774</td>
<td>Cinder Cone</td>
<td>Cemented off cinder cone with 5 bags cement</td>
</tr>
</tbody>
</table>
**RUSCOE MOSS COMPANY**

**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6688 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>4/19 1948</th>
<th>Job No.</th>
<th>AHUA-44</th>
<th>Hole No.</th>
<th>#C</th>
<th>Elevation</th>
<th>884.2 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept National Resource</td>
<td>Location</td>
<td>Kee, South Kilauea</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard B.</td>
<td>10 Hrs</td>
<td>Rig</td>
<td>36 L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Carl O.</td>
<td>10 Hrs</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Or. No.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size**
- 18"

**Casing-Size**

**Depth Start**
- 780 ft.

**Depth Stop**
- 792 ft.

**Feet Drilled**
- 13 ft.

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

<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>
<td>780</td>
<td>Pi'ka</td>
<td>Hard &amp; soft layers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>784</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>784</td>
<td>C. &amp; C.</td>
<td>Slugging in casing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>792</td>
<td>Coming</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Measurements**

**Remarks:**
- Made extensive footage in C. & C. but came out to half slugs, back in casing settled hole about 3 ft. with laut side. all in water. Corr. in bit also.

**Signed:** Richard B. Date 4/19 1948
### DRILLING LOG

**RUSCOE MOSS COMPANY**

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

<table>
<thead>
<tr>
<th>Date</th>
<th>4/18/78</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>SWH-44</td>
</tr>
<tr>
<td>Hole No.</td>
<td># C</td>
</tr>
<tr>
<td>Elevation</td>
<td>884.2 ft.</td>
</tr>
</tbody>
</table>

**Customer**

Dept. National Resources

**Location**

Keeaumoku, South Kona

---

**Driller**

Richard Barron 10 Hrs.

**Rig**

361

**Helper**

Earl Cheung 10 Hrs.

**Gas**

Oil

**Helper**

Hrs.

**Repairs**

---

**Arv. Job**

7:00 AM

**Lv. Job**

5:00 PM

---

**Bit-Size**

18"

**Type**

Star

---

**Casing-Size**

24" in., Length in hole 10 ft. in., Amt. Perforated ft. in.

---

**Depth Start**

220 ft.

**Depth Stop**

280 ft.

**Feet Drilled**

10 ft.

---

**Water Levels, Time**

M ft. Time M ft.

---

**Depth**

1990

**Formation**

Molten Material

**Remarks**

Full of Alumina Crystals

---

**Depth**

1996

**Formation**

Molten Rock

**Remarks**

---

**Depth**

1976

**Formation**

Puka

**Remarks**

Hard and soft layers

---

**Depth**

1980

**Formation**

---

---

**Remarks**

Using bentonite to try to pick mudball off bottom

Own skin rope accident

---

**Signed**

Richard Barron  Date 4/18/78
**DRILLING LOG**

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

---

**Date:** 4/17/1978  
**Job No.:** SHL-49  
**Hole No.:** # C  
**Elevation:** 884.2 ft.

**Customer:** Dept National Resources  
**Location:** Ko‘ol South Korea

**Driller:** Richard Barnes  
**10 Hrs.**  
**Rig:** 361

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

**Arv. Job:** 7:AM  
**Lv. Job:** 5:PM

---

**Bit Size:** 18”  
**Type:** Star

**Casing Size:** 24” in.  
**Length in hole:** 16 ft.  
**Amt. Perforated:** in.

**Depth Start:** 160 ft.  
**Depth Stop:** 770 ft.  
**Feet Drilled:** 16 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>160</td>
<td>Rubic</td>
<td>Hard, soft, brick</td>
<td></td>
</tr>
<tr>
<td>161</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>Salt Water</td>
<td>pink, green w/bail, oil</td>
<td></td>
</tr>
<tr>
<td>771</td>
<td>Salt Alum.</td>
<td>with Alum. crystals</td>
<td></td>
</tr>
</tbody>
</table>

**Measurements**

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

**Remarks:** Material was hard to lift off bottom even with bentonite; but still did a good job

**Date:** 9/4/1978

---

**Signed:** Richard Barnes  
**Date:** 4/17/1978

---
**Date:** 4/14 1978  
**Job No.:** SW-44  
**Hole No.:** #0  
**Elevation:** 884.2 ft.  
**Customer:** Dept National Resources  
**Location:** Keel South Korea  

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Hours</th>
<th>Rig</th>
<th>Gas</th>
<th>Oil</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driller</td>
<td>Richard Bourn</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7:AM</td>
<td>5:PM</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

Admission stage some tools turn good  
If know excess were one line must be Ok.

**Signed:** Richard Bourn  
**Date:** 4/14 1978
**DRILLING LOG**

**Date:** 3/13/1978  
**Job No.:** 8HW-44  
**Hole No.:** 2  
**Elevation:** 884.2 ft.

**Customer:** Dept. of Natural Resources  
**Location:** Kea South, Honolul

**Driller:** Richard Bourn  
**Rig:** 36L  
**10 Hrs.**

**Helper:** Earl Chaney  
**10 Hrs.**

**Gas**  
**10 Hrs.**  
**Oil**  
**Repairs**

**Arv. Job:** 7:AM  
**Lv. Job:** 5:PM  
**10 Hrs.**

**Bit-Size:** 18”  
**Type:** Star

**Casing-Size:** 14” in., **Length in hole:** 10 ft.  
**Amt. Perforated:** 30 ft. in.

**Depth Start:** 210 ft.,  
**Depth Stop:** 340 ft.,  
**Feet Drilled:** 20 ft

**Water Levels, Time:** M  
**Depth:**  
**Time:** M  
**Foot:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>210</td>
<td>Ruka</td>
<td></td>
</tr>
<tr>
<td>240</td>
<td>Hard/soft layers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some red ash as</td>
<td></td>
</tr>
<tr>
<td></td>
<td>makes mud look kind</td>
<td></td>
</tr>
<tr>
<td></td>
<td>of brownish red.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** doing lots of milky abrasion bad.

**Signed:** Richard Bourn  
**Date:** 3/13/1978
Drilling Log

Date: 4/13/78  
Job No: 34W-44  
Hole No: # C  
Elevation: 884.6 ft.

Customer: Dept National Resources  
Location: Keei South Kona

Driller: Richard Brown  
10 Hrs.  
Rig: 36L

Helper: Carl Ching  
10 Hrs.  
Gas: Oil

Helper:  
Hrs.  
Repairs

Arv. Job: 7 AM  
Lv. Job: 5 PM  
Hrs.  
Or. No.

Bit-Size: 18"  
Type: Star

Casing-Size: 2 1/2"  
in., Length in hole: 10 ft.  
in., Amt. Perforated:  
ft.  
in.

Depth Start: 695 ft.  
Depth Stop: 720 ft.  
Feet Drilled: 25 ft

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>695</td>
<td>Puka</td>
<td>Hard soft layers</td>
<td>A</td>
</tr>
<tr>
<td>720</td>
<td></td>
<td>Could be thin layers of clinker</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Digging lot of muddy laves about 10 lbs and per day.

Signed: Richard Brown  
Date: 4/13/78  
1978
Date 4/11/19 78  Job No. 594-44  Hole No. 4-5  Elev. 884 ft.
Customer Dept. National Resources  Location Kea South Point
Driller Richard Carson  10 Hrs.  Rig #64
Helper Carl Chrysler  10 Hrs.  Gas Oil
Helper  Hrs.  Repairs

Bit-Size  18"  Type "Slow"
Casing-Size  24 in.  Length in hole 10 ft.  in., Amt. Perforated  20 ft. in.
Depth Start  675 ft.  Depth Stop  695 ft.  Feet Drilled  20 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>675</td>
<td>Gneiss</td>
<td>Some very soft today Has some red ochre in</td>
<td></td>
</tr>
<tr>
<td>695</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Measurements

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

Remarks: Material seems to be laying flat on some drift in line number 1. It again well but looks just good I know excavator can handle any where.

Signed Richard Carson  Date 4/11/19 78
## DRILLING LOG

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

<table>
<thead>
<tr>
<th>Date</th>
<th>4/10 1978</th>
<th>Job No.</th>
<th>SW-44</th>
<th>Hole No.</th>
<th># C</th>
<th>Elevation</th>
<th>884.4 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. National Resources</td>
<td>Location</td>
<td>Kauai South Kona</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>Hours</td>
<td>Rig</td>
<td>36 L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>Hours</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>18”</td>
<td>Type</td>
<td>Alan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>24” in., Length in hole</td>
<td>10 ft. in., Amt. Perforated</td>
<td>ft. in.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>660 ft.</td>
<td>Depth Stop</td>
<td>695 ft.</td>
<td>Feet Drilled</td>
<td>15 ft</td>
<td></td>
<td></td>
</tr>
<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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>660</td>
<td>Puka</td>
<td>Hard &amp; soft layers. Some layers very hard but others very soft.</td>
</tr>
<tr>
<td>635</td>
<td></td>
<td>Achieved very good hole. To build up gauge every few feet.</td>
</tr>
</tbody>
</table>


Signed: Richard Brown  Date  4/10 1978
### DRILLING LOG

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

---

**Date** 4/7/78  
**Job No.** S7H-44  
**Hole No.** H4C  
**Elevation** 824.8 ft.

**Customer** Dept. Natural Resources  
**Location**  Kealakekua, Kona

**Driller** Richard Brown  
**10** Hrs.  
**Rig** 36L

**Helper** Earl Cline  
**10** Hrs.  
**Gas**  
**Oil**

**Arv. Job** 9:AM  
**Lv. Job** 5:PM  
**Hrs.**

---

**Bit-Size** 18"  
**Type** N/A

**Casing-Size** 2 1/4" in., **Length in hole** 66 ft., **Amt. Perforated** 28 ft.

**Depth Start** 63 ft., **Depth Stop** 660 ft., **Feet Drilled** 28 ft.

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

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
</table>
| 63 ft. | Public Hot  
| 660 ft. | Soft Layers |

---

**Remarks:**

---

**Signed** Richard Brown  
**Date** 4/7/78  
**1978**
<table>
<thead>
<tr>
<th>Date</th>
<th>4/6 1978</th>
<th>Customer</th>
<th>National Petroleum</th>
<th>Location</th>
<th>Kea'au South Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>10 Hrs.</td>
<td>Rig 364</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Cheng</td>
<td>16 Hrs.</td>
<td>Gas.</td>
<td>Oil</td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td>Hrs.</td>
<td>Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>18&quot;</td>
<td>Type</td>
<td>Cast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>28&quot;</td>
<td>in.</td>
<td>Length in hole</td>
<td>16 ft.</td>
<td>Amt. Perforated</td>
</tr>
<tr>
<td>Depth Start</td>
<td>636</td>
<td>ft.</td>
<td>Depth Stop</td>
<td>632 ft.</td>
<td>Feet Drilled</td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft. Time M</td>
<td>ft.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<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>636</td>
<td>Blue Clay</td>
<td>Seems to be clean</td>
<td></td>
</tr>
<tr>
<td>632</td>
<td>Very hard</td>
<td>Dept. INFO</td>
<td>Still turning up bit</td>
</tr>
</tbody>
</table>

Remarks: Still turning seem heavier to left instead of bottom. 20 mins. over a lot of hard clay.

Signed: Richard Brown  Date: 4/6 1978
**DRILLING LOG**

**Date:** 4/5/78  
**Job No.:** 8HW-44  
**Hole No.:** 13  
**Elevation:** 884.2 ft.

**Customer:** Dept. National Resources  
**Location:** Keel, South Korea

**Driller:** Richard Bassom  
**Hrs.:** 10  
**Rig:** 762

**Helper:** Earl Ching  
**Hrs.:** 10  
**Gas:** Oil

**Arv. Job:** 7:AM  
**Lv. Job:** 5:PM  
**Hrs.:**  
**Or. No.:**

**Bit-Size:** 18  
**Type:** Stir

**Casing-Size:** 24"  
**Length in hole:** 10 ft.  
**Amt. Perforated:** ft. in.

**Depth Start:** 655 ft.  
**Depth Stop:** 656 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>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>620</td>
<td>Blue Rock</td>
<td>Leaving up bit Can't seem</td>
<td>A</td>
</tr>
<tr>
<td>621</td>
<td>Empty very hard</td>
<td>to flush Chips</td>
<td>B</td>
</tr>
</tbody>
</table>

**Remarks:** Material very heavy having difficulty to try & flush  
Some couldn't help, had to re-build & end.  
Progress very slow.

**Signed:** Richard Bassom  
**Date:** 4/5/78
Date: 4/4  1978  Job No. #84W-44  Hole #0  Elevation 884.2 ft.
Customer: Dept. Hinka  Location: Kaa South Kona

Driller: Dick and Brown  10 Hrs.  Rig: 561
Helper: Earl Chee  10 Hrs.  Gas:  Oil


Bit-Size: 18"  Type:  Type:
Depth Start: 619 ft., Depth Stop: 622 ft., Feet Drilled: 3 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>619</td>
<td>Blue Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>622</td>
<td>Neighbors Haul</td>
<td>Leasing up but bad</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Welding every 30 minutes. Zun S Knee from Map. Dug up 12 ft. driling rabbit holes in hard Rock. Worked 1/2 hour on bottom of bit. Replacing new parts going to have to take off bit. I refuse.

Signed: Richard Brown  Date: 4/4  1978
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

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

---

**Date:** 4/3/78  
**Job No.:** 8HW-44  
**Hole No.:** #A  
**Elevation:** 884.2 ft.

**Customer:** Dept. National Resources  
**Location:** Keiki, South Kona

**Driller:** Richard Bosam  
**10 Hrs. Rig:** 364

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

**Arv. Job:** 7:00 AM  
**Lv. Job:** 5:00 PM

---

**Bit-Size:** 18"  
**Casing-Size:** 12" in., Length in hole: 10 ft.  
**Depth Start:** 615 ft., Depth Stop: 619 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>615</td>
<td>Rika Rate</td>
<td></td>
</tr>
<tr>
<td>616</td>
<td>Hodgesy Lower</td>
<td></td>
</tr>
<tr>
<td>616</td>
<td>Blue Rock</td>
<td>Drilling up bit head.</td>
</tr>
<tr>
<td>619</td>
<td>very very hard</td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:** Had to reduce Complete end of bit welding every 30 minutes. Hole got big on top of blue rock, leveling bit Edges.

---

**Signed:** Richard Bosam  
**Date:** 4/3/78
Date: 3/31/58  
Job No.: 8HW-44  
Hole No.: 4C  
Elevation: 884.2 ft.

Customer: Dept. National Resources  
Location: Keiki South Kona

Driller: Richard Bourn  
10 Hrs.  
Rig: 361

Helper: Carl Chin  
10 Hrs.  
Gas:  
Oil:

Helper:  
Hrs.  
Repairs:

Arv. Job: 7 AM  
Lv. Job: 5 PM  
Hrs.  
Or. No.:

Bit-Size: 18"  
Type: Star

Casing-Size: 24" in.  
Length in hole: 10 ft.  
In., Amt. Perforated:  
ft.  
In.

Depth Start: 594 ft.  
Depth Stop: 615 ft.  
Feet Drilled: 21 ft.

Water Levels, Time:  
Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>594</td>
<td>Puhu soil</td>
<td>Puts five layers of</td>
</tr>
<tr>
<td>615</td>
<td>Soft loam</td>
<td>Every thing in it.</td>
</tr>
</tbody>
</table>

Remarks: Drilling good alignment on line, stays to the same, wedges lot of bit. Hub drilling right to size. Adding bentonite to help lift cuttings. Off better at times.

Signed: Richard Bourn  
Date: 3/31/58
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>569 ft</td>
<td>Puka And 7</td>
<td>Puka And some thinner</td>
<td>7</td>
</tr>
<tr>
<td>594 ft</td>
<td>Soft layers</td>
<td>Layers also some Pilot</td>
<td>4</td>
</tr>
</tbody>
</table>

Remarks: Drilling good, alignment on line staying the same. Rate of pace on bit only on good hole, drilling right to size.

Signed: Richard Bourne Date 3/30 1978
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>554</td>
<td>Puka hard</td>
<td>puka</td>
<td>New rope socket in A.M. Drilling is good.</td>
</tr>
<tr>
<td>569</td>
<td>soft logs</td>
<td>and ash in some.</td>
<td></td>
</tr>
</tbody>
</table>

## DRILLING LOG

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819

TELEPHONE (808) 839-6888 • 833-1444

---

**Date**: 3/28-1978

**Job No.**: SWW-44

**Hole No.**: # C

**Elevation**: 884.2 ft.

**Customer**: Dept. Natural Resources

**Location**: Kea South Korea

**Driller**: Richard Bourn

**10 Hrs.**: Rig

**Helper**: Earl Chung

**10 Hrs.**: Gas

**Helper**

**Rig**

**Gas**

**Oil**

**Repairs**

**Arv. Job**: 7: AM

**Lv. Job**: 5: PM

**Hrs.**: ___________; Or. No. ___________

**Arr. Hrs.**: __________;

**Or. No.**: __________

**Bit-Size**: 18" Type

**Casing-Size**: 24" in., Length in hole __________ ft. __________ in., Amt. Perforated __________ ft. __________ in.

**Depth Start**: 534 ft., Depth Stop 554 ft., Feet Drilled 20 ft.

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

---

### Measurements

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

---

### Depth

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>534</td>
<td>Rulers</td>
<td>Has some Clinton layers</td>
</tr>
<tr>
<td>554</td>
<td>Hard soft layers</td>
<td>of blue rock also. Lots of Alumina.</td>
</tr>
</tbody>
</table>

---

**Remarks**: Drilling good no change in line measured. Changing every afternoon can in this hole have it well, but only 5' of an abrasion in coal.

**Signed**: Richard Bourn

**Date**: 3/28-1978
Date: 3/37  Job No. SAW-44  Hole No. # C  Elevation: 534.2 ft.
Customer: Dept. of Natural Resources  Location: Kee, South Korea

Driller: Richard Bourn  10 Hrs.  Rig: 36 L
Helper: Earl Ching  10 Hrs.  Gas:  Oil


Bit-Size: 18"  Type: Stor
Casing-Size: 24" in., Length in hole: 10 ft. in., Amt. Perforated: 1 ft. in.
Depth Start: 524 ft., Depth Stop: 534 ft., Feet Drilled: 10

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>524</td>
<td>Ruka Hoe # &amp; Hard &amp; soft strike</td>
<td></td>
</tr>
<tr>
<td>534</td>
<td>Soft Layers - some A A layers &amp; also Blue Ads &amp; Chalks</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Let rig repaired at 10:30 AM & get back to drilling. Yard still holding. Same line.pressor on line. Rig runs much better now. Rattle.

Signed: Richard Bourn  Date: 3/37  1978
**DRILLING LOG**

**Date:** 3/24 1978  
**Job No.:** SMTW - 44  
**Hole No.:** #2  
**Elevation:** 884 ft.

**Customer:** Dept. Natural Resources  
**Location:** Kau South Kona

**Driller:** Richard Brown  
**Helper:** Earl Ching  
**Arv. Job:** 9:AM  
**Lv. Job:** 5:PM  
**Or. No.:**

**Rig:** 564  
**Gas:**  
**Oil:**  
**Repairs:**

**Bit-Size:** 18"  
**Casing-Size:** 24" in.  
**Depth Start:**  
**Depth Stop:**  
**Feet Drilled:**

**Water Levels:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Repairs Clutch &amp; Clutch Arms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Done some repair on motor mount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hangers - Checked out crown &amp; done</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some work on 24&quot; bit &amp; also done</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Turn up work on welder, took clock out of crowner &amp; such.</td>
</tr>
</tbody>
</table>

**Remarks:**  
Wont have repair made until Monday or we know welder until then also emergency on Mona Kea Lodge Pump.

**Signed:** Richard Brown  
**Date:** 3/24 1978
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

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

---

**Date:** 3/33 1978  
**Job No.:** 8HW-44  
**Hole No.:** # C  
**Elevation:** 884.2 ft.

**Customer:** Dept. National Resources  
**Location:** Kaei, South Kona

---

**Driller:** Richard Bowman  
10 Hrs.  
Rig 364

**Helper:** Earl Cheing  
10 Hrs.  
Gas

**Helper:**  
Hrs.  
Repairs

**Arv. Job:** 7:00 AM  
**Lv. Job:** 5:00 PM

---

**Bit-Size:** 18"  
**Type:** Stan-

**Casing-Size:** 24" in.  
**Length in hole:** 18 ft.  
**In., Amt. Perforated:** 18 ft. in.

**Depth Start:**  
**Depth Stop:**  
**Feet Drilled:**

---

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

---

**Depth**  
**Formation**  
**Remarks**  
**Top**

---

**Remarks:**

- Repairs on rig Cheing
- Clutches & changing Oil.
- Working on aluminum.

---

**Signed:** Richard Bowman  
**Date:** 3/33 1978
Date: 3/22 1978
Job No. SHW-44
Hole No. 1
Elevation 884.2 ft.

Customer: Dept. Natural Resources
Location: Kei South Korea

Driller: Richard Bourn
10 Hrs.
Rig: 361

Helper: Carl Ching
10 Hrs.

Gas: _______
Oil: _______

Arv. Job: 7:4 AM
Lv. Job: 5:3 PM

Bit-Size: 18"

Casing-Size: 24" in., Length in hole: 10 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>510</td>
<td>Pumice</td>
<td>Cutting setting out</td>
<td></td>
</tr>
<tr>
<td>524</td>
<td>Hard &amp; soft</td>
<td>on bottom using bentonite streaks** in water course on bit</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Fine measurement staking some building 14" drummer to run down to check hole 31 ft. cutting freshly down 2: PM strip out altered took to machine shop for repair ordered bearings.

Signed: Richard Bourn  Date: 3/22 1978
Date 3/21 1978   Job No. S4W-44   Hole No. # C   Elevation 584.2 ft.
Customer Dept. Natural Resources   Location Kei, South Kona

Driller  Richard Bowes  10 Hrs.  Rig 361
Helper  Carl Ching  10 Hrs.  Gas Oil
Helper ______________  Hrs.  Repairs ______________
Arv. Job 4-4.00  Lw. Job 5- P114  Hrs. ______________  Or. No. ______________

Bit-Size  18"  Type  Star
Casing-Size  24" in. Length in hole 10 ft. in., Amt. Perforated _______ ft. _______ in.
Depth Start  491 ft., Depth Stop  510 ft., Feet Drilled  19 ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>/491/</td>
<td>Pulau</td>
</tr>
<tr>
<td>/510/</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>/491/</td>
<td>Hard &amp; soft streaks some AA streaks.</td>
</tr>
</tbody>
</table>

Remarks: Older setting on rig had some to bug had bearing on older keep breaking the down spiling fixed twice today.

Signed  Richard Bowes  Date 3/21 1978
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

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

---

**Date:** 3/20 1978  
**Job No:** SHW-44  
**Hole No:** #C  
**Elevation:** 884.2 ft.

**Customer:** Dept. National Resources  
**Location:** Kaei South Kona

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Bourn</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>361</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Chuing</td>
<td>10 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Arv. Job</td>
<td>7:AM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td>5:PM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size:** 18"  
**Type:** Star

**Helper Hrs. Repairs:**

**Arv. Job:** 7:AM  
**Lv. Job:** 5:PM

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>481</td>
<td>Blue Sand</td>
<td>Laying up bit</td>
</tr>
<tr>
<td>491</td>
<td>any Hard</td>
<td>welding on same area 30 minutes</td>
</tr>
</tbody>
</table>

**Water Levels:**

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

**Remarks:**

Line measurement staying the same either good or line on well didn't show any indication of rubbing the wall on an excessive wear.

**Signed:** Richard Bourn  
**Date:** 3/20 1978
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

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

---

**Date:** 3/17 1978  
**Job No.:** 8HW-44  
**Hole No.:** #1  
**Elevation:** 584.2 ft.

**Driller:** Richard Brown  
**10 Hrs.**  
**Rig:** 364

**Helper:** Earl Cheing  
**10 Hrs.**  
**Gas:**  
**Oil:**  
**Repairs:**

**Arv. Job:** 7:AM  
**Lv. Job:** 5:PM  
**Hrs:**

---

**Bit-Size:** 18”  
**Type:**  
**Star**

**Casing-Size:** 24”  
**Length in hole:** 10 ft.  
**In., Amt. Perforated:**

**Depth Start:** 4250 ft.  
**Depth Stop:** 4842 ft.  
**Feet Drilled:** 12 ft.

---

**Water Levels, Time:**

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>4751</td>
<td>Blue Rock</td>
<td>Lemon Saffron, Ice</td>
<td>A</td>
</tr>
<tr>
<td>4771</td>
<td>Heavy Hard</td>
<td>Bottom</td>
<td>B</td>
</tr>
<tr>
<td>4871</td>
<td>Pulch Rock</td>
<td>Lemon Hard again</td>
<td></td>
</tr>
<tr>
<td>4871</td>
<td>Soft</td>
<td>Ice, Bottom</td>
<td></td>
</tr>
<tr>
<td>4871</td>
<td></td>
<td>Tear, Bellout of Bit</td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:** Just hard & soft, layers can't tell for sure what is gone & some blue rock & chitese but won't make mud even with bentonite.

---

**Signed:** Richard Brown  
**Date:** 3/17 1978
### DRILLING LOG

**Customer:** Dept. Natural Resources  
**Location:** Kauai South Kona

<table>
<thead>
<tr>
<th>Date</th>
<th>3/16 1978</th>
<th>Job No.</th>
<th>EH-144</th>
<th>Hole No.</th>
<th># C</th>
<th>Elevation</th>
<th>884.2 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driller</td>
<td>Richard Bown</td>
<td>10 Hrs.</td>
<td>Rig</td>
<td>961.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>10 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td>7 AM</td>
<td>L. Job</td>
<td>5:30 PM</td>
<td>Or. No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hrs. Repairs</td>
<td>2 Hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>18&quot;</td>
<td>Type</td>
<td>Star</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>24 in.</td>
<td>Length</td>
<td>10 ft.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>472 ft.</td>
<td>Depth Stop</td>
<td>475 ft.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feet Drilled</td>
<td>3 ft.</td>
<td></td>
<td></td>
<td></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>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>472</td>
<td>Blue Rock</td>
<td>Just in front of well</td>
<td></td>
</tr>
<tr>
<td>475</td>
<td>Reawley Ford</td>
<td>Hard layers dont make much good way.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Well in over 75% of time. How to build bit every 30 minutes.

**Signed:** Richard Bown  
**Date:** 3/16 1978
### Drilling Log

**Date:** 3/15 1978  
**Job No.:** 86W-44  
**Hole No.:** C  
**Elevation:** 884.2 ft.

**Customer:** Dept. National Resources  
**Location:** New South, Honolulu

**Driller:** Richard Bourn  
**Helper:** Earl Chung  
**Arv. Job:** 7:AM  
**Lv. Job:** 5:PM

**Bit Size:** 18"  
**Casing Size:** 24" in., Length in hole 10 ft.  
**Depth Start:** 465 ft., Depth Stop:  
**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>465 ft</td>
<td>Blue Rock</td>
<td>Very nice hard sanding</td>
<td></td>
</tr>
<tr>
<td>471 ft</td>
<td></td>
<td>60 min.</td>
<td></td>
</tr>
<tr>
<td>467 ft</td>
<td>Parks or</td>
<td>Deep soft debris</td>
<td></td>
</tr>
<tr>
<td>463 ft</td>
<td></td>
<td>Seen to be hard in bottom</td>
<td></td>
</tr>
<tr>
<td>460 ft</td>
<td>Clarkene</td>
<td>Some medium sand using</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Core of bit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Negative must changing Job steps, Drilled Cant see down but lost sight of water at 600' or this depth.

**Signed:** Richard Bourn  
**Date:** 3/15 1978
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

**Address:** 830 AUHA STREET • HONOLULU, HAWAII 96819  
**Telephone:** (808) 839-6888 • 833-1444

---

**Date:** 3/14 1978  
**Job No.:** 5#111-44  
**Hole No.:** E  
**Elevation:** 984.7 ft.

**Customer:** Dept. National Resources  
**Location:** Kiel South, Kansas

**Driller:** Richard Bourn  
**Hrs.:** 10  
**Rig:** 36-1

**Helper:** Earl Ching  
**Hrs.:** 10  
**Gas:**  
**Oil:**

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

**Arv. Job:** 7 AM  
**Lv. Job:** 5:11M  
**Hrs.:**  
**Or. No.:**

---

**Bit-Size:** 18”  
**Type:** S/H

**Casing-Size:** 34” in.  
**Length in hole:** 16’ ft.  
**In., Amt. Perforated:**  
**ft. in.:**

**Depth Start:** 462’ ft.  
**Depth Stop:** 465’ ft.  
**Feet Drilled:** 3’ 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>462’</td>
<td>Blue Sand</td>
<td>Tool up. bit. bit hurt</td>
<td></td>
</tr>
<tr>
<td>465’</td>
<td>Very hard</td>
<td>on control</td>
<td>build for 30 min.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Changed bit back to</td>
<td>18”</td>
</tr>
</tbody>
</table>

---

**Remarks:** Every few minutes material must be blue Sand bit chipe  
**di hard to have some Halifax or gas material in  
**sand but sure does drill slow.

---

**Signed:** Richard Bourn  
**Date:** 3/14 1978
<table>
<thead>
<tr>
<th>Date</th>
<th>3/13</th>
<th>Job No.</th>
<th>966-44</th>
<th>Hole No.</th>
<th>562</th>
<th>Location</th>
<th>Kauai South Kona</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>10 Hrs.</td>
<td>Rig 362</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>6 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>Arv. Job</td>
<td>7:00 AM</td>
<td>5:00 PM</td>
<td>Hrs.</td>
<td>Or. No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>2 1/4</td>
<td>Type</td>
<td>Star</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>2 1/4</td>
<td>in.</td>
<td>Length in hole</td>
<td>Amt. Perforated</td>
<td>ft.</td>
<td>in.</td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td></td>
<td></td>
<td>ft.</td>
<td>Depth Stop</td>
<td></td>
<td>ft.</td>
<td></td>
</tr>
<tr>
<td>Feet Drilled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ft.</td>
<td></td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft.</td>
<td>Time</td>
<td>M</td>
<td>ft.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

- Can't tell but line looks close to well but lot of screen. Notice new measurement at 15 feet below 3 ft. with 13 ft. of good water. Service it 6 feet to East as right as.

**Signed:** Richard Brown
**Date:** 3/13 1978
Date 3/10/78  
Job No. SH-4-4  
Hole No. 4  
Elevation 884.4 ft.  

Customer  
Kept of natural Resources  
Location Kuli South Time:

Driller Richard Bower 10 Hrs.  
Rig 36  

Helper Earl Chung 10 Hrs.  
Gas Oil  

Helper  
Hrs. Repairs  

Arv. Job 7 AM  
Lv. Job 5:00 PM  
Hrs. Or. No.  

Bit-Size 16" Type Star  

Casing-Size 24" in., Length in hole 10 ft. in., Amt. Perforated 10 ft. in.  

Depth Start 45 ft. Depth Stop 46 ft. Feet Drilled 1 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>45 ft</td>
<td>A A</td>
<td>Lien to house before out of same last 3 feet.</td>
</tr>
<tr>
<td>46 ft</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Can't seem to get hole to make sand and only clean cutting. Can't seem to flush when water hitting pipe. Look like Ham Chase.  
All oil out abnormal since Change can lead the water in hole any more.  

Signed Richard Bower  
Date 3/10/78
**Date** 3/9/1978  
**Job No.** SHW-44  
**Hole No.** # C  
**Elevation** 884.2 ft.  
**Customer** Dept. National Resources  
**Location** Kea, South Korea

**Driller** Richard Bourn  
**Helper** Earl Ching  
**Arv. Job** 7-AM  
**Lr. Job** 5-PM  
**Rig** 36L  
**Gas** Oil  
**Hrs.** 10  
**Reps.**  
**Hrs.** 10  
**Or. No.**  

**Bit-Size** 16"  
**Type** Star  

**Casing-Size** 24"  
**in., Length in hole** 16 ft.  
**in., Amt. Perforated** 8 ft.  
**Depth Start** 448 ft.  
**Depth Stop** 456 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 A</th>
<th>Top B</th>
</tr>
</thead>
<tbody>
<tr>
<td>448/ 457</td>
<td>Ruka</td>
<td>Hard soft layers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>457/ 457</td>
<td>A.A.</td>
<td>Hard layers, but some like holding 8 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raining, hard last 2 days in afternoon.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Raining again, wall or cement. Hard to change, but I broke cone, alley couldn't change and new chain not product.

**Signed** Richard Bourn  
**Date** 3/9/1978
Date: 3/8 1978
Job No: BHW-44
Hole No: # C
Elevation: 884.2 ft.

Customer: Dept. of Natural Resources
Location: Kee, South Kona

Driller: Richard Bourne
10 Hrs.
Rig: 361

Helper: Earl Ching
10 Hrs.
Gas: 
Oil: 

Helper:
-

Arv. Job: 7 AM
Lv. Job: 5 PM

Bit-Size: 16"
Type: Star

Casing-Size: 24"
Length in hole: 16 ft.
Amt. Perforated: ft.
in.

Depth Start: 440 ft.
Depth Stop: 448 ft.
Feet Drilled: 8 ft.

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

--- Measurements ---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>440</td>
<td>Puka</td>
<td>Same very hard streak, about 2 ft thick but seems to go on only half an ft. every 10 minutes Cutting went make mud.</td>
</tr>
<tr>
<td>448</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Drill hole looks more by the day big ledge at 265 ar go deeper the line get water to swell dont seem to be able to hole kind of like a nulup stock.

Signed: Richard Bourne
Date: 3/8 1978
### DRILLING LOG

**Company:** ROUSCOE MOSS

**Date:** 3/4/78

**Job No:** SHW-44

**Hole No:** A

**Elevation:** 884.5 ft.

**Customer:** Dept. of National Resources

**Location:** Kei, South Kona

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hours</th>
<th>Rig No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Barlow</td>
<td>10</td>
<td>361</td>
</tr>
</tbody>
</table>

**Helper:** Earl Chung

**Helper Hours:**

**Arv. Job:** 7:41 AM

**Lvs. Job:** 5:31 PM

**Rig No.:** 361

**Hours:**

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
<th>Star</th>
</tr>
</thead>
<tbody>
<tr>
<td>24&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Casing-Size:** 24" in., Length in hole: ______ ft., Amt. Perforated: ______ ft. ______ in.

**Depth:**

<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>

**Water Levels:**

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

**Remarks:**

- Reaming on kests had one at 260 to 275 high up help make some look bad, line measurement over 3" making hole about 6" off line, but makes water very unstable in bottom.

- Changed tools, took bit to 16" bit in afternoon. Changed design on bit didn't seem to be much good on kests going to try powder next.

**Signed:** Michael Barlow

**Date:** 3/4/78
### Drilling Log

**Date:** 3/6 1978  
**Job No.:** SHW-44  
**Hole No.:** #A  
**Elevation:** 884.2 ft.  
**Location:** Kea'au South Kona

#### Customer and Driller Information

- **Driller:** Richard Brown  
  - **Hours:** 10 Hrs.  
  - **Rig:** 706  

- **Helper:** Earl Ching  
  - **Hours:** 10 Hrs.  
  - **Gas:**  
  - **Oil:**

- **Arv. Job:** 7 AM  
  - **Lv. Job:** 5 PM  
  - **Hrs.:**

#### Drilling Details

- **Bit-Size:** 16"  
- **Casing-Size:** 24" in.  
- **Depth Start:** 495 ft.  
- **Depth Stop:** 770 ft.  
- **Feet Drilled:** 5 ft

#### Water Levels

- **Water Measurement:**
  - **A:**
  - **B:**

#### Depth and Formation

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>495</td>
<td>Puka</td>
<td>Hard &amp; Soft Strokes</td>
</tr>
<tr>
<td>770</td>
<td></td>
<td>Changed bit to 24&quot; &amp; worked on Kutsa end. Water shut off.</td>
</tr>
</tbody>
</table>

#### Remarks

- **Alignement Holding OK at 14° & 12°. Line looks like going close to wall as go deeper. Water in hole almost out of sight. Hole done crooked, but doing my best.**

**Signed:** Richard Brown  
**Date:** 3/6 1978

---

**Note:** The table and remarks are filled out with specific details regarding the drilling operation, including depth, formation, remarks, and other relevant data.
Date: 3/3 1978  
Job No.: SHW-44  
Hole No.: #C  
Elevation: 884.2 ft.  

Customer: Dept. Natural Resources  
Location: Kee South Kona  

Driller: Richard Bourea  
10 Hrs.  
Rig: 361  

Helper: Earl Ching  
10 Hrs.  
Gas:  
Oil:  

Hrs:  
Repairs:  
Or. No.:  

Bit-Size: 18"  
Type:  
Stov:  

Casing-Size: 24" in., Length in hole: 10 ft.  
Amt. Perforated:  

Depth Start: 429 ft., Depth Stop: 435 ft., Feet Drilled: 12 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>429</td>
<td>Puka</td>
<td>Had to do some seams</td>
</tr>
<tr>
<td>435</td>
<td>Hard &amp; soft layers, more spent but OK now.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Done some seams on hard layers, if using steel up hole, to try & improve looks of hole. Still looks like well, but think will pass. 34" Variation in line, top to bottom. 16" bit.  

Signed: Richard Bourea  
Date: 3/3 1978
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

650 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-5858 • 533-1444

---

**Date:** 3/8 1978  
**Job No.:** S/H - 44  
**Hole No.:** #1  
**Elevation:** 884.2 ft.

**Customer:** Dept. Natural Resources  
**Location:** Kea'au South Kona

**Driller:** Richard Bourn  
10 Hrs.  
Rig 36L

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

**Arv. Job:** 7 AM  
**Lv. Job:** 5 PM  
**Hrs.:** Or. No.

**Bit-Size:** 18"  
**Type:** Star

**Casing-Size:** 24" in., Length in hole: 10 ft.  
**Type:** in., Amt. Perforated: ft. in.

**Depth Start:** 40.9 ft.  
**Depth Stop:** 423 ft.  
**Feet Drilled:** 14 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>40.9</td>
<td>Puka</td>
<td></td>
</tr>
<tr>
<td>423</td>
<td>Hard soft layers</td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:** Achieving Latest the same must be doing all hole should up not see down. Achievement staying same hole looks like an eye as from whipstock up high.

**Signed:** Richard Bourn  
**Date:** 3/8 1978
<table>
<thead>
<tr>
<th>Date</th>
<th>3/1 1978</th>
<th>Job No.</th>
<th>8HW-44</th>
<th>Hole No.</th>
<th>4C</th>
<th>Elevation</th>
<th>884.2 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. National Resources</td>
<td>Location</td>
<td>Kiwi South Korea</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Bourn</td>
<td>10 Hrs.</td>
<td>Rig 86L</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Chung</td>
<td>10 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>Arv. Job</td>
<td>7AM</td>
<td>Lv. Job</td>
<td>5 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>18&quot;</td>
<td>Type</td>
<td>star</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>24&quot; in.</td>
<td>Length in hole</td>
<td>10 ft. in.</td>
<td>Amt. Perforated</td>
<td>ft. in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>394 ft.</td>
<td>Depth Stop</td>
<td>409 ft.</td>
<td>Feet Drilled</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft.</td>
<td>Time</td>
<td>M</td>
<td>ft.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<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>394</td>
<td>Rocks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>409</td>
<td>Hard &amp; Soft Layers</td>
<td>Had one layer of about 2 ft hard material</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Count ground drilling as if it goes off in hard layers, tried bit up some hard layer.

Signed: Richard Bourn  Date: 3/1 1978
### DRILLING LOG

**Date:** 2/28/78  
**Job No.:** 8661-44  
**Hole No.:** #C  
**Elevation:** 984.2 ft.

**Customer:** Dept National Resources  
**Location:** Kei South Kona

**Driller:** Richard Bourn  
**Hrs.:** 10  
**Rig:** 36

**Helper:** Paul Chung  
**Hrs.:** 10  
**Gas:** Oil

**Arv. Job:** 7 AM  
**Lv. Job:** 5 PM

---

**Bit-Size:** 18"  
**Type:** Stan

**Casing-Size:** 2 ½" in.  
**Length in hole:** 10 ft.  
**Amt. Perforated:** 4 ft.  
**Depth Start:** 380 ft.  
**Depth Stop:** 394 ft.  
**Feet Drilled:** 14 ft

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

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>380</td>
<td>Ruka</td>
<td>Some hard layers</td>
</tr>
<tr>
<td>394</td>
<td>Hard/soft strata are thicker than others</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Melly a foot thick but all same material.</td>
<td></td>
</tr>
</tbody>
</table>

---

**Measurements**

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

**Remarks:** Alluvients staying same. Can't hold water.  
Job. Hard to pick up cuttings with boles.

**Signed:** Richard Bourn  
**Date:** 2/28/78
Date: 2/27/78
Job No.: SHW-44
Hole No.: # C
Location: Kekii South, Kona
Elevation: 884.1 ft.

Customer: Dept. National Resources

Driller: Richard Bourn 10 Hrs. Rig #: 366
Helper: Carl Chung 10 Hrs. Gas: Oil

Bit-Size: 18" Type: Stav
Casing-Size: 84" in., Length in hole: 10 ft. in., Amt. Perforated: ft. in.
Depth Start: 368 ft., Depth Stop: 380 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>368</td>
<td>Puka</td>
<td></td>
</tr>
<tr>
<td>380</td>
<td>Hard &amp; soft strata -</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: No change in line measurement holding at 12 ft. 14 ft. spacing side seems to be going OK.

Signed: Richard Bourn  Date: 2/27/78  1978
**DRILLING LOG**

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

<table>
<thead>
<tr>
<th>Date</th>
<th>Feb 24 1978</th>
<th>Job No.</th>
<th>8111-44</th>
<th>Hole No.</th>
<th>2/C</th>
<th>Elevation</th>
<th>884.2 ft.</th>
</tr>
</thead>
</table>

**Customer:** Dept National Resources  
**Location:** Kea South Kona

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Bourne</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>36 L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Chang</td>
<td>10 Hrs.</td>
<td>Gas</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oil</td>
<td></td>
</tr>
</tbody>
</table>

**Arv. Job:** 7 AM  
**Lv. Job:** 5 PM

<table>
<thead>
<tr>
<th>Measuremenb</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>24 in., Length in hole</th>
<th>10 ft. in., Amt. Perforated</th>
<th>ft. 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>354 ft.</td>
<td>368 ft.</td>
<td>14 ft.</td>
</tr>
</tbody>
</table>

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

**Drilled:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>354</td>
<td>Blue Rock</td>
<td>Change in bit design</td>
<td></td>
</tr>
<tr>
<td>357</td>
<td>Very hard</td>
<td>Help considerable</td>
<td></td>
</tr>
<tr>
<td>361</td>
<td>Sand</td>
<td>Hole losing water used</td>
<td></td>
</tr>
<tr>
<td>362</td>
<td>Soft</td>
<td>Instantly</td>
<td></td>
</tr>
<tr>
<td>364</td>
<td>AR or gaging</td>
<td>Looks like Blue Rock</td>
<td></td>
</tr>
<tr>
<td>368</td>
<td>Rock in Blue Rock</td>
<td>Does seem to drill some</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Faster breaks off in chips</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Don't know for sure what formation is only that it drill slow & works on bit. But still welding on but every 20 or 30 minutes hole collapse. Don't seem to want to lift seems lot shot some with powder.

**Signed:** Richard Bourne  
**Date:** Feb 24 1978
**Date:** Feb 23, 1978  
**Job No.:** SHW-44  
**Hole No.:** # C  
**Elevation:** 884.2 ft.  
**Customer:** Dept. National Resources  
**Location:** Kea South Kona

**Driller:** Richard Brown  
**10 Hrs.**  
**Rig:** 364

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

**Arv. Job:** 7 AM  
**Lv. Job:** 5 PM  
**Hrs.**

**Bit Size:** 18"  
**Type:** Star  
**Casing Size:** 24" in.  
**Length in hole:** 10 ft.  
**Amt. Perforated:** 4 ft.  
**Depth Start:** 350 ft.  
**Depth Stop:** 354 ft.  
**Feet Drilled:** 4 ft.

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>350</td>
<td>Blue Rock</td>
<td>Leaving bit up about very very hard every 20 minutes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>354</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**  
Spending most of time welding on toole changed points on bit.  
Helped some but not much could be 35 ft. Blue Rock but can't tell to much.  
Cuttings are so fine hole won't mix cutting very well.

**Signed:** Richard Brown  
**Date:** Feb 23, 1978
Date: Feb 23 1978  Job No. 8HW-44  Hole No. SC  Elevation 854.4 ft.

Customer:  Dept. of Natural Resources  Location: Keei South Kona

Driller: Richard Brown  10 Hrs.  Rig 364
Helper: Earl Oliphant  10 Hrs.  Gas  Oil

Drwel  Hrs.  Repairs
Arv. Job 7 AM  Lv. Job 5 PM  Hrs.

Bit-Size  18"  Type: Stan
Casing-Size  24" in.  Length in hole 10 ft.  in., Amt. Perforated  ft.  in.
Depth Start  347 ft.  Depth Stop  350 ft.  Feet Drilled  3 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>347</td>
<td>Blue Rock</td>
<td>Leaving up bent bed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hard to thread bottoms of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change points to Holes</td>
</tr>
</tbody>
</table>

Remarks: Spent most of time working on bit, don't seem to go broken but time is hard. Would be some what labour after changing bit.

Signed: Richard Brown  Date: Feb 23 1978
Date: Feb 21 1978  Job No: SHW-44  Hole No: C  Elevation: 834.4 ft.

Customer: Dept. National Resources  Location: Keehi South, Kona

Driller: Richard Bourn  10 Hrs.  Rig: 364
Helper: Earl Ching  10 Hrs.  Gas: Oil
Arv. Job: 7 AM  Lv. Job: 5 PM  Or. No.:

Bit-Size: 18"  Type: Star
Depth: Start: 344 ft.; Depth Stop: 344 ft.; Feet Drilled: 5 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>344</td>
<td>Rulka</td>
<td>Hard soft streaks</td>
<td></td>
</tr>
<tr>
<td>344</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>344</td>
<td>Blue Rock</td>
<td>Very very hard rock</td>
<td></td>
</tr>
<tr>
<td>344</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Horse to weld on bit every 20 minutes or two points off also shuttle Bar spend most of time welding up bit.

Signed: Richard Bourn  Date: Feb 21 1978.
Date: Feb 20 1978  
Job No. 844-44  
Hole No. 5  
Elevation: 854.2 ft.

Customer: Dept. National Resources  
Location: Kaa; South Korea

Driller: Richard Brown  
Rig: 366  
Hrs: 10

Helper: Earl Ching  
Gas:  
Oil:  
Law:  
Hrs: 10

Arv. Job: 7 AM  
Lv. Job: 9 PM  
Hrs:  
Or. No.:  

Bit-Size: 18"  
Type: Star  

Casing-Size: 24" in.  
Length in hole: 10 ft.  
Amt. Perforated:  
in.

Depth Start: 330 ft.  
Depth Stop: 342 ft.  
Feet Drilled: 12 ft.

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>330</td>
<td>Mud</td>
<td>Hard &amp; Soft streaks</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Count crowd drilling as if do your own off some in hard layers. Have to hold light mangan on hole so am not crowding it any.

Signed: Richard Brown  
Date: Feb 20 1978
**DRILLING LOG**

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

---

**Date:** Feb 17, 1978  
**Job No.:** SHW 44  
**Hole No.:** 7  
**Elevation:** 834.7 ft.

**Customer:** Dept National Foremost  
**Location:** Kailua South Kona

---

**Driller:** Richard Brown  
**Hrs.:** 10 Hrs.  
**Rig:** 366

**Helper:** Earl Curry  
**Hrs.:** 10 Hrs.  
**Gas:**  
**Oil:**

---

**Arv. Job:** 9 AM  
**Lv. Job:** 5 PM  
**Hrs.:**

---

**Bit-Size:** 18"  
**Type:** Stav

**Casing-Size:** 24" in.  
**Length in hole:** 16 ft.  
**In.:** 316 ft.  
**Amt. Perforated:** ft. in.

**Depth Start:** 311 ft.  
**Depth Stop:** 336 ft.  
**Feet Drilled:** 25 ft.

---

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

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>311</td>
<td>Blue Rock</td>
<td>Very hard bone up</td>
</tr>
<tr>
<td>312</td>
<td>On Resin</td>
<td>bit.</td>
</tr>
<tr>
<td>312</td>
<td>puka</td>
<td>Hard &amp; soft strake but thin.</td>
</tr>
<tr>
<td>336</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:** Drilling good now have some thin Hard bone  
Seemed to be going straight for a change.  
**Signed:** Richard Brown  
**Date:** Feb 17 - 1978
Date: Feb-16 1978  Job No. 316-44  Hole No. C  Elevation 384.2 ft.
Customer: Dept National Resources  Location: Kau, South Kau

Driller: Michael Brown  10 Hrs.  Rig 361
Helper: Earl Cheung  10 Hrs.  Gas Oil
Helper: Hrs.  Repairs

Bit-Size: 24"  Type: Star
Casing-Size: 24" in., Length in hole 10 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>27</td>
<td>Cleaned, Hole cut to bottom edge about 4 ft. long. Hole cleared, hole took 2 1/2 Auger rods to clean out hole. Some clay bail stuck in bottom.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Blk Rock</td>
<td>Bell</td>
<td>Very Hard</td>
</tr>
</tbody>
</table>

Remarks: Changed bit to 18".  Plugged up some.  Exchanged pipe in hole at 135 & 150, All for plugged pipe good. Cleaned for 1 1/2 more rods.  They had in bottom may shoot again mid AM.

Signed ____________________________ Date ____________________________
**Date:** Feb 15, 1978  
**Job No.:** 844  
**Hole No.:** #4  
**Elevation:** 884.2 ft.

**Customer:** Dept National Insurance  
**Location:** Hawaii South Kona

**Driller:** Richard Brown  
10 Hrs.  
**Rig:** 361

**Helper:** Carl Chun  
10 Hrs.  
**Gas:**  
**Oil:**

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

**Arr. Job:** 7 AM  
**Lv. Job:** 5 PM  
**Hrs.:**

**Bit-Size:** 24"  
**Type:** Star

**Casing-Size:** 24"  
**in., Length in hole:** 10 ft.  
**in., Amt. Perforated:**

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

**Water Levels, Time:** M ft.  
**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>Powder man arrived early set up charge on bottom ledge. I shot some. Cleared hole down to solid bottom got about 6 ft. field. Sent charge and sent again at about 8 ft off bottom strong powder out. A green with water got shot out. Left Dillon, sent charge. Didn't even bring water and tip of pipe.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Measurements**

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

**Remarks:** Drilling on field down to bottom won't get all Cloudburst today. Can't check hole to see what measurement bottom is by 2".

**Signed:** Richard Brown  
**Date:** Feb 15, 1978
Date: Feb 14, 1978  Job No. 8261 44  Hole No. 2  Elevation 484.2 ft.
Customer: Dept. National Resources  Location: Kaula South Kona

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Bourne</th>
<th>10 Hrs.</th>
<th>Rig 56L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Carl Chung</td>
<td>10 Hrs.</td>
<td>Gas</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td></td>
<td>Oil</td>
</tr>
<tr>
<td>Av. Job</td>
<td>7 AM</td>
<td></td>
<td>Or. No.</td>
</tr>
<tr>
<td>Lv. Job</td>
<td>5 PM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>24&quot;</th>
<th>Type</th>
<th>Star</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casing-Size</td>
<td>24&quot; in.</td>
<td>Length</td>
<td>10 ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in.</td>
<td>in.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amt.</td>
<td>Perforated 10 ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in.</td>
<td>in.</td>
</tr>
<tr>
<td>Depth Start</td>
<td></td>
<td>ft.</td>
<td>24 ft.</td>
</tr>
<tr>
<td>Depth Stop</td>
<td></td>
<td>ft.</td>
<td></td>
</tr>
<tr>
<td>Feet Drilled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td></td>
<td>M</td>
<td>ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ft.</td>
<td></td>
</tr>
</tbody>
</table>

Measurements

<table>
<thead>
<tr>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks</td>
</tr>
<tr>
<td>Placing to 24&quot;</td>
</tr>
</tbody>
</table>

Remarks: Working on ledge in Kaula but cannot seem to do much good these ledges out of 24" bit very hard ledge.

Signed: Richard Bourne  Date: Feb 14, 1978
**Drilling Log**

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819

Telephone (808) 839-6688 • 833-1444

---

**Date:** Feb 13, 1978  
**Job No.:** SHui-44  
**Hole No.:** 4  
**Elevation:** 884.2 ft.

**Customer:** Dept National Resources  
**Location:** Keew South Kona

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

**Helper:** Earl Cluing  
**10 Hrs.**  
**Gas:**

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

**Arv. Job:** 7 AM  
**Lv. Job:** 5 PM

---

**Bit-Size:** 24"  
**Type:** Stan

**Casing-Size:** 24 in., Length in hole 16 ft.  
**in., Amt. perforated:** 10 ft.  
**in.**

**Depth Start:** 30 ft.  
**Depth Stop:** 309 ft.  
**Feet Drilled:** 775

**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>Coming with 24&quot; Bit on edges.</td>
</tr>
</tbody>
</table>

**Measurements**

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

**Remarks:**

Made Arrangement to short Job. Used one Power Man from Hilo Coming to do Same. Bringing Brawler, couple 4 Pads.

**Signed:** Richard Brown  
**Date:** Feb 13, 1978
**Date:** Feb. 10 1978  
**Job No.:** RHW-4V  
**Hole No.:** # C  
**Elevation:** 884.6 ft.

**Customer:** Dept. Natl. Resources  
**Location:** Kei, South Korea

**Driller:** Richard Bourn  
**Helper:** Earl Ching  
**Helper:**

- **Arv. Job:** 7:44 AM  
- **Lv. Job:** 5:17 PM

**Rig:** 36L

**Gas:**  
**Oil:**

**Repairs:**

---

**Bit-Size:** 18"  
**Type:** M.H.

**Casing-Size:** 24" in., Length in hole 10 ft. in., Amt. Perforated ft. in.

**Depth Start:** 305 ft., Depth Stop: 309 ft., Feet Drilled: 4 ft

**Water Levels, Time:** M ft., 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>Working on hole with 18&quot; bit while drilling up 24&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Work doesn't slow but seems to be best so far</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Remarks:** Slot 24" built up again but didn’t get to use any due to most of day spent rebuilding; still using same hang on battery; left site correct; others will pass at 12:13p. Best I can do so far would like to try powder in bottom.

**Signed:** Richard Bourn  
**Date:** Feb. 10 1978
<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>Driller</th>
<th>Helper</th>
<th>Helper Type</th>
<th>Arv. Job</th>
<th>Or. No.</th>
<th>Bit-Size</th>
<th>Casing-Size</th>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
<th>Water Levels</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb. 9, 1978</td>
<td>B/W-44</td>
<td>#5</td>
<td>884.7 ft.</td>
<td>Richard Bourn</td>
<td>Earl Ching</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
<td>24 in.</td>
<td>296</td>
<td>305</td>
<td>90</td>
<td></td>
<td></td>
</tr>
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</table>

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formaion</th>
<th>Remarks</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

**Remarks:**

Still spudging with churn. Can't have any churn much to hold on wall. Put on 18" to clear out at 20 ft. Counted drift any more. Still may have to cement will drill to hold on shoot hole with dynamite.

Signed: Richard Bourn, Date: Feb. 9, 1978
**Date:** Feb. 8 1978  
**Job No.** SW-44  
**Hole No.** #  
**Elevation:** 884.2 ft.

**Customer:** Dept. Natural Resources  
**Location:** Kei, South Kona

**Driller:** Richard Bourn  
10 Hrs.  
**Rig:** 361

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

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

**Arv. Job:** 7:40 AM  
**Lv. Job:** 5:00 PM  
**Hrs.:**  
**Or. No.:**

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>24”</th>
<th>Type</th>
<th>Star</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casing-Size</td>
<td>24” in.</td>
<td>Length in hole</td>
<td>10 ft.</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>Ft. in.</td>
<td>Amt. Perforated</td>
</tr>
<tr>
<td>Depth Start</td>
<td>292 ft.</td>
<td>Depth Stop</td>
<td>296 ft.</td>
</tr>
<tr>
<td>Feet Drilled</td>
<td>4 ft.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Cleaning to 24”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fishing heavy with dills but still</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>some sand drift but can pass at</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/2 4/12 on line measurement.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
- The bit up. Gob. Run new rope, suspect 7  
- Changed slings in judicial fashion. Had to take off 24” but to repair or to bad to do so  
- Hanging up. Wiped lange Clear off.

**Signed:** Richard Bourn  
**Date:** Feb. 8 1978
Date: Feb 7, 1978
Job No: SW-44
Hole No: 2
Elevation: 884.2 ft.

Customer: Dept National Resources
Location: Kee, South Korea

Driller: Richard Bourn 10 Hrs.  Rig 564
Helper: Earl Ching 10 Hrs. Gas
Helper: Hrs. Repairs

Arv. Job 9 AM Lv. Job 5 PM

Bit-Size 24" Type Star
Casing-Size 24" in., Length in hole 10 ft. in., Amt. Perforated ft. in.
Depth Start 288 ft., Depth Stop 392 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>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Passing to 24</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Controlling draft as best as can do</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Note any wall of one side only paid better</em></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

**Signed:** Richard Bourn
**Date:** Feb 7, 1978
## DRILLING LOG

**Date:** Feb-6 1978  
**Job No.:** SWW-44  
**Hole No.:** C  
**Elevation:** 887.2 ft.

**Customer:** Dept National Resources  
**Location:** Keia South Kona

**Driller:** Richard Brown  
**Hrs.:** 10  
**Rig:** 364

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

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

### 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>
<td>Reaming to 24&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Remarks:** Working on ledge cant go fast or will loose some mud stopping will have to come back again to center land once more to add more mud to well after.

**Signed:** Richard Brown  
**Date:** Feb-6 1978
Date: Feb 7, 1978  Job No. 8HW-44  Hole No. 4  Elevation 884 ft.
Customer: Dept. National Resources  Location: Keei, South Kona

Driller: Richard Bourn  10 Hrs.  Rig:  
Helper: Earl Ching  10 Hrs.  Gas:  Oil:  
Helper:  
Arv. Job: 7 AM  Lv. Job: 5 PM  Hrs.  Repairs: 

Bit-Size: 24"  Type:  Star
Casing-Size: 24" in., Length in hole: 10 ft.  in., Amt. Perf: 10 ft.  in.

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

Remarks: Progress slower on this area, is where God drift.

Signed: Richard Bourn  Date: Feb 7, 1978
Date: Feb-2 1978  
Job No: HW-44  
Hole No: # C  
Elevation: 884.8 ft.  
Customer: Dept. National Resources  
Location: Kaeo, South Kona  

Driller: Richard Brown  
Hours: 10  
Rig: 361  

Helper: Earl Cling  
Hours: 10  
Gas:  
Oil:  

Arv. Job: 7 AM  
Lv. Job: 5 PM  

Bit-Size: 24”  
Type: Star  

Casing-Size: 12” in., Length in hole: 10 ft.  
Amt. Perforated: ft. in.  


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

Depth | Formation | Remarks | Top | A | B |
---|---|---|---|---|---|
| | Cleaning to 24” | | | | |

Remarks: Just new rig goes. Carl went to pick up drill bits.  
Half comfortably well. Go very slow through hard layers.  
Start deep. Cut off well good. Keep hole full of  
then to control drift. Slow progress.  

Signed: Richard Brown  
Date: Feb-2 1978
Date: Jan-1 1978  
Job No. 54W-44  
Hole No. 2  
Elevation: 854.2 ft.

Customer: Dept. National Resource  
Location: Kei South Korea

Driller: Richard Brown  
10 Hrs.  
Rig: 361

Helper: Carl Ching  
10 Hrs.

Arv. Job 7 AM  
Lv. Job 5 PM  
Hrs.

Bit-Size: 24"  
Type:  

Casing-Size: 24" in., Length in hole: 10 ft.  
Amt. Perforated: ___ ft. ___ in.

Depth Start: 240 ft.  
Depth Stop: 255 ft.  
Feet Drilled: 15

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>Cleaning to 24&quot;</td>
</tr>
</tbody>
</table>

Remarks: But ford truck back together, padding with styrofoam. Goes good except in hard layered holes, slow down to chop off walls.

Signed: Richard Brown  
Date: Jan-1 1978
# DRILLING LOG

RUSCOE MOSS COMPANY

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 836-6888 • 833-1444

---

**Date:** Jan 31 1978  
**Job No.:** HW-44  
**Hole No.:** #1  
**Elevation:** 887.3 ft.

**Customer:** Dept National Resources  
**Location:** Keiki South Kona

<table>
<thead>
<tr>
<th>Driller</th>
<th>Helper</th>
<th>10 Hrs.</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>Gas</th>
<th>Oil</th>
<th>Repairs</th>
<th>Or. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Bourn</td>
<td>Earl Ching</td>
<td></td>
<td></td>
<td>366</td>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Arv. Job</th>
<th>Lv. Job</th>
<th>7 AM</th>
<th>5 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hrs.</td>
<td>Hrs.</td>
<td></td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
<th>Stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>24&quot;</td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>Length in hole</th>
<th>Amt. Perforated</th>
</tr>
</thead>
<tbody>
<tr>
<td>24&quot; in.</td>
<td>10 ft.</td>
<td>ft.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
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</thead>
<tbody>
<tr>
<td>216 ft.</td>
<td>240 ft.</td>
<td>8</td>
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<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft.</th>
<th>Time</th>
<th>M</th>
<th>ft.</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cleaning 24&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:**  
"Clean new rope socket & keep padding hole with dyneema line. Show out bearing out of white Ford truck. Need to order one front door to put back in Wednesday."

**Signed:** Richard Bourn  
**Date:** Jan 31 1978
Date: Jan 30 1978  Job No: S1W-44  Hole No: # C  Elevation 884.2 ft.
Customer: Dept National Resources  Location: Kekai South Kona
Driller: Richard Bourn  10 Hrs.  Rig: 361
Helper: Earl Ching  10 Hrs.  Gas: Oil

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>24&quot;</th>
<th>Type</th>
<th>Star</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Levels, Time</td>
<td>M ft.</td>
<td>Time M ft.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
Left Bridge in & Drilled with Iron & Cable.  Started taking out drift also to start to cut ledge. When got into loose material.

Signed: Richard Bourn  Date: Jan 30 1978
### Drilling Log

**Date**: Jan 27, 1973  
**Job No.**: BH 44  
**Hole No.**: 3  
**Elevation**: 884 ft.

**Customer**: Dept. of Natural Resources  
**Location**: Kealakekua, South Kona

**Driller**: Richard Brown  
**Rig**: 36L

**Helper**: Earl Ching  
**Gas**:  
**Oil**:  
**Repairs**:  

**Arv. Job**: 7 AM  
**Lv. Job**: 5 PM  
**Hrs.**:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driller</td>
<td>10</td>
</tr>
<tr>
<td>Helper</td>
<td>10</td>
</tr>
<tr>
<td>Av. Job</td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size**: 24"  
**Type**: Star

**Casing-Size**: 24" in.  
**Length in hole**: 100 ft.  
**Amt. Perforated**: ft. in.

**Depth Start**: 174 ft.  
**Depth Stop**: 226 ft.  
**Feet Drilled**: 56 ft.

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cleaning</td>
<td>24&quot;</td>
<td></td>
</tr>
</tbody>
</table>

**Measurements**

**Remarks**: Had some hard layers but done OK. Hole bridged off again but going to leave bridge & drill out with 24" bit to cut more off wall.

**Signed**: Richard Brown  
**Date**: Jan 27, 1973
**DRILLING LOG**

**RUSCOW MOSS COMPANY**

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

---

**Date** Jan-26 1978 **Job No.** AHW-44 **Hole No.** # C **Elevation** 384.2 ft.

**Customer** Dept. National Resources **Location** Kei South Tuna

---

**Driller** Richard Bourn 10 Hrs. **Rig** 366

**Helper** Earl Long 10 Hrs. **Gas** Oil

**Helper** 10 Hrs. **Oil** Repairs

**Arv. Job** 7 AM **Lv. Job** 5 PM

---

**Bit-Size** 24" **Type** Star

**Casing-Size** 24" in., Length in hole 10 ft. **in.** Amt. Perforated 174 ft. **in.**

**Depth Start** 114 ft. **Depth Stop** 174 ft. **Feet Drilled** 60 ft

**Water Levels, Time**

---

**Formation** **Remarks**

---

**Depth**

---

**Remark:** Cleaning Hole to 24" on

---

**Remarks:**

---

**Signed** Richard Bourn **Date** Jan-26 1978
Date: Jan 25 1978  
Job No.: 874L.44  
Hole No.: # 1  
Elevation: 884.2 ft.

Customer: Dept. National Resources  
Location: Kea'au South Kona

Driller: Richard Bourn  
10 Hrs.  
Rig: 364

Helper: Earl Ching  
10 Hrs.  
Gas: Oil

Helper:  
Hrs.  
Repairs:

Arv. Job: 7 AM  
Lv. Job: 5 PM  
Hrs.  
Or. No.:

Bit Size: 24"  
Type: Stem

Casing Size: 24" in., Length in hole: 10 ft.  
Amt. Perforated: 10 ft. in.

Depth Start: 164 ft.  
Depth Stop: 174 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></td>
<td></td>
<td>Reasoning Hole to 24&quot;</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:  
Hard layers, leaves up. Cutting edges bad.  
Repairing but every hour. Grip holding. Ok now. Threw out rearing out of white and truck.  
Going to repair next week.

Signed: Richard Bourn  
Date: Jan 25 1978
## DRILLING LOG

**Company:** ROUSCOE MOSS COMPANY

**Address:** 830 AHU STREET • HONOLULU, HAWAII 96819
**Telephone:** (808) 833-6888 • 833-1444

**Date:** Jan 24, 1978  
**Job No.:** 8HW-44  
**Hole No.:** #1  
**Elevation:** 884.2 ft.

**Customer:** Dept. National Resources  
**Location:** Near South Kona

**Driller:** Richard Bourn  
**Arv. Job:** 7 AM  
**Lv. Job:** 5 PM

**-helper:**  
**Rig:** 36L

**Helper:** Carl Ching  
**Hrs.:** 10

**Gas:**  
**Oil:**

**Hrs. Repairs:**

**Or. No.:**

**Bit-Size:** 24"  
**Type:** Star

**Casing-Size:** 24" in., Length in hole 10 ft.  
**Amt. Perforated:** ft. in.

**Depth Start:** 10' 4" ft.  
**Depth Stop:** 10' 4" ft.  
**Feet Drilled:** 0

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

### Depth

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Planning</td>
<td>Hole to 24&quot;</td>
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</tbody>
</table>

### Measurements

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

**Remarks:** Spent all day working on bit put all new lugs on out of welding and I reinforced some. Also going to use double hole quill to stabilize tool.

**Signed:** Richard Bourn  
**Date:** Jan 24, 1978
**DRILLING LOG**

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

<table>
<thead>
<tr>
<th>Date</th>
<th>Jan 23 1978</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>8HW-44</td>
</tr>
<tr>
<td>Hole No. #</td>
<td>0</td>
</tr>
<tr>
<td>Elevation</td>
<td>884.2 ft.</td>
</tr>
<tr>
<td>Customer</td>
<td>Dept. National Resource</td>
</tr>
<tr>
<td>Location</td>
<td>Koei South Korea</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Bourn 10 Hrs. Rig 364</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl cling 10 Hrs. Gas  Oil</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td>7 AM  Lv. Job 5 PM</td>
</tr>
</tbody>
</table>

**Bit-Size**

- 24" Type Star

**Casing-Size**


**Depth Start**

- 84 ft., Depth Stop 104 ft., Feet Drilled 20 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></td>
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</tr>
</tbody>
</table>

Remarks:

For B&up Again Cut Held Slugs on Going To Have To Stop Bit Back To Original Hole & Start All Men Build Bit 2 Times Today. Ann. Top Socket in A.M.

Signed: Richard Bourn

Date: Jan 23 1978
**DRILLING LOG**

**Company**
RUSCOE MOSS COMPANY

**Address**
830 Ahua Street, Honolulu, Hawaii 96819

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

---

**Date:** Jan 21, 1978  
**Job No.:** SMA-44  
**Hole No.:** # 4  
**Elevation:** 844 ft.

**Customer:** Dept. National Resources  
**Location:** Kauai, South Kauai

---

**Driller:** Richard Brown  
**Hrs.:** 10  
**Rig:** 361

**Helper:** Carl Cing  
**Hrs.:** 10  
**Gas:** Oil

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

**Arv. Job:** 7 AM  
**Lv. Job:** 5:1 PM  
**Hrs.:**  
**Or. No.:**

---

**Bit-Size:** 5/4"  
**Type:** Steel

**Casing-Size:** 2 1/2" in., Length in hole: 10 ft.  
**in., Amt. Perforated:** ft. in.

**Depth Start:** 52 ft.  
**Depth Stop:** 84 ft.  
**Feet Drilled:** 32 ft.

**Water Levels, Time**  
**M 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></td>
<td>Planning Hole to 24&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Hole gets big on top of hard layers can't seem to bring down size.Going but almost as slow as drilling.

---

**Signed:** Richard Brown  
**Date:** Jan 21, 1978
### Drilling Log

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819

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

---

**Date**: Jan 20, 1978
**Job No.**: 8HW-44
**Hole No.**: #6
**Elevation**: 324.2 ft.

**Customer**: Dept. Natural Resources
**Location**: Ke'e South Kauai

**Driller**: Richard Brown 10 Hrs.  Rig 36L
**Helper**: Carl Olting 10 Hrs. Gas  Oil
**Helper**:  Hrs. Repairs

**Arv. Job**: 7AM  **Lv. Job**: 8PM

**Bit-Size**: 24"  **Type**: Steel

**Casing-Size**: 24" in., Length in hole: 10 ft. in., Amt. Perforated: 12 ft. in.

**Depth Start**: 70 ft., Depth Stop: 52 ft., Feet Drilled: 12 ft.

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

---

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

"Casing" Hole to 24"

---

Remarks: Had pedestal bearing problems, had to remove & change pins & replace. Grease had not been changed & tightened. Hose still being used. Can't seem to stabilize. Hole need down 10 ft. guide.

**Signed**: Richard Brown  **Date**: Jan 20, 1978
<table>
<thead>
<tr>
<th>Date</th>
<th>Jan 19, 1978</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>8HW-44</td>
</tr>
<tr>
<td>Hole No.</td>
<td># C</td>
</tr>
<tr>
<td>Elevation</td>
<td>884.4 ft</td>
</tr>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
</tr>
<tr>
<td>Location</td>
<td>Kona South Kona</td>
</tr>
</tbody>
</table>

Driller: Richard Brown  10 Hrs. Rig 366
Helper: Carl Ching  10 Hrs. Gas  Oil
Helper:               Hrs. Repairs
Hrs. Or. No.            

Bit-Size: 24" Type: Steel
Casing-Size: 24" in. Length in hole 18 ft. in., Amt. Perforated 50 ft. in.
Depth Start: 24' ft. Depth Stop: 40 ft. Feet Drilled: 16 ft
Water Levels, Time M ft., Time M ft.,

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

Remarks: Cleaning Hub to 24"

Remarks: Hub seems hard as drilled goes every way. Can't seem to stabilize Stock from sloppy.

Signed: Richard Brown  Date: Jan 19, 1978
**DRILLING LOG**

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

---

**Date:** Jan 18 1978  
**Job No:** SHW-44  
**Hole No:** #5  
**Elevation:** 884.2 ft.

**Customer:** Dept. of Natural Resources  
**Location:** Ke'e, South Kona

**Driller:** Richard Bourn  
**Helper:** Earl Ching  
**Rig:** 364

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

**Arv. Job:** 7:AM  
**Lv. Job:** 5:PM  
**Hrs.:**

---

**Bit-Size:** 2 7/8”  
**Type:** Star

**Casing-Size:** 2 7/8” in.  
**Length in hole:** 10 ft.  
**In. Amt. Perforated:** ft.

**Depth Start:** 0 ft.  
**Depth Stop:** 24 ft.  
**Feet Drilled:** 24 ft. - Reaming

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

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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>Reaming 4 &amp; setting surface pipe in hole. Reaming 0 - 24’</td>
<td></td>
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</tbody>
</table>

---

**Remarks:** Finished building up bit to 2 7/8” about 10 AM put same on & lined up with hole & started reaming. Set conductor pipe.

---

**Signed:** Richard Bourn  
**Date:** Jan 18 1978
### Drilling Log

**Ruscoe Moss Company**
530 Ahua Street • Honolulu, Hawaii 96819
Telephone (808) 839-6888 • 833-1444

**Date** Jan 17, 1978  
**Job No.** 8HW-44  
**Hole No.** # C  
**Elevation** 884.2 ft.

**Customer** Dept. National Reserves  
**Location** Kealii South Kona

**Driller** Richard Bourn  
**Hrs.** 10  
**Rig** 362

**Helper** Earl Chung  
**Hrs.** 10  
**Gas**  
**Oil**  
**Reps.**

**Arv. Job** 7:00 AM  
**Lv. Job** 5:00 PM  
**Hrs.**  
**Or. No.**

**Bit-Size** 18”  
**Type** M.H.

**Casing-Size** 18” in., Length in hole 12 ft.  
**Amt. Perforated** ft.  
**Oil**

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

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

**Remarks:**
- Broke down tools & starting without jaws picked up 22” Bit from KWH.
- Started rebuilding same to 24”

** Measurements**

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

**Removal:**
- Removed 18” Casing & got hole ready to start running as soon as get new bit built out to 24”. I worked on bit remainder of day.

**Signed** Richard Bourn  
**Date** Jan-17 1978
Date: Jan 15, 1978

Customer: Dept. National Resources
Location: Keei, South Kona

Driller: Richard Bourn
Helper: Carl Ogawa

Job No: 8841 - 44
Hole No: 4
Elevation: 884.3 ft.

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

Hrs._________ Hrs._________ Hrs._________ Hrs._________

Rig:_________ Gas:_________ Oil:_________ Repairs:_________

Bit-Size: 18'' Type: M.H.
Casing-Size: 18'' in., Length in hole: 120 ft. in., Amt. Perforated:_________ ft. in.
Depth Start:_________ ft., Depth Stop:_________ ft., Feet Drilled:_________

Water Levels, Time: M_________ ft., Time: M_________ ft.

Remarks:

Talked with Ed Wcreid to seen to 24'' pipe from there.

Shipped 24'' Bit & pipe on barge to Kwh.

Worked on hole, but not much luck doing any thing, getting ready to seen to 24'' hole. Maybe need to use836 & cement to bring back drift.

Signed: Richard Bourn  Date: Jan 15, 1978
Date: Jan 11 1978  
Job No. 8HW-44  
Hole No. #C  
Elevation 884.2 ft.

Customer: Dept National Resources  
Location: Keel South Kona

Driller: Richard Brown  10 Hrs.  
Rig: 368

Helper: Carl Chung  10 Hrs.  
Gas: Oil

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

Bit-Size: 18”  
Type: M.H.

Casing-Size: 18” in.  
Length in hole: 12 ft.  
Amt. Perforated:  

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>

Finished Reaming Hole to 370 ft.  
Drift bad off 2” Inside measurement.

| Remarks: | Tired everything to control drift but just got away from me. Need to ream to 24” to control to have room to work in hole. Tried back filling but don’t leave any slack hole to big. |

Signed: Richard Brown  
Date: Jan 11 1978
Date: Jan 11 1978  
Job No.: SHW-44  
Hole No.: # C  
Elevation: 384.2 ft.

Customer: Dept National Resources  
Location: Kea South Kona

Driller: Richard Bourn  
Helper: Earl Clay  
Arv. Job:  
Lv. Job:  

10 Hrs.  
10 Hrs.  

Rig: 36L  
Gas:  
Oil:  

Hrs.  
Hrs.  

Repairs:  

Bit-Size: 18”  
Type: M.H.

Casing-Size: 18” in.  
Length in hole: 12 ft.  
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>
</table>
|       | Reaming to 18” still drifting, Cant Hold a 1” drift on line, Cant Hold 275 to 295’  
       | Hole Reaming out foot lost 20’ Cant Hold to cut off wall  |

Measurements

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

Remarks: 14” hole drifted, Rock couldn’t hold even with Iron Cant Hold, while Reaming.

Signed: Richard Bourn  
Date: Jan 11 1978
**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>
<th>Customer</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 10, 1978</td>
<td>8HW-44</td>
<td>34C</td>
<td>884.2 ft</td>
<td>Dept. National Resources</td>
<td>Keel South Kona</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Richard Bourn</td>
<td>Earl Chuig</td>
<td></td>
<td></td>
<td></td>
<td>10 Hrs.</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&quot;</td>
<td>M/H</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>Length in hole</th>
<th>Amt. Perforated</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot; in.</td>
<td>13 ft.</td>
<td></td>
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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>
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</table>

<table>
<thead>
<tr>
<th>Water Levels, 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>

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

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

**Remarks:**
- Reaming Hole to 18" gone 14" pilot hole.
- Hole still drifting no matter what I do about 15 degree drift.

26522/95

**Signed:** Richard Bourn, Date Jan 10, 1978

**Coast Control Drift on Hole. Hole was originally drilled with trim to hold couldn't control even then.**
## DRILLING LOG

**Company:** Ruscoe Moss Company

**Location:** Keiki South Korea

---

<table>
<thead>
<tr>
<th>Date</th>
<th>1978-01-09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>8HW-44</td>
</tr>
<tr>
<td>Hole No.</td>
<td># C</td>
</tr>
<tr>
<td>Elevation</td>
<td>884.2 ft.</td>
</tr>
</tbody>
</table>

**Customer:** Dept. of National Resources

**Driller:** Richard Bourre

**Helper:** Earl Heuling

**Arv. Job:**

**Lv. Job:**

**Or. No.:**

---

**Bit-Size:** 18"

**Casing-Size:** 18" in., Length in hole 15 ft., Amt. Perforated 0 ft., in.

---

**Depth Start:**

**Depth Stop:**

**Feet Drilled:**

---

**Water Levels, Time:** M 30 ft., Time M 50 ft.

---

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

---

**Remarks:**

- Reaming, Hole shifting on pilot
- Hole - Cant seem to hold 245 to 265

---

**Signed:** Richard Bourre

**Date:** 1978-01-09
**DRILLING LOG**

---

**Date:** Jan 7, 1978  
**Job No.:**  
**Hole No.:** C  
**Elevation:** 884 ft.  
**Customer:** Dept. Nat. Res. H-99  
**Location:** Kau, South Kauai  
**Telephone:** (808) 839-6888 - 833-1444

<table>
<thead>
<tr>
<th>Driller</th>
<th>10 Hrs.</th>
<th>Rig 36L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>10 Hrs.</td>
<td>Gas Oil</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td>Repairs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hrs.</td>
</tr>
</tbody>
</table>

**Bit-Size:** 18"  
**Type:** M&V

<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>18&quot;</td>
<td>10 ft.</td>
<td></td>
<td>235 ft.</td>
<td>245 ft.</td>
<td>10 ft.</td>
</tr>
</tbody>
</table>

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

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

**Remarks:** Cleaning hole to 18" Continental 90 - 235' to 245'.

**Signed:** Richard Brown  
**Date:** Jan 7, 1978
**Date:** Jan 6  1978  **Job No.:** AHU-44  **Hole No.:** C  **Elevation:** 884.2 ft.

**Customer:** Dept National Resource  **Location:** Kaa South Kona

**Driller:** Richard Berun  **Hrs.:** 10  **Rig:** 366

**Helper:** Earl Ching  **Hrs.:** 10  **Gas:** Oil

**Arv. Job:** 7:AM  **Lv. Job:** 5:PM  **Hrs.:**  **Or. No.:**

**Bit-Size:** 18"  **Type:** M.H.

**Casing-Size:** 18"  **Length in hole:** 10 ft.  **In., Amt. Perforated:** ft.  **in.

**Depth Start:** 225 ft.  **Depth Stop:** 235 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></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reamed from 225 to 235</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controlling hole the same Meaning on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>when Drilling pilot hole not much help</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>foot is limited</td>
<td></td>
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</tbody>
</table>

**Remarks:** Pulled off 200 more feet line & run new rope  
Drove out all old line off now down to New line  
on Drum  
Check in stem seems to be opening up  
Keeping close watch dont want fishing job in this hole

**Signed:** Richard Berun  **Date:** Jan 6  1978
Date: Jan 5, 1978  
Job No: 8HW-44  
Hole No: C  
Elevation: 884.2 ft.

Customer: Dept. Natural Resources  
Location: Kea'au, South Kona

Driller: Richard Bourne  
10 Hrs.  
Rig: Kel

Helper: Earl Chung  
10 Hrs.  
Gas: Oil

Arv. Job: 7 AM  
Lv. Job: 5 PM  
Hrs.

Bit Size: 18"  
Type: M.H

Casing Size: 18" in.  
Length in hole: 10 ft.  
Amt. Perforated: ft.  
in.

Depth Start: 220 ft.  
Depth Stop: 225 ft.  
Feet Drilled: Remd 5 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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</table>

Remarks:
- Stranded line pulled off 40 ft.  
- Run new wire sector  
- Pull 16" pipe & piled up same, out of way  
- Reaming hole to 18". Came out hole line stranded again.

Signed: Richard Bourne  
Date: Jan 5, 1978
**Date:** Jan - 4 1978  
**Job No.:** SHE-47  
**Hole No.:** # C  
**Elevation:** 884.2 ft.

**Driller:** Richard Brown  
**Helper:** Earl Chung

**Arv. Job:** 7:40 AM  
**Lv. Job:** 5:10 PM

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

**Casing-Size:** 14" in., **Length in hole:** 224 ft., **Amt. Perforated:** ft. in.

**Depth Start:** 305 ft., **Depth Stop:** 308 ft., **Feet Drilled:** 3 ft.

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

<table>
<thead>
<tr>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>305</td>
</tr>
<tr>
<td>308</td>
</tr>
</tbody>
</table>

**Remarks:**  
- Started pulling 14" pipe after rigging up for same work on 18" M.H.V. Bit to start Monday on hole.  
- Pipe came out OK.

**Signed:** Richard Brown  
**Date:** Jan - 4 1978
Date: Jan 3, 1978  
Job No: SW-44  
Hole No: #6  
Elevation: 884.2 ft.  
Customer: Dept of Natural Resources  
Location: Kea, South Korea  

Driller: Richard Brown  
10 Hrs.  
Rig: 36L  

Helper: Carl Ching  
10 Hrs.  
Gas:  
Oil:  

Arv. Job: 7:00 AM  
Lv. Job: 5:00 PM  

Bit-Size: 14"  
Type:  
Saw: -  

Casing-Size: 14"  
in., Length in hole: 224 ft.  

Depth Start: 295 ft.  
Depth Stop: 305 ft.  
Feet Drilled: 10 ft.  

Water Levels, Time:  

Depth | Formation | Remarks | Top | Measurements |
--- | --- | --- | --- | --- |
295 |  |  |  |  |
305 |  |  |  |  |

Remarks: Hole goes every direction. Changed to stop bit again, but don't help either. Going to put in 14" casing in AM. Startreaming.

Signed: Richard Brown  
Date: Jan 3, 1978
**DRILLING LOG**

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

<table>
<thead>
<tr>
<th>Date</th>
<th>December 23, 1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td></td>
</tr>
<tr>
<td>Well No.</td>
<td></td>
</tr>
<tr>
<td>Elevation</td>
<td>884.2 ft.</td>
</tr>
<tr>
<td>Customer</td>
<td></td>
</tr>
<tr>
<td>Dept.</td>
<td></td>
</tr>
<tr>
<td>National Resources</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Kauai, South Kauai</td>
</tr>
</tbody>
</table>

**Driller:** Richard Bourne  
**Helper:** Earl Sluyt  
**Arv. Job:** 7 AM  
**Lv. Job:** 5 PM  
**Hrs.:** 10  
**Rig:** 36 L  
**Gas:**  
**Oil:**  
**Reps.:**  
**Or. No.:**  
**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  

**Bit-Size:** 14"  
**Type:** M  
**Casing-Size:** 14"  
**Length in hole:** 22.4 ft.  
**Depth Start:** 388 ft.  
**Depth Stop:** 395 ft.  
**Feet Drilled:** 7 ft.  

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>288</td>
<td>Lava</td>
<td>Hole goes in wrong direction</td>
<td></td>
</tr>
<tr>
<td>395</td>
<td>had last layer first one way than next</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**  
Put M.T. bit back on though might work back for forth & widen out hole. Cut bit some to help any.

**Signed:** Richard Bourne  
**Date:** December 23, 1977
Date: Dec. 22, 1977  
Job No. SHW-44  
Hole No. #  
Elevation: 884.2 ft.

Customer: Dept. of Natural Resources  
Location: Kaneohe, South Korea

Driller:  Richard Brown  
10 Hrs. Rig.

Helper:  Earl Chung  
10 Hrs. Gas.

Helper:  
Hrs. Oil.

Arv. Job: 7:AM  
Lv. Job: 5:PM  
Hrs. Repairs.

Arv. Job: 7:AM  
Lv. Job: 5:PM  
Hrs. Or. No.

Bit-Size: 14"  
Type: Stan.

Casing-Size: 14" in.  
Length in hole: 234 ft.  
In., Amt. Perforated: 2 ft. in.

Depth Start: 283 ft.  
Depth Stop: 288 ft.  
Feet Drilled: 5 ft.

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>283 ft.</td>
<td>Blue Rock</td>
<td>Break out Blue Rock</td>
<td></td>
</tr>
<tr>
<td>284 ft.</td>
<td>Red clay</td>
<td>Defective in hole, but cant</td>
<td></td>
</tr>
<tr>
<td>284 ft.</td>
<td>Pasta, Hard soft sand &amp; gravel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>288 ft.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Hole drilled just like stair steps, stuck foot  
Must be a fault zone or blow out. But found  
Could only get 12 ft.

Signed: Richard Brown  
Date: Dec. 22, 1977
Date: Dec 21, 1977
Job No.: #4
Location: Keei, South Kona

Customer: Dept Nat. Resources

Driller: Richard Bourn
Helper 1: Earl Ching
Helper 2:

Arrv. Job: 7:45 AM
Lv. Job: 5:30 PM

Bit Size: 14" Type: Stan

Depth Start: 283 ft., Depth Stop: 283 ft., Feet Drilled: 0

Water Levels: Time: M 110 ft., Time: M 110 ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>283</td>
<td>Blue Reef</td>
<td>Staying up bit started</td>
<td></td>
</tr>
<tr>
<td>283</td>
<td>Very very hard</td>
<td>It came down too size, but in wrong place, raising down</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

- Broke down from new pipe, erratic stalled out hole completely with down trying to drill over to plumb very hard to do.

Signed: Richard Bourn
Date: Dec 21, 1977
**DRILLING LOG**

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---

**Customer:** Dept. National Reserves  
**Location:** Kea’i South Kona

**Date:** Dec - 20 1977  
**Job No.:** SW-44  
**Hole No.:** # C  
**Elevation:** 884.5 ft.

**Driller:** Richard Bourn  
**Hrs.:** 10  
**Rig:** #61

**Helper:** Carl Chung  
**Hrs.:** 10  
**Gas:**  
**Oil:**

**Arv. Job:** 7 AM  
**Lv. Job:** 5 PM

**Depth Start:** 781 ft.  
**Depth Stop:** 283 ft.  
**Feet Drilled:** 54 ft.

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

**Casing-Size:** 14" in.  
**Length in hole:** 254 ft.  
**Amt. Perforated:** in.

**Formation**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>281</td>
<td>Still slaming down to control</td>
</tr>
<tr>
<td>283</td>
<td>Drift hole gets every direction</td>
</tr>
<tr>
<td></td>
<td>Using Max Plus driver</td>
</tr>
<tr>
<td></td>
<td>Having hard time to Control</td>
</tr>
</tbody>
</table>

**Remarks:** Changed design on bit but didn’t help any hole go in every direction at times.

---

**Signed:** Richard Bourn  
**Date:** Dec 20 1977
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>279</td>
<td>Blk Rock</td>
<td>Leaking up past bad area</td>
<td></td>
</tr>
<tr>
<td>281</td>
<td>Very Hard</td>
<td>Had to stop every 30 minutes</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:
Hole drifting bad everywhere. Came down to size hole to pad with clay to drill back must be on a deep to slope on top of large blow out or fault.

Signed: Richard Bourn  Date: Dec 19 1977
### DRILLING LOG

**Location:** Kea, South Korea
**Elevation:** 884.2 ft.

<table>
<thead>
<tr>
<th>Date</th>
<th>Dec 16, 1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>SHW-44</td>
</tr>
<tr>
<td>Hole No.</td>
<td># C</td>
</tr>
</tbody>
</table>

**Customer:** Dept. Natural Resources

**Driller:** Richard Bourn 10 Hrs.
**Helper:** Earl Chung 10 Hrs.

**Arv. Job:** 7:00 AM  **Lv. Job:** 5:00 PM

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

**Casing-Size:** 14 in., Length in hole: 274 ft., Amt. Perforated: 24 in., Ft.

**Depth Start:** 274 ft., Depth Stop: 279 ft., Feet Drilled: 5 ft.

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

### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>274</td>
<td>Blue Rock</td>
<td>Tuning up bit again - spent most of time building.</td>
</tr>
<tr>
<td>279</td>
<td>Key Hard</td>
<td>Spent some time on bit to fit up some.</td>
</tr>
</tbody>
</table>

**Remarks:**
- Earl got bit & sign from Rocker Ann man at 4 pm. Stopped & changed bit. Half came down at 2:00 but in wrong place. Had to back fill it & drill off with crowbar. Line measurement off over 1 inch.

**Signed:** Richard Bourn  **Date:** Dec 16, 1977
Date: Dec. 15 1977  
Job No.: 846-44  
Hole No.: #1  
Elevation: 834.2 ft.  

Customer: Dept. National Resources  
Location: Kekaha, South Kauai

Driller: Richard Bourn  
10 Hrs. Rig 361

Helper: Carl Chung  
10 Hrs.  
Gas:  
Oil:  

Helper Hrs.:  

Arv. Job: 7:AM  
Lv. Job: 5:PM  

Bit-Size: 14”  
Type: M.H.  

Casing-Size: 14”  
in. Length in hole: 224 ft.  

Depth Start: 269 ft.  
Depth Stop: 274 ft.  
Feet Drilled: 5’ ft.

Water Level, Time:  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>269</td>
<td>Blue Rock</td>
<td>Training up bit &amp;hd. building every 30 minutes</td>
<td></td>
</tr>
<tr>
<td>274</td>
<td>Very Hard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Having problems getting hole down to size in right place. On third bit if same just richer rock & faults.

Signed: Richard Bourn  
Date: Dec. 15 1977
Date: Dec-14 1977  Job No. SPW-44  Hole No. # C  Elevation 884.2 ft.
Customer: Dept. National Resources  Location: Keel, South Kona

Driller: Richard Brown  10 Hrs.  Rig 36 L
Helper: Earl Chung  10 Hrs.  Gas Oil
Helper:  1 Hrs.  Repairs

Bit-Size: 14"  Type: M.H.
Casing-Size: 14" in., Length in hole 224 ft. in., Amt. Perforated ft. in.
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>260</td>
<td>Pulka</td>
<td></td>
</tr>
<tr>
<td>261</td>
<td>Pulka Bottom</td>
<td></td>
</tr>
<tr>
<td>262</td>
<td>Pulka Hole</td>
<td>Bulked 7 ft. without</td>
</tr>
<tr>
<td>263</td>
<td>No bottom</td>
<td>Bulked</td>
</tr>
<tr>
<td>265</td>
<td>Blue Rocks</td>
<td>Bumping around bottom</td>
</tr>
<tr>
<td>269</td>
<td>Very Hard</td>
<td>Hanging, hit stuck below</td>
</tr>
<tr>
<td>269</td>
<td>Blue Rock</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Coal went to come after fishing tools & Junk then never got back till 6:30 PM. Hauled pipe into hole for Sam.

Signed: Richard Brown  Date: Dec-14 1977
**DRILLING LOG**

**RSOCOE MOSS COMPANY**

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Date: Dec-13 1977  
Job No.: BW-44  
Hole No.: C  
Elevation: 854.2 ft.

Customer: Dept. of Natural Resources  
Location: Kei South Korea

**Driller:** Richard Bourn  
10 Hrs.  
Rig: 366

**Helper:** Earl Chung  
10 Hrs.  
Gas:  
Oil:  
Reps:  
Arv. Job: 2-AM  
Lv. Job: 5-PM  
Hrs:  
Or. No:  

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>14&quot;</td>
<td>M. H.</td>
</tr>
</tbody>
</table>

Casing-Size: 14" in.  
Length in hole: 234 ft.  
Amt. Perforated:  

Depth Start: 248 ft.  
Depth Stop: 160 ft.  
Feet Drilled: 12 ft

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>248</td>
<td>Fuka</td>
<td>Still Drifting, Boil</td>
<td></td>
</tr>
<tr>
<td>260</td>
<td>Hard &amp; soft loam</td>
<td>forth using chom.</td>
<td></td>
</tr>
</tbody>
</table>

---

Remarks: Seems to be getting some better for drift  
but can't hold with that same padding.

---

Signed: Richard Bourn  
Date: Dec-13 1977
Date: Dec-12 1977 Job No. 8444-49 Hole No. 3C Elevation 884.2 ft.
Customer: Dept. Natural Resources Location: Kea South Kona

Driller: Richard Brown 10 Hrs. Rig 366
Helper: Earl Chung 10 Hrs. Gas
Helper: _____________________________ Hrs. Oil

Bit-Size: 14" Type: M.H.
Depth Start: 236 ft., Depth Stop: 248 ft., Feet Drilled: 12 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>236</td>
<td>Raka</td>
<td>Still has same old</td>
<td></td>
</tr>
<tr>
<td>248</td>
<td>Brownish color</td>
<td>Drift</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Hole runs too same general direction some times north & south but same general drift.

Signed: Richard Brown Date: Dec-12 1977
```
# DRILLING LOG

Date: Dec. 9, 1977  Job No. 866 - 44  Hole No. # C  Elevation 884.2 ft.

Customer: Dept. - National Resources  Location: Min. South Korea

Driller: Richard Bourn  10 Hrs.  Rig 361
Helper: Earl Ohnig  10 Hrs.  Gas
Helper:  10 Hrs.  Oil

Bit-Size: 14"  Type: M.H.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>Pink Rock</td>
<td>Podling with Iron Rod</td>
<td></td>
</tr>
<tr>
<td>236</td>
<td>Sand &amp; Spt Layer</td>
<td>To fill 2 ft to drill off.</td>
<td></td>
</tr>
</tbody>
</table>

Measurements

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

Remarks: Hole seems to be holding when we drill. It's new water was in Creek and down & smooth but dry. But not much good to shorten body only 3 ft. long. The one we have now for pilot bit. holding later.

Signed: Richard Bourn  Date: Dec. 9, 1977
```
Date: Dec. 8, 1977  
Job No.: 8HW-44  
Hole No.: #6  
Elevation: 884.2 ft.

Customer: Dept. of Natural Resources  
Location: Kea, South Korea

Driller: Richard Brown  
10 Hrs.  
Rig: 361

Helper: Carl Ching  
10 Hrs.  
Gas: Oil

Helper:  
Hrs.:  
Repairs:

Arr. Job: 7:00 AM  
Lbv. Job: 5:00 PM  
Hrs.:  
Or. No.:

Bit-Size: 14"  
Type: M.H.

Casing-Size: 14" in.  
Length in hole: 224 ft.  
Amnt. Perforated:

Depth Start: 224 ft.  
Depth Stop: 230 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>
</tr>
</thead>
<tbody>
<tr>
<td>224</td>
<td>Hard Clay</td>
<td>Lots of alumina goes crooked on same old angle.</td>
</tr>
</tbody>
</table>

Remarks: Had to pull job with clay to maintain drift  
Seems to want to go down hill all time.  Clay didn't  
Drill down plumb but not enough to hurt well.  
Correct when seen.

Signed: Richard Brown  
Date: Dec. 8, 1977
Driller: Richard Bourn 10 Hrs. 
Helper: Earl Ching 10 Hrs. 
Helper: 
Arv. Job 7:00 
Lv. Job 5:00 
Bit-Size: 14" Type: M.H. 
Casing-Size: 14" in., Length in hole 224' ft. in., Amt. Perforated ft. in. 
Depth Start: 220 ft., Depth Stop 224' ft., Feet Drilled 4' 
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>220</td>
<td>Cinder</td>
<td>Drilled Casing to bottom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>224</td>
<td></td>
<td>seems to be Moisture now.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Spent most of day drilling pipe down trying to get some slurry. Spent lot of time building up M.H., but to 14' was only 13' pipe seems to be setting on hard layer now.

Signed: Richard Bourn  
Date: Dec. 7 1977
**DRILLING LOG**

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<table>
<thead>
<tr>
<th>Date</th>
<th>Dec. 6 1977</th>
<th>Job No. 8Hw-44</th>
<th>Hole No. 7C</th>
<th>Elevation 884.2 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Kea, South Korea</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Brown</th>
<th>10 Hrs.</th>
<th>Rig 361</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Chung</td>
<td>10 Hrs.</td>
<td>Gas, Oil</td>
</tr>
<tr>
<td>Arv. Job</td>
<td>7:00</td>
<td>Lv. Job 5:00</td>
<td>Hrs.</td>
</tr>
</tbody>
</table>

**Bit-Size** 14", **Type** M18  
**Casing-Size** 14" in., Length in hole 224 ft., Amt. Perforated ft. in.  
**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>Had to drill pipe to bottom did not finish - will continue same in A.M.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Changed tools & set 224' 14" Casing in hole didn't set in plumb about 3' Off in bottoms but can handle difference when set up to ream.

Signed: Richard Bourn  
Signed: Richard Bourn  
Date: Dec. 6 1977
Date: Dec - 5 1977  Job No: SHW - 44  Hole No: # C  Elevation: 884.2 ft.

Customer: Dept National Resources  Location: Kau, South Kona

Driller: Richard Bourn  10 Hrs.  Rig: 361  
Helper: Earl Ching  10 Hrs.  Gas:  Oil:  

Bit-Size: 18"  Type: Motor  
Depth Start: 220 ft.  Depth Stop: 220 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>Reaming on Kau to getting ready for 14&quot; Casing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Earl hauling Casing from Rock Jet bath.  
Loder loaded today. A Change tools 1 set pipe in A.M.  

Signed: Richard Bourn  Date: Dec - 5 1977
Date: Dec-2 1977  
Job No.: 884-44  
Hole No.: # C  
Elevation: 894.2 ft.

Customer: Dept. Natural Resources  
Location: Keei South Kona

Driller: Richard Busam  
10 Hrs.  
Rig: 361

Helper: Earl Ching  
10 Hrs.  
Gas: Oil

Arr. Job: 7:00  
Lv. Job: 5:00  
Hrs.:  
Or. No.:  

Bit-Size: 18" Type: M.H.

Casing-Size: 18" in., Length in hole: 73 ft.  
In., Amt. Perforated: ft. in.

Depth Start: 230 ft., Depth Stop: 220 ft., Feet Drilled: None

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>220</td>
<td>Cindara</td>
<td>Can't get pipe to set Casing.</td>
</tr>
</tbody>
</table>

Remarks: Hole looks like hell don't know if will take 14" pipe  
plumb or not - reason on kluts - put muffler on rig Earl  
put lock from dome welded on bit late to keep slippin'  
Cutting Edge - Limited drift for 15" pipe don't know about 14" - Hoping -

Signed: Richard Busam  
Date: Dec-2 1977
Date: Dec 1974  Job No. 864W-44  Hole No. 1  Elevation 384 ft.

Customer: Dept. of National Resources  Location: Keai South, Kona

Driller: Richard Brown  10 Hrs.  Rig 361
Helper: Earl Chun  10 Hrs.  Gas  Oil
Helper:  8 Hrs.  Repairs

---

Bit-Size: 18''  Type: M.H.
Depth Start: 230 ft.  Depth Stop: 250 ft.  Feet Drilled: None

Water Levels, Time

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>240</td>
<td>Casing - Building Bit</td>
</tr>
<tr>
<td></td>
<td>Casing - With lugs trying to clean</td>
</tr>
<tr>
<td></td>
<td>Fracture off well for pipe.</td>
</tr>
</tbody>
</table>

---

Remarks: Hole don't look good. Don't know if can change 18'' casing. In hole or that darn stuff seems to be formidable. Working on wall. Going to send 2H to same rig in A.M. After hole.

Signed: Richard Brown  Date: Dec 1 1974
Date: Nov 30 1979  
Job No.: 8HW-44  
Hole No.: 4  
Elevation: 884.2 ft.

Customer: Dept. National Resources
Location: Keel, South Kona

Driller: Richard Brown  
10 Hrs.  
Rig: 361

Helper: Earl Ching  
10 Hrs.  
Gas: Oil

Helper:  
Hrs.  
Repairs:

Arv. Job: 7:00  
Lv. Job: 5:00  
Hrs.  
Or. No.:

---

Bit-Size: 18"  
Type: M.H.


Depth Start: 220 ft., Depth Stop: 220 ft., Feet Drilled: None

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>220</td>
<td>Cinders</td>
<td>No progress. Fill hole with mud but cant hold. Any of suit loose enough to drill loose all mud.</td>
</tr>
</tbody>
</table>

Remarks:
Changed bits to M.H. 18" can't get any progress. Coming to rock also very slacking roof with water. Drift way under well nothing to hold with. Asked Ch. to ship one 14" pipe to put in hole.

Signed: Richard Brown  
Date: Nov 30 1979
Date: Nov-29 1977 | Job No.: HW-44 | Hole No.: 4C | Elevation: 884.2 ft.
Customer: Dept. National Resources | Location: Keei, South Kona

Driller: Richard Bourn | 10 Hrs. | Rig: 36L
Helper: Carl Ching | 10 Hrs. | Gas: | Oil:
Helper: | Hrs. | Repairs: 
Arv. Job: 7:00 | Lvn. Job: 5:00 | Hrs.

Bit-Size: 18" | Type: Star
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>215</td>
<td>Caudine</td>
<td>Caudine</td>
<td></td>
</tr>
<tr>
<td>220</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Measurements

Remarks: Made a few feet then backing cant hold drill kept going deeper. Well full. Bad pumps on well stay on one side nothing on other side. Hole getting dangerous as could whip off tools under ceiling.

Signed: Richard Bourn | Date: Nov-29 1977
**DRILLING LOG**

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

---

**Date**: Nov-28 1977  **Job No.**: 8HW-44  **Hole No.**: # C  **Elevation**: 884.2 ft.

**Customer**: Dept National Insurance  **Location**: Keau South Kona

**Driller**: Richard  10 Hrs.  **Rig**: 364

**Helper**: Earl  10 Hrs.  **Gas**:  **Oil**: 

**Avr. Job**: 7:00  **Lv. Job**: 5:00  **Hrs.**  

**Bit-Size**: 18"  **Type**: Stem

**Casing-Size**: 18"  **in.**, Length in hole 12"  **ft.**  **in.**, Amt. Perforated  **ft.**  **in.**

**Depth Start**: 213  **ft.**, Depth Stop: 215  **ft.**, Feet Drilled: 3  **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>213</td>
<td>Cinders</td>
<td>Hole big casing down</td>
</tr>
<tr>
<td>215</td>
<td>Clay</td>
<td>from 2115 ft. top -5</td>
</tr>
</tbody>
</table>

**Remarks**: Stem whipping cinders & rocks down from above. Also hole key big.

---

**Signed**: Richard Bourn  **Date**: Nov-28 1977
### Drilling Log

**Date:** Nov-25 1977  
**Job No.:** 8116-44  
**Hole No.:** 4  
**Elevation:** 884.2 ft.

**Customer:** Dept. National Resources  
**Location:** Kei, South Korea

<table>
<thead>
<tr>
<th>Driller</th>
<th>Richard Bourn</th>
<th>18 Hrs.</th>
<th>Rig 961</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>8 Hrs.</td>
<td>Gas</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oil</td>
</tr>
<tr>
<td>Arv. Job</td>
<td>7 AM</td>
<td>3 PM</td>
<td>Hrs.</td>
</tr>
</tbody>
</table>

**Bit-Size:** 18"  
**Casing-Size:** 18" in.  
**Depth Start:** 202 ft.  
**Depth Stop:** 312 ft.  
**Feet Drilled:** 10

**Water Levels, Time:**  
**Measurements:**  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>202</td>
<td>Puka Rock</td>
<td>Hit Puka, Hole left edge, Hole full of limes.</td>
<td></td>
</tr>
<tr>
<td>312</td>
<td></td>
<td>Fighting Well, Drilling back edge, Drift to normal.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Tried Mud wouldn't hold, Used "Cemented" with 5 bags cement, mixed up same, left set until Monday.

**Signed:** Richard Bourn  
**Date:** Nov-25 1977
Date: Nov-23 1977  Job No: 8HW-44  Hole No: #C  Elevation: 884.2 ft.
Customer: Dept. National Resources  Location: Kealakekua, South Kona

Driller: Richard Bourn  10 Hrs.  Rig: 36L
Helper: Earl Chung  10 Hrs.  Gas: Oil

Arv. Job: 7:00  Lv. Job: 5:14 P.M.  Hrs. Repairs: Or. No.:

Bit-Size: 18"  Type: Star
Depth Start: 190 ft., Depth Stop: 202 ft., Feet Drilled: 12 ft

Water Levels, Time: M ft., Time: M ft., Measurements: A B

Depth  Formation  Remarks
190  Pu'uk Rock  Hard & soft streaks, could be sandstone
202

Remarks:

Using some dynamite to blow out the bumpy or wall seems to drift unevenly we go through the hard layers.

Signed: Richard Bourn  Date: Nov-23 1977
**Date**: Nov-22 1977  
**Job No.**: SHU-47  
**Hole No.**: # C  
**Elevation**: 884.2 ft.

**Customer**: Dept. National Resources  
**Location**: Kealakekua, South, Hawaii

**Driller**: Richard Bourn  
**Helper**: Earl Ching

**Av. Job**: 7:40 AM  
**Lv. Job**: 5:10 PM

**Driller's Hours**: 10 Hrs.  
**Helper's Hours**: 10 Hrs.

**Rig**: 364  
**Gas**: Oil

**Repairs**

---

**Depth Start**: 172 ft.  
**Depth Stop**: 190 ft.  
**Feet Drilled**: 18

**Water Levels, Time**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>172</td>
<td>Puka Rock</td>
<td>Hard &amp; soft lagoas&lt;br&gt;Some very hard strata&lt;br&gt;but there.</td>
</tr>
<tr>
<td>190</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size**: 18"  
**Casing-Size**: 18" in.  
**Type**: Star

**Length in hole**: 6 ft.  
**Amt. Perforated**: ft. in.

---

**Remarks**: Hit Puka hole at about 176" tool went about 3 ft. without cutting. Anything had some problem dropping off help at always seem to break through crooked.

**Signed**: Richard Bourn  
**Date**: Nov-22 1977
Date: Nov-21, 1977
Job No.: SHW-44
Hole No.: #2
Customer: Dept. National Resources
Location: Kea South, Kona

Driller: Richard Bourne
10 Hrs. Rig: 361
Helper: Earl Chung
10 Hrs. Gas: Oil
Helper:
Hrs. Repairs:
Arv. Job: 7:00
Lv. Job: 5:00

Bit-Size: 18" Type: Stan
Depth Start: 165 ft., Depth Stop: 177 ft., Feet Drilled: 12 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>165</td>
<td>Punk Yard</td>
<td>Some layers are a foot or so thick but most are thin - having problems with ledges.</td>
</tr>
<tr>
<td>177</td>
<td>Soft layers</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Tiring down to build wall stone to build back to be able to drill off hard ledges.

Signed: Richard Bourne
Date: Nov-21, 1977
Date: Nov-18 1977  Job No. SHW-44  Hole No. # C  Elevation: 884.2 ft.

Customer: Dept. National Insurance  Location: Ke'eaumoku Area

Driller: Richard Brown  10 Hrs.  Rig: 364
Helper: Earl Ching  10 Hrs.  Gas:  Oil:

Arv. Job:  Lv. Job:  Hrs.:  Or. No.:  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>
<tbody>
<tr>
<td>154</td>
<td>Parks Rock</td>
<td>Soft but seems to drill rather slow Hole</td>
<td></td>
</tr>
<tr>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>160</td>
<td>A.A. Lagen</td>
<td>Big</td>
<td></td>
</tr>
<tr>
<td>165</td>
<td>Very Broken</td>
<td>Hard &amp; wants to run crooked</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>But Holding</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Changed Oil in Rig & truck & pickup also pulled Kinaiwell & all equipment. Had to do some repairs on shifting fork on rig.

Signed: Richard Brown  Date: Nov-18 1977
Drilling Log

Date: Nov-17 1977
Job No.: SWW-44
Hole No.: # C
Elevation: 884.2 ft.

Customer: Dept. Natural Resources
Location: Kea'au, South Kona District

Driller: Richard Brown
10 Hrs. Rig 36L

Helper: Earl Ching
10 Hrs. Gas Oil

Arv. Job: 7 AM
Lv. Job: 5 PM

Note: Have to keep bit built up using sharp edges of notches to hold from dust some layers they sound but only for 10" thick.

Signed: Richard Brown
Date: Nov-17 1977
Date: Nov-16 1977  
Job No: 8HW-44  
Hole No: #C  
Elevation: 884.2 ft.

Customer: Dept National Resources  
Location: Kewai South Kansas District

Driller: Richard Bourn  
10 Hrs.  
Rig: 36L

Helper: Earl Ching  
10 Hrs.  
Gas: Oil

Arv. Job: 7:AM  
Lv. Job: 5:PM

Bit-Size: 18"  
Type: Star

Casing-Size: 18" in., Length in hole: 6 ft.  
Amt. Perforated: 2 ft.  

Depth Start: 129 ft.  
Depth Stop: 134 ft.  
Feet Drilled: 5 ft.

Water Levels, Time: 9 M ft., Time: 8 M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>129</td>
<td>AAA Cracked</td>
<td>BROKE OUT &amp; SEEM TO</td>
</tr>
<tr>
<td>134</td>
<td>Broken</td>
<td>HOE HOLE BACK TO PLUMB</td>
</tr>
</tbody>
</table>

Remarks:
Run new rope, socket & pulled off another 70 ft. line seems to have all bad line off now. Seems hole is in solid rock now wants to come back plumb but holding alignment OK.

Signed: Richard Bourn  
Date: Nov-16 1977
Date: Nov-15 1977  
Job No.: SHW-44  
Hole No.: C  
Elevation: 884.2 ft.

Customer: Dept. of Natural Resources  
Location: Keiki South, Kona District

Driller: Richard Bourn  
10 Hrs.  
Rig: 364

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

Arv. Job: 7:AM  
Lv. Job: 5:PM  

Bit-Size: 18”  
Type: Star

Casing-Size: 18” in.  
Length in hole: 6 ft.  
Amt. Perforated: in.

Depth Start: 124  
Depth Stop: 129  
Feet Drilled: 5 ft.

Water Levels, Time:  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>124</td>
<td>Puka Rock</td>
<td>Must have some hard</td>
<td></td>
</tr>
<tr>
<td>129</td>
<td></td>
<td>Chunks in Puka, keep waiting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drift over 2” line measurement</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>to about 3 ft. but correcting</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Seems to be hard stuff on one side but easy later on. To control drift holding OK. Drilling late feeling on bit. Stand up line on last run today.

Signed: Richard Bourn  
Date: Nov-15 1977
DRILLING LOG

Date: 11-14-77  Job No: 8HW-44  Hole No: C  Elevation: 884.2 ft.
Customer: Dept. Natural Resources  Location: Ko'olau South Foun District

Driller: Richard Bourn  10 Hrs.  Rig: 364
Helper: Earl Chan  10 Hrs.  Oil
Helper:  Hrs.  Gas
Arv. Job: 7:00 AM  Lv. Job: 5:00 PM  Hrs.  Repairs

Bit-Size: 18"  Type: Star
Depth Start: 120 ft.  Depth Stop: 124 ft.  Feet Drilled: 4
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>120</td>
<td>Brown paka</td>
<td>Back filled hole 3 ft.  drill off ledge - very hard packing heavy with iron.</td>
<td></td>
</tr>
<tr>
<td>124</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Measurements

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

Remarks: Hooked surface pipe & pulled same had to change 9 regate same made some difference in measurement, but lined out ok.

Signed: Richard Bourn  Date: Nov-14 1977
## DRILLING LOG

**RUSCOE MOSS COMPANY**

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

---

**Date:** Nov-10 1977  
**Job No.:** HW-44  
**Hole No.:** #1  
**Elevation:** 884.2 ft.

**Customer:** Dept. National Resources  
**Location:** Kea, South Kona District

- **Driller:** Richard Bourn  
  **Hrs.:** 10 Hrs.
- **Helper:** Earl Ching  
  **Hrs.:** 10 Hrs.
- **Arv. Job:** 2:AM  
  **Lv. Job:** 5:PM

**Rig:** 961  
**Gas:** Oil  
**Repairs:**

---

**Bit-Size:** 18”  
**Type:** Steel

**Casing-Size:** 18” in., Length in hole: 60 ft. in.  
**Amt. Perforated:** ft. in.

**Depth Start:** 112 ft.  
**Depth Stop:** 120 ft.  
**Feet Drilled:** 8 ft.

**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>112</td>
<td>Blue Rock very</td>
<td>Went Crooked Choring</td>
</tr>
<tr>
<td>114</td>
<td>Hard-</td>
<td></td>
</tr>
<tr>
<td>114</td>
<td>Puka Rock</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>Brown in Color</td>
<td>Soft zone solid layers</td>
</tr>
</tbody>
</table>

---

**Measurements**

--

**Remarks:**

Had to back fill 2 ft. pad with down to drill.
Off bedding went crooked going out of sand units up.

---

**Signed:** Richard Bourn  
**Date:** Nov-10 1977
```
Date: Nov-9 1977  
Job No: SW-44  
Hole No: C  
Elevation: 884.2 ft.

Customer: Dept. National Resources  
Location: Kew South Kona District

Driller: Richard Brown 10 Hrs.  
Rig: 36L

Helper: Rod Chung 10 Hrs.  
Gas: Oil:  
Repairs:  

Arv. Job 7:AM  
Lv. Job 5:PM  
Hrs.  
Or. No.  

Bit Size: 18"  
Type: Star

Casing Size: 18" in.  
Length in hole: 64 ft.  
Amt. Perforated: 14 ft.  

Depth Start: 108 ft.  
Depth Stop:  
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>108 ft</td>
<td>Blue Rock</td>
<td>Hill some drift but current hole was hard to control. Lesing up bit some welding every 30 minutes.</td>
</tr>
</tbody>
</table>


Signed: Richard Brown  
Date: Nov-9 1977
```
**DRILLING LOG**

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

Date: Nov-8 1977  
Job #: SHW-44  
Hole #: 1  
Elevation: 884.3 ft.

Customer: Dept. National Resources  
Location: Kealakekua Kona District

---

<table>
<thead>
<tr>
<th>Driller</th>
<th>Helper</th>
<th>Helper</th>
<th>Arv. Job</th>
<th>Job Start</th>
<th>Job Stop</th>
<th>Helper Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Booza</td>
<td>Earl Ching</td>
<td></td>
<td>7:00 AM</td>
<td>9:00 AM</td>
<td>5:00 PM</td>
<td></td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
<th>Casing-Size</th>
<th>Depth Start</th>
<th>Depth Stop</th>
<th>Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot;</td>
<td>Stan</td>
<td>18&quot; in., Length in hole: 40 ft.</td>
<td>105 ft.</td>
<td>108 ft.</td>
<td>3 ft.</td>
</tr>
</tbody>
</table>

---

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

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>Hard AA layer</td>
<td>Hand drilling last able to continue</td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>Blue Rock</td>
<td>Not quite to bed hence to build up bit every 30 minutes</td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>Hard.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Remarks: Cut remaining barren off. Bit I prebuilt same rock tearing up but fairly slow progress very slow.

Signed: Richard Booza  
Date: Nov-8 1977
### Drilling Log

**Date:** Nov 7, 1977  
**Job No:** 88W-44  
**Hole No:** #C  
**Elevation:** 884.2 ft.

**Customer:** Dept. National Resources  
**Location:** Kealakekua South Kona District

| Driller  | Richard Brown | 10 Hrs. | Rig | 8x4 L
|----------|---------------|---------|-----|------
| Helper   | Earl Ching   | 10 Hrs. | Gas | Oil |
| Helper   |               |         |     |      |
| Arr. Job | 8:00 AM      | Lv. Job | 5:00 PM | Hrs. |
| Or. No.  |               |         |      |      |

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>18&quot;</th>
<th>Type</th>
<th>Steel</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>18&quot; in.</th>
<th>Length in hole</th>
<th>6 ft.</th>
<th>Amt.</th>
<th>Perforated</th>
<th>ft.</th>
<th>in.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>105 ft.</th>
<th>Depth Stop</th>
<th>105 ft.</th>
<th>Feet Drilled</th>
<th>4 ft.</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>Hard A.A. Layer</td>
<td>Padding hole with iron</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>company Hard.</td>
<td>To control drift</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Nov - 4 1977</td>
<td>Job No.</td>
<td>8H-44</td>
</tr>
<tr>
<td>------------</td>
<td>--------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>Customer</td>
<td>Dept. Natural Resources</td>
<td>Location</td>
<td>Kealakekua, South Kona District</td>
</tr>
<tr>
<td>Driller</td>
<td>Richard Brown</td>
<td>10 Hrs.</td>
<td>Rig 361</td>
</tr>
<tr>
<td>Helper</td>
<td>Earl Ching</td>
<td>10 Hrs.</td>
<td>Gas</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td></td>
<td>Oil</td>
</tr>
<tr>
<td>Arv. Job</td>
<td>7:30 AM</td>
<td>5:30 PM</td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>18&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>18&quot; in.</td>
<td></td>
<td>6 ft. in.</td>
</tr>
<tr>
<td>Depth Start</td>
<td>92 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>M</td>
<td>ft.</td>
<td>Time</td>
</tr>
<tr>
<td>Remarks:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>Formations</td>
<td>Remarks</td>
<td>Top</td>
</tr>
<tr>
<td>92</td>
<td>Hard A.P.</td>
<td>Wanting to shift again</td>
<td>92 ft.</td>
</tr>
<tr>
<td>101</td>
<td></td>
<td>pudding with chisel</td>
<td></td>
</tr>
<tr>
<td>Remarks:</td>
<td>Hole running every direction Can't seem to have a happy solution unless post with chisel.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signed: Richard Brown  Date: Nov - 4 1977
Date Nov. 3 1977
Job No. 8HW-44
Hole No. # C
Elevation 884.2 ft.

Customer Dept. Natural Resources
Location Keei South Kona district

Driller Richard Brown 10 Hrs. Rig 361
Helper Earl Ching 10 Hrs. Gas
Helper Hrs. Oil
Arv. Job 7:00 AM Lv. Job 5:00 PM Hrs.

Bit-Size 18" Type Star
Casing-Size 18" in., Length in hole 6 ft. in., Amt. Perforated ft. in.
Depth Start 76 ft., Depth Stop 92 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>76</td>
<td>Rock Key Lava</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>Split Key Lava</td>
<td>Still to Add Bentonite Co holds Mud.</td>
<td>99</td>
</tr>
<tr>
<td>90</td>
<td>A.A. Hard Lava</td>
<td></td>
<td></td>
</tr>
<tr>
<td>92</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Measurements

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

Remarks: Hole running took plum, now was off but straightened out & OK after drilling with show.

Signed Richard Brown Date Nov. 3 1977
**DRILLING LOG**

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

---

**Date:** Nov-3 1977  
**Job No.:** HW-44  
**Hole No.:** # C  
**Elevation:** 884.3 ft.

**Customer:** Dept. Natural Resources  
**Location:** Keeaumoku District

**Driller:** Richard Fourn  
**Helper:** Earl Chung  
**Arv. Job:**  
** Lv. Job:**  
**10 Hrs.**  
**10 Hrs.**  
**Rig 564**  
**Gas**  
**Oil**

**Helper:**  
**Hrs.**  
**Repairs:**  
**Hrs.**  
**Or. No.:**

---

**Bit-Size:** 18"  
**Casing-Size:** 18" in.  
**Depth Start:** 70 ft.  
**Depth Stop:** 76 ft.  
**Feet Drilled:** 6 ft.

---

**Water Levels:**  
**Time M ft:**  
**Time M ft:**  
**Measurements:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>Chalks &amp; Hard</td>
<td>Hole not drifting so well, but still pushing with 9 ft. drill.</td>
</tr>
</tbody>
</table>

**Remarks:** Backed up 2 ft & paused with drill to drill off ledge.

---

**Signed:** Richard Fourn  
**Date:** Nov-3 1977
DRILLING LOG

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

Date: Nov-1, 1977  Job No: 8-HW-44  Hole No: C  Elevation: 880 ft.
Customer: Dept. National Resources  Location: Keeaumoku Area

Driller: Richard Bourn  10 Hrs.  Rig: 36 L
Helper: Earl Ching  10 Hrs.  Gas:  Oil

Arv. Job: 7:00 AM  Lr. Job: 5-PM  Hrs.  Repairs:  

Bit-Size: 18"  Type: Star
Depth Start: 67 ft., Depth Stop: 70 ft., Feet Drilled: 3 ft

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

Depth  Formation  Remarks  Top
67  Chalks, Very  Welding on bit.  Often
70  Hard large chunks from & chips. Leaves  9

Remarks: Hole still wanting to drift, bit money about 2 1/2 inches. Line measurement in 1 ft.
If don't hold steady with down hole inspect
Come today & lift specks

Signed: Richard Bourn  Date: Nov-1, 1977
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td>Clinkers &amp; Hard</td>
<td>Hole Wanting to drift</td>
<td>99</td>
</tr>
<tr>
<td>167</td>
<td>Ledges Some Clinker &amp; Had</td>
<td>Have to pad with down to 5 1/2&quot; &amp; pull off wall</td>
<td>99</td>
</tr>
</tbody>
</table>

Remarks: Padding Floor will slow progress very slow but hole holding good.

Signed: Richard Bourn  Date: Oct-31 1977
**DRILLING LOG**

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

**Date:** Oct-28 1977  
**Job No.:** 524-44  
**Hole No.:** #1  
**Elevation:** 880 ft.

**Customer:** Dept. National Insurance  
**Location:** Kea Area, Kona

**Driller:** Richard Bouman  
**Helper:** Earl Ching  
**Rig:** 36-L

<table>
<thead>
<tr>
<th>Driller</th>
<th>Helper</th>
<th>Time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Bouman</td>
<td>Earl Ching</td>
<td>10 Hrs.</td>
<td>Rig 36-L</td>
</tr>
</tbody>
</table>

**Arv. Job | Lv. Job | Hrs.**
---|---|---

**Bit-Size:** 18"  
**Type:**  
**Casing-Size:** 18" in., Length in hole 6 ft., Amt. Perforated 4 ft. in.

**Depth Start:** 55 ft., **Depth Stop:** 63 ft., **Feet Drilled:** 8 ft.

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

**Measurements:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>Rod Chances</td>
<td>Hard layers &amp; limes could be following 9 1/2&quot; hole</td>
</tr>
<tr>
<td>63</td>
<td>Chances</td>
<td>Off to right 9 1/2&quot; hole</td>
</tr>
</tbody>
</table>

**Remarks:**

Have some casing, but not much. Drive very bad at times but can continue, but goes very slow. Checked it made out bottom line measured 9 1/2" minus drilling on location of well site.

**Signed:** Richard Bouman  
**Date:** Oct-28 1977
**DRILLING LOG**

**Address:** 830 Ahua Street, Honolulu, Hawaii 96819  
**Telephone:** (808) 839-6888  
**Customer:** Dept. National Recreation  
**Location:** Kea'au Area, Kona

<table>
<thead>
<tr>
<th>Date</th>
<th>Job No.</th>
<th>Hole No.</th>
<th>Elevation</th>
<th>Customer Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 27, 1977</td>
<td>8614-47</td>
<td>#1</td>
<td>880 ft.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>10 Hrs.</th>
<th>Rig</th>
<th>36L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Brown</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>10 Hrs.</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earl Chujo</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Arv. Job</th>
<th>Lv. Job</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<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>Stav</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>18'' in.</td>
<td>43 ft.</td>
<td>55 ft.</td>
<td>12 ft.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M ft., Time</th>
</tr>
</thead>
<tbody>
<tr>
<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>43</td>
<td>Deakin Clinker</td>
<td>Carrying Same Hole</td>
<td>83'9'</td>
</tr>
<tr>
<td>44</td>
<td>7 A.</td>
<td>Wanting to Shift But</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>7 A.</td>
<td>Holding</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>7 A.</td>
<td>Hole will make mud but</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Clinker</td>
<td>Still have some hard Clinker</td>
<td>83'9'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>83'9'</td>
</tr>
</tbody>
</table>

**Remarks:** Have some trouble with drift & conductor at 43 ft. field in around same spot, help in place, visit jeep time & blocked rig gone solid.

Signed: Richard Brown  
Date: Oct. 27, 1977
### Drilling Log

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819

Telephone (808) 839-6888 • 833-1444

---

**Drilling Log**

**Date:** Oct 26, 1977  
**Job No.:** Sub-44  
**Location:** Kealii Area, Korea

**Customer:** Kip National Resource

---

**Driller:** Richard Brown  
**Hrs.:** 10  
**Rig:** 36  
**Helper:** Earl Cherry  
**Hrs.:** 16  
**Gas:**  
**Oil:**  
**Repairs:**

**Arr. Job:** 7 AM  
**L. Job:** 5 PM

---

**Bit-Size:** 18"  
**Type:** Steel

**Casing-Size:** 15"  
**Length in hole:** 6 ft.  
**Amt. Perforated:** 12 ft.

**Depth Start:** 31 ft.  
**Depth Stop:** 43 ft.  
**Feet Drilled:** 12 ft.

**Water Levels, Time:**

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

---

### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Cinder</td>
<td>Casing, Some Job Big</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:**


---

**Signed:** Richard Brown  
**Date:** Oct 26, 1977
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

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

**Date** Oct. 25 1977  **Job No.** 8447-44  **Hole No.** #1  **Elevation** 880 ft.

**Customer** Dept. Natural Resources  **Location** Kea-Area Kona

**Driller** Richard Bourne  **10 Hrs.**  **Rig** 36-L

**Helper** Earl Ching  **10 Hrs.**  **Gas**  **Oil**

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

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

**Bit-Size** 18”  **Type** Star

**Casing-Size** 18” in., Length in hole __ ft. __ in., Amt. Perforated __ ft. __ in.

**Depth Start** 20 ft., **Depth Stop** 31 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>20</td>
<td>Clincher Wash</td>
<td>Coming out, going</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Same, Clincher</td>
<td>Clean</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Clincher</td>
<td>Coming, some casing using</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td></td>
<td>Cement to hold some?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cutting out no cuttings</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No samples.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** Had to repack rig, Earl went after fuel and also having trouble with dry line, stake & tools, work out of cutting.

**Signed** Richard Bourne  **Date** Oct. 25 1977
Date: Oct. 24, 1977  
Job No.: 8444-44  
Hole No.: #1  
Elevation: 880 ft.

Customer: Dept. Natural Resources  
Location: Kea'au, Island of Kona

Driller: Richard Bourne  
Worked: 10 Hrs.  
Rig: #6

 Helper: Earl Ching  
Worked: 10 Hrs.  
Gas:  
Oil:  
Repairs:  
Arv. Job:  
Lv. Job:  
Worked: Hrs.  
Or. No.: 

Bit-Size: 18"  
Casing-Size: 18" in., Length in hole: 6 ft.  
Depth Start: 0 ft., Depth Stop: 20 ft.  
Feet Drilled: 20 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</td>
<td>Bubinga Chisoe</td>
<td>Chisoe bit Mukak</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bubinga Chisoe</td>
<td>Chisoe hard to Mine same big</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>contract wall to get Contractor straight</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Bubinga Chan poha</td>
<td>Chisoe some Chisoe</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Hard A H</td>
<td>No Cuttings</td>
<td>J</td>
</tr>
<tr>
<td>18</td>
<td>Andue Chisoe</td>
<td>Some Alvine in Same</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>Sand up hole house. No cuttings</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Went all mud & cuttis at 17 ft can't hold mud or water in hole No sampling.

Signed: Richard Bourne  
Date: Oct. 24, 1977