Raptor Residence Well
Well No. 4959-20

1 MILE RADIUS

Well Location
### Data Input

<table>
<thead>
<tr>
<th>Data Input</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Number</td>
<td>4959-20</td>
</tr>
<tr>
<td>Well Name</td>
<td>Raptor Residence Salt</td>
</tr>
<tr>
<td>Ground Elevation</td>
<td>4</td>
</tr>
<tr>
<td>Cement Grout</td>
<td>53</td>
</tr>
<tr>
<td>Grouting Method</td>
<td>other</td>
</tr>
<tr>
<td>Hole Diameter</td>
<td>14</td>
</tr>
<tr>
<td>Total Depth</td>
<td>65</td>
</tr>
<tr>
<td>Estimated Head</td>
<td>0.5</td>
</tr>
<tr>
<td>Public Water Supply Well?</td>
<td>no</td>
</tr>
<tr>
<td>Solid Casing Material</td>
<td>pvc plastic</td>
</tr>
<tr>
<td>Solid Casing Specification</td>
<td>Schedule 40</td>
</tr>
<tr>
<td>Solid Casing Length</td>
<td>55</td>
</tr>
<tr>
<td>Solid Casing Diameter</td>
<td>8</td>
</tr>
<tr>
<td>Solid Casing Wall Thickness</td>
<td></td>
</tr>
<tr>
<td>Open Casing Length</td>
<td>10</td>
</tr>
</tbody>
</table>

### Results

<table>
<thead>
<tr>
<th>Results</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Depth</td>
<td></td>
</tr>
<tr>
<td>Theoretical Thickness of Aquifer</td>
<td>20.5</td>
</tr>
<tr>
<td>1/4 Aquifer Thickness</td>
<td>5.125</td>
</tr>
<tr>
<td>Depth of Well below Sea Level</td>
<td>-61</td>
</tr>
<tr>
<td>Well Casing</td>
<td></td>
</tr>
<tr>
<td>Minimum Wall Thickness</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>pvc plastic</td>
</tr>
<tr>
<td>Minimum Thickness per standards</td>
<td>no requirement</td>
</tr>
<tr>
<td>Wall Thickness Provided</td>
<td>0</td>
</tr>
<tr>
<td>Minimum Length of Solid Casing</td>
<td></td>
</tr>
<tr>
<td>90% of ground to top of aquifer</td>
<td>3.15</td>
</tr>
<tr>
<td>Length of Solid casing provided</td>
<td>55</td>
</tr>
<tr>
<td>Casing Material</td>
<td>Schedule 40</td>
</tr>
<tr>
<td>for pvc only - check for 200 limit</td>
<td>in compliance</td>
</tr>
<tr>
<td>Annular Space</td>
<td></td>
</tr>
<tr>
<td>Depth of Grouting</td>
<td>2.45</td>
</tr>
<tr>
<td>Depth of Grouting provided</td>
<td>63</td>
</tr>
<tr>
<td>Minimum Annular Space required</td>
<td>2</td>
</tr>
<tr>
<td>Thickness of Annular Space</td>
<td>3</td>
</tr>
</tbody>
</table>

Section 2.2: too deep
Section 2.4(b): too small
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
WELL COMPLETION REPORT - PART I
Well Construction

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96808. The Commission may not accept incomplete reports. This form shall be submitted within 90 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 808-587-2238. For updates to this form or additional information, please visit our website at http://www.hawaii.gov/dlnr/cwrm/

1. State Well No.: 4959-20  Well Name: Raptor Residence Well  Island: Hawaii
2. Address: 72-2777 Uluweuwe alau Place  Tax Map Key: 7-2-017.001
3. Drilling Company: Couch Well Drilling, PO Box 1329, Kealakekua, HI 96750
4. Drilling method used during construction:  ✔ Rotary  ☐ Percussion  ☐ Other (describe)
5. Date Well Construction (drilled, cased, grouted) completed: 7/22/03  Attach Driller's Log (1/25/93 DL Form)

6. Was the subject well cored?  ✔ Yes  ☐ No
7. Initial water-level encountered: 4 ft. below ground  Date and time of measurement: 07/20/03 9:00 am
8. Step-Drawdown Test completed?  ✔ Yes  Attach Step-Drawdown Test form (12/17/97 SDPTD Form)
9. Constant Rate Aquifer Test completed?  ✔ Yes  Attach Constant Rate Aquifer Test form (12/17/97 CRPTD Form)

Parameters prior to pump test:
10. Water-level: 1.5 ft. above msl  Date and time of measurement: 7/23/03 15:00
11. Chloride: 17,119 ppm  Date and time of sampling: 7/23/03 15:00
12. Temperature: 77 °F  Date and time of measurement: 7/23/03 15:00

13. Fill in the as-built section on the other side of this sheet.
15. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)
16. Remarks:

<table>
<thead>
<tr>
<th>Licensed Driller (print)</th>
<th>Rodney Couch</th>
<th>C-57 Lic. No.</th>
<th>C-23094</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
<td></td>
<td></td>
<td>Date 8/8/03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surveyor (print)</th>
<th>Donald C. McIntosh</th>
<th>L.P.L.S. Lic. No.</th>
<th>4968-HAWAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>please attach stamped report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td></td>
<td>McIntosh</td>
<td>Date 9/20/03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Permittee (print)</th>
<th>RAPTOR RESIDENCE, LLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>10/30/03</td>
</tr>
</tbody>
</table>
LOCATION OF WELL

PLOT PLAN
(Provide Latitude and Longitude of well referenced to NAVD 88 to nearest second)

SCALE: 1"=100'

N 19'47"13.8"
W 155'57"41.2"

WELL EA059.20 RAPID RESIDENCE

Well Elevation

Benchmark Elevation 5.01'
5.93'
Concrete Pad

Benchmark reference control point

FLANGE BOLT ON FIRE HYDRANT
(main Kukio Control Pt)
ELEVATION @ 9.70 FT
MSL

Surveyor's stamp and signature

This work was prepared by
or under my direct supervision.

Donald C. Hackathorn
Licensed Professional Land Surveyor
STATE OF HAWAII CERT. NO. LS-0568

WCR1 Form 11/12/02 Page 4 of 4
<table>
<thead>
<tr>
<th>Date</th>
<th>Volume Control Tank</th>
<th>Diameter of Meters (inches)</th>
<th>Sedimentation Size (% of sand in filter)</th>
<th>Pumping Rate (gallons/min)</th>
<th>EC</th>
<th>CT</th>
<th>EC in mhos</th>
<th>Temperatures</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.42</td>
<td>1.7</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.66</td>
<td>2.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.75</td>
<td>2.45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.75</td>
<td>2.45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.75</td>
<td>2.45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.77</td>
<td>2.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.77</td>
<td>2.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.77</td>
<td>2.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.77</td>
<td>2.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.83</td>
<td>2.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.83</td>
<td>2.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.85</td>
<td>2.55</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.85</td>
<td>2.55</td>
<td>200</td>
<td></td>
<td>47.6</td>
<td>30.2</td>
<td>26</td>
<td>salinity in ppt</td>
<td></td>
</tr>
</tbody>
</table>

EC measured as

<table>
<thead>
<tr>
<th>Date</th>
<th>Volume Control Tank</th>
<th>Diameter of Meters (inches)</th>
<th>Sedimentation Size (% of sand in filter)</th>
<th>Pumping Rate (gallons/min)</th>
<th>EC</th>
<th>CT</th>
<th>EC in mhos</th>
<th>Temperatures</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.41</td>
<td>3.11</td>
<td>285</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.41</td>
<td>3.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5</td>
<td>3.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5</td>
<td>3.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5</td>
<td>3.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5</td>
<td>3.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.52</td>
<td>3.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.52</td>
<td>3.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.52</td>
<td>3.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.52</td>
<td>3.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.56</td>
<td>3.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.58</td>
<td>3.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.62</td>
<td>3.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.62</td>
<td>3.32</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.62</td>
<td>3.32</td>
<td>285</td>
<td></td>
<td>48.9</td>
<td>31.5</td>
<td>25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

37584 flow meter at end
<table>
<thead>
<tr>
<th>Time (min)</th>
<th>Pump Test</th>
<th>Drawdown (gpm)</th>
<th>Recovery (gpm)</th>
<th>Time (min)</th>
<th>Drawdown (gpm)</th>
<th>Recovery (gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>4.62</td>
<td>0.32</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1.5</td>
<td>1.5</td>
<td>4.58</td>
<td>0.28</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>4.54</td>
<td>0.24</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td>4.58</td>
<td>0.28</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>4.58</td>
<td>0.26</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>4.58</td>
<td>0.26</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>4.58</td>
<td>0.26</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>4.58</td>
<td>0.26</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>4.62</td>
<td>0.32</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>4.62</td>
<td>0.32</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>4.62</td>
<td>0.32</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td>4.62</td>
<td>0.32</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>4.62</td>
<td>0.32</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td>4.66</td>
<td>0.36</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>4.66</td>
<td>0.36</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td>4.66</td>
<td>0.36</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>4.71</td>
<td>0.41</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>60</td>
<td>60</td>
<td>4.71</td>
<td>0.41</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>70</td>
<td>70</td>
<td>4.75</td>
<td>0.45</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>80</td>
<td></td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>90</td>
<td></td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td></td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>150</td>
<td></td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>200</td>
<td></td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>250</td>
<td></td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**END TEST** Date: 7/24/03  Time of day: 18:40

**ADDITIONAL REMARKS:**
High tide 1:25 pm; low tide 9:30 pm, 0.5

Person in charge of pump test (print): JoAnn Romano, Geologist

Signature: [Signature]

The signature above signifies that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.

END TEST Date: 7/24/03  Time of day: 18:40

**ADDITIONAL REMARKS:**
High tide 1:25 pm; low tide 9:30 pm, 0.5

Person in charge of pump test (print): JoAnn Romano, Geologist

Signature: [Signature]

The signature above signifies that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
**RATED RATE PUMP TEST DATA**

**Pumped Well No. 4959-20**

**Pumped Well Name** Raptor Residence

**Target Q** 300 gpm

**Observation Well No.**

**Distance between Obs. & Pumped Well** ft.

**Reference pt. for depth to water** (to) 7 ft. msl

**Static Water Level @ start of test** 5.5 ft. msl

**Water level measurements by:**
- ☐ electrical sounder
- ☐ pressure transducer
- ☐ airline

**START TEST** Date: 07/25/03  
**Time of day:** 7:00 am

**Flow Meter Reading Start:** 37584.0  
**galons**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Flow (gpm)</th>
<th>EC (mhos)</th>
<th>Cl (ppt)</th>
<th>Rectangular</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0.00</td>
<td>49</td>
<td>32 25</td>
<td></td>
</tr>
<tr>
<td>-45</td>
<td>45</td>
<td>5.50</td>
<td></td>
<td></td>
<td>Start test</td>
</tr>
<tr>
<td>-30</td>
<td>30</td>
<td>5.50</td>
<td></td>
<td></td>
<td>EC in mhos</td>
</tr>
<tr>
<td>-15</td>
<td>15</td>
<td>5.50</td>
<td></td>
<td></td>
<td>Cl- in salinity (ppt)</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0.00</td>
<td>32 25</td>
<td></td>
<td>Start pump/Cl taken</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>6.5</td>
<td>3.08</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>1.5</td>
<td>8.83</td>
<td>3.33</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>8.63</td>
<td>3.33</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td>8.75</td>
<td>3.25</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>8.71</td>
<td>3.21</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>8.71</td>
<td>3.21</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>8.71</td>
<td>3.21</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>8.71</td>
<td>3.21</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>8.71</td>
<td>3.21</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>8.71</td>
<td>3.21</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>8.75</td>
<td>3.25</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td>8.75</td>
<td>3.25</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>8.75</td>
<td>3.25</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td>8.75</td>
<td>3.25</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>8.75</td>
<td>3.25</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td>8.75</td>
<td>3.25</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>8.75</td>
<td>3.25</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>60</td>
<td>8.75</td>
<td>3.25</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>70</td>
<td>8.75</td>
<td>3.25</td>
<td>290</td>
<td></td>
</tr>
</tbody>
</table>

Note: 32 (ppt) salinity = 17761 mg/l Cl-
<table>
<thead>
<tr>
<th>Time (min)</th>
<th>Flow Rate (gpm)</th>
<th>Chloride (mg/l)</th>
<th>Sample Taken</th>
<th>Flow Rate (gpm)</th>
<th>Chloride (mg/l)</th>
<th>Sample Taken</th>
<th>Flow Rate (gpm)</th>
<th>Chloride (mg/l)</th>
<th>Sample Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>80</td>
<td>8.75</td>
<td></td>
<td>290</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>90</td>
<td>8.71</td>
<td></td>
<td>290</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>100</td>
<td>8.71</td>
<td></td>
<td>290</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>150</td>
<td>8.58</td>
<td></td>
<td>290</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>200</td>
<td>8.50</td>
<td></td>
<td>290</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>250</td>
<td>8.33</td>
<td></td>
<td>290</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300</td>
<td>8.16</td>
<td></td>
<td>290</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td>400</td>
<td>7.88</td>
<td></td>
<td>290</td>
<td></td>
<td>48.8</td>
<td>31.2</td>
<td>26</td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>500</td>
<td>500</td>
<td>7.77</td>
<td></td>
<td>290</td>
<td></td>
<td>47.9</td>
<td>30.9</td>
<td>25.8</td>
<td></td>
</tr>
<tr>
<td>600</td>
<td>600</td>
<td>8.0</td>
<td></td>
<td>290</td>
<td></td>
<td>48.3</td>
<td>30.8</td>
<td>25.9</td>
<td></td>
</tr>
<tr>
<td>700</td>
<td>700</td>
<td>8.12</td>
<td></td>
<td>290</td>
<td></td>
<td>48.35</td>
<td>31.5</td>
<td>24.9</td>
<td></td>
</tr>
<tr>
<td>800</td>
<td>800</td>
<td>8.33</td>
<td></td>
<td>290</td>
<td></td>
<td>48.8</td>
<td>31.8</td>
<td>24.4</td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>900</td>
<td>900</td>
<td>8.5</td>
<td></td>
<td>280</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td>1000</td>
<td>8.33</td>
<td></td>
<td>280</td>
<td></td>
<td>48.22</td>
<td>31.6</td>
<td>24.3</td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>1300</td>
<td>1300</td>
<td>8.58</td>
<td></td>
<td>280</td>
<td></td>
<td>48.24</td>
<td>31.4</td>
<td>24.2</td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>1360</td>
<td>1360</td>
<td>8.75</td>
<td></td>
<td>280</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2500</td>
<td>1380</td>
<td>8.75</td>
<td></td>
<td>280</td>
<td></td>
<td>48.3</td>
<td>31.6</td>
<td>24.8</td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>3000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>5000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>6000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>7000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>8000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>9000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ct sample taken</td>
</tr>
<tr>
<td>10000</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Chloride sampling required
2 Use same ending drawdown figure as start for recovery

Max possible duration, water level or quality did not stabilize for any 24 period
Begin recovery data next page
Flow meter reading at end of pumped period: 41817 000 gals

AVE Q 206.7
<table>
<thead>
<tr>
<th>Time</th>
<th>Flow</th>
<th>Speed</th>
<th>Pumping</th>
<th>Elapsed</th>
<th>% Water</th>
<th>Water</th>
<th>Recovery</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>6.75</td>
<td>1.25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>1.5</td>
<td>6.58</td>
<td>1.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>5.58</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td>5.58</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>5.58</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>5.58</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>5.58</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>5.58</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>5.58</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>5.58</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>5.58</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td>5.62</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>5.62</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td>5.62</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>5.62</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td>5.62</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>5.62</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>60</td>
<td>5.62</td>
<td>0.12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>70</td>
<td>5.66</td>
<td>0.16</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>80</td>
<td>5.66</td>
<td>0.16</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

END TEST Date: 7/26/03  Time of day: 9:30 am

ADDITIONAL REMARKS: 7/25/03 high tide 2:02 pm 2'2", low 8:15 am 0'. 7/26/03 high tide 1:25 am 0'. low 6:57 am 0'.

Person in charge of pump test (print): JoAnn Romano, Geologist

Signature:

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
WELL NUMBER: 4909-20

DRILLER’S LOG (7/30/99 DL Form)

<table>
<thead>
<tr>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 18</td>
<td>Fill-boulders to gravel</td>
<td>7/20/03</td>
</tr>
<tr>
<td>18 to 23</td>
<td>Gray basalt</td>
<td>7/21/03</td>
</tr>
<tr>
<td>23 to 33</td>
<td>Gray dense, basalt</td>
<td>7/21/03</td>
</tr>
<tr>
<td>33 to 46</td>
<td>Brown basalt</td>
<td>7/22/03</td>
</tr>
<tr>
<td>46 to 50</td>
<td>Gray, medium dense, basalt</td>
<td>7/22/03</td>
</tr>
<tr>
<td>50 to 57</td>
<td>Grades to broken clinker</td>
<td>7/23/03</td>
</tr>
<tr>
<td>57 to 60</td>
<td>Brown, dense, basalt</td>
<td>7/23/03</td>
</tr>
<tr>
<td>60 to 67</td>
<td>Brown, broken basalt</td>
<td>7/23/03</td>
</tr>
</tbody>
</table>

Remarks:
Water level 7/22/03 = 2.5' from ground surface
Water level 7/23/03 = 3.5' from ground surface
Self-Priming Pumps by Pacer

Pacer pumps are an excellent choice for saltwater applications requiring self-priming. They feature 316 stainless steel shafts, EPDM seals, lined rotors, and all stainless steel bearings. Pumps include all fasteners, gaskets, and the motor coupling guard (except pedestal mounted models). Mounting and alignment available. All motors listed are TEFC single phase Specify 240V except Pedestal Mount. Includes pre-assembly on baseplate, flexible coupling only. All units except "P" styles include motors. Maximum priming suction lift: 25' on 450 RPM. 15' on 1750 RPM

<table>
<thead>
<tr>
<th>Style</th>
<th>Recommended HP</th>
<th>Motor HP</th>
<th>Phase</th>
<th>Maximum Flow</th>
<th>Maximum RPM</th>
<th>Discharge &amp; Section</th>
<th>Ship Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRD0P</td>
<td>0.5</td>
<td></td>
<td>1</td>
<td>80</td>
<td>1750</td>
<td>1/2&quot;</td>
<td>18 lbs</td>
</tr>
<tr>
<td>PRD0C</td>
<td>False</td>
<td></td>
<td></td>
<td>80</td>
<td>1750</td>
<td>1/2&quot;</td>
<td>18 lbs</td>
</tr>
<tr>
<td>PRP0P</td>
<td>1.0</td>
<td></td>
<td>1</td>
<td>120</td>
<td>1750</td>
<td>2&quot;</td>
<td>18 lbs</td>
</tr>
<tr>
<td>PRP0C</td>
<td>False</td>
<td></td>
<td></td>
<td>120</td>
<td>1750</td>
<td>2&quot;</td>
<td>18 lbs</td>
</tr>
<tr>
<td>PRP0F</td>
<td>2.0</td>
<td></td>
<td></td>
<td>140</td>
<td>3450</td>
<td>2&quot;</td>
<td>45 lbs</td>
</tr>
<tr>
<td>PRP1F</td>
<td>Flexible*</td>
<td></td>
<td></td>
<td>240</td>
<td>3450</td>
<td>2&quot;</td>
<td>75 lbs</td>
</tr>
<tr>
<td>PRP2F</td>
<td>Flexible*</td>
<td></td>
<td></td>
<td>280</td>
<td>3450</td>
<td>2&quot;</td>
<td>75 lbs</td>
</tr>
<tr>
<td>PRP3F</td>
<td>Flexible*</td>
<td></td>
<td></td>
<td>320</td>
<td>3450</td>
<td>2&quot;</td>
<td>75 lbs</td>
</tr>
<tr>
<td>PRP4F</td>
<td>Flexible*</td>
<td></td>
<td></td>
<td>360</td>
<td>3450</td>
<td>2&quot;</td>
<td>75 lbs</td>
</tr>
<tr>
<td>PRP5F</td>
<td>Flexible*</td>
<td></td>
<td></td>
<td>400</td>
<td>3450</td>
<td>2&quot;</td>
<td>75 lbs</td>
</tr>
</tbody>
</table>

* Includes pre-assembly on baseplate, flexible coupling only. All units except "P" styles include motors. Maximum priming suction lift: 25' on 450 RPM; 15' on 1730 RPM.

Centrifugal Pumps

Low, Medium and High Head

Looking for good medium head pumps? These high performance pumps are molded out of glass-filled Noryl®. These pumps are “flooded” with a saltwater seal that prevents water from contacting any metal parts, making the pump saltwater compatible. All pumps come with stainless steel hardware. "P" power cord (PS2 through PS4 models only) Inlet/outlet connections are 1 1/2" NPT. All pumps, 450 RPM, TEFC Baldor motors are slightly oversized for the pumps, resulting in a cool-running, long-lived, reliable pump.

REMARKS:

KANNULAR is estimated by fitting simulated drawdowns to measured drawdowns in a secondary plot. A reasonable storage value must be assigned by the user because storage and KANNULAR cannot be estimated independently. The estimate of T is not affected by changes in estimates of storage and KANNULAR.
WELL ID: Raptor Residence

[Graph showing discharge in GPM over time]

[Graph showing drawdown in feet over time]
<table>
<thead>
<tr>
<th>Entry</th>
<th>Time, Hr:Min:Sec</th>
<th>Water Level, Feet</th>
<th>Entry</th>
<th>Time, Hr:Min:Sec</th>
<th>Water Level, Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0:00:00</td>
<td>0.00</td>
<td>51</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>2</td>
<td>0:01:00</td>
<td>1.00</td>
<td>52</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>3</td>
<td>0:02:00</td>
<td>1.20</td>
<td>53</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>4</td>
<td>0:05:00</td>
<td>1.20</td>
<td>54</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>5</td>
<td>0:10:00</td>
<td>1.28</td>
<td>55</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>6</td>
<td>0:15:00</td>
<td>1.28</td>
<td>56</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>7</td>
<td>0:25:00</td>
<td>1.30</td>
<td>57</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>8</td>
<td>0:30:00</td>
<td>1.30</td>
<td>58</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>9</td>
<td>0:31:00</td>
<td>1.70</td>
<td>59</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>10</td>
<td>0:32:00</td>
<td>2.45</td>
<td>60</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>11</td>
<td>0:35:00</td>
<td>2.47</td>
<td>61</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>12</td>
<td>0:40:00</td>
<td>2.47</td>
<td>62</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>13</td>
<td>0:45:00</td>
<td>2.53</td>
<td>63</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>14</td>
<td>0:55:00</td>
<td>2.55</td>
<td>64</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>15</td>
<td>1:00:00</td>
<td>2.55</td>
<td>65</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>16</td>
<td>1:01:00</td>
<td>3.11</td>
<td>66</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>17</td>
<td>1:02:00</td>
<td>3.20</td>
<td>67</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>18</td>
<td>1:05:00</td>
<td>3.20</td>
<td>68</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>19</td>
<td>1:10:00</td>
<td>3.26</td>
<td>69</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>20</td>
<td>1:15:00</td>
<td>3.28</td>
<td>70</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>21</td>
<td>1:20:00</td>
<td>3.32</td>
<td>71</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>22</td>
<td>1:25:00</td>
<td>3.32</td>
<td>72</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>23</td>
<td>1:30:00</td>
<td>3.32</td>
<td>73</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>24</td>
<td>1:30:00</td>
<td>0.00</td>
<td>74</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>25</td>
<td>1:30:00</td>
<td>0.00</td>
<td>75</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>26</td>
<td>1:30:00</td>
<td>0.00</td>
<td>76</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>27</td>
<td>1:30:00</td>
<td>0.00</td>
<td>77</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>28</td>
<td>1:30:00</td>
<td>0.00</td>
<td>78</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>29</td>
<td>1:30:00</td>
<td>0.00</td>
<td>79</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>30</td>
<td>1:30:00</td>
<td>0.00</td>
<td>80</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>31</td>
<td>1:30:00</td>
<td>0.00</td>
<td>81</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>32</td>
<td>1:30:00</td>
<td>0.00</td>
<td>82</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>33</td>
<td>1:30:00</td>
<td>0.00</td>
<td>83</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>34</td>
<td>1:30:00</td>
<td>0.00</td>
<td>84</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>35</td>
<td>1:30:00</td>
<td>0.00</td>
<td>85</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>36</td>
<td>1:30:00</td>
<td>0.00</td>
<td>86</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>37</td>
<td>1:30:00</td>
<td>0.00</td>
<td>87</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>38</td>
<td>1:30:00</td>
<td>0.00</td>
<td>88</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>39</td>
<td>1:30:00</td>
<td>0.00</td>
<td>89</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>40</td>
<td>1:30:00</td>
<td>0.00</td>
<td>90</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>41</td>
<td>1:30:00</td>
<td>0.00</td>
<td>91</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>42</td>
<td>1:30:00</td>
<td>0.00</td>
<td>92</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>43</td>
<td>1:30:00</td>
<td>0.00</td>
<td>93</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>44</td>
<td>1:30:00</td>
<td>0.00</td>
<td>94</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>45</td>
<td>1:30:00</td>
<td>0.00</td>
<td>95</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>46</td>
<td>1:30:00</td>
<td>0.00</td>
<td>96</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>47</td>
<td>1:30:00</td>
<td>0.00</td>
<td>97</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>48</td>
<td>1:30:00</td>
<td>0.00</td>
<td>98</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>49</td>
<td>1:30:00</td>
<td>0.00</td>
<td>99</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
<tr>
<td>50</td>
<td>1:30:00</td>
<td>0.00</td>
<td>100</td>
<td>1:30:00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
## Commission on Water Resource Management

### Route Slip for Permit Issuance

**FROM:** Ryan  
**DATE:**  
**SUSPENSE DATE:**

<table>
<thead>
<tr>
<th>TO:</th>
<th>INIT.</th>
<th>TO:</th>
<th>INIT.</th>
<th>FOR:</th>
<th>PLEASE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAKALEA, P.</td>
<td></td>
<td>LAU, E.</td>
<td></td>
<td>3</td>
<td>Approval</td>
</tr>
<tr>
<td>BAUER, G.</td>
<td></td>
<td>MATHIAS, T.</td>
<td></td>
<td>3</td>
<td>Signature</td>
</tr>
<tr>
<td>CHING, F.</td>
<td></td>
<td>NAKAMA, L.</td>
<td></td>
<td>4</td>
<td>Information</td>
</tr>
<tr>
<td>DANBARA, S.</td>
<td></td>
<td>NAKANO, D.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FUJII, N.</td>
<td></td>
<td>OHYE, M.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOODING, K.</td>
<td></td>
<td>SAUNDERS, E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HARDY, R.</td>
<td></td>
<td>SUBIA, S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIGA, D.</td>
<td></td>
<td>SWANSON, S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICE, C.</td>
<td></td>
<td>UYENO, D.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMATA, R.</td>
<td></td>
<td>YODA, K.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KUNIMURA, I.</td>
<td></td>
<td>YOSHINAGA, M.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Wells Number and Name

- **Well Number:** 4953-20  
- **Well Name:** Registered Residents Salt WELL

**WELL CONSTRUCTION**

- **Attachments for Well Construction Permit:**
  1. Cover Letter
  2. Permit (2x)
  3. SDWB
  4. WWB
  5. CBW
  6. HEER
  7. LD
  8. HP
  9. Pump Test
  10. WCR I Form
  11. Well Check Printout

**References:**

- Saltwater Well

**Comments:**

- TO BE SENT TO APPLICANT
- FOR OFFICE USE ONLY

**PUMP INSTALLATION**

- **Attachments for Pump Installation Permit:**
  1. Cover Letter
  2. Permit (2x)
  3. SDWB
  4. WWB
  5. CBW
  6. HEER
  7. LD
  8. HP
  9. WCR II Form
  10. WUR Form

**References:**

- TO BE SENT TO APPLICANT
- FOR OFFICE USE ONLY

**Xerox copies**

- 1 Review & Comment
- 2 Type Final
- 3 Approval
- 4 Information
- 5 File

**Review & Action:**

- Take Action

**Type Draft:**

- Type Draft
June 9, 2003

Ref: 4959-20.wcp

Mr. David Chai
Ryan Residence LLC
68-1879 Pakanu St.
Waikoloa, HI 96738

Dear Mr. Chai:

Well Construction Permit
Raptor Residence Well (Well No. 4959-20)

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s) that authorize well construction activities but excludes installation work for your permanent pump. As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 13:

**Special Conditions**

1. Attached for your information is a copy of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities.

2. The annular space shall be compliant with Section 2.4c of the Hawaii Well Construction and Pump Installation Standards.

This permit does not authorize work for your permanent pump installation. Approval and issuance of your pump installation permit is contingent upon completed application and information provided to and accepted by Commission staff as required in the Well Construction & Pump Installation Standards (1/23/97) and any special conditions performed under this permit. However, a permanent pump may be installed prior to the permanent pump installation permit issuance in accordance with the Commission's April 15, 1998 Declaratory Ruling No. DEC-ADM98-G5, which states that:

"Permanent pump installation for capacities between 0-70 gpm and where the proposed use is for private individual needs in non-ground-water management areas may be allowed prior to the final pump installation permit issuance. When required as a condition of the well construction permit, subsequent pumping tests shall validate the acceptability of the permanent pump. The permanent pump installed prior to final pump installation permit issuance is subject to removal if the testing shows that a smaller pump is required to reduce the potential of affecting neighboring wells and localized upconing at the applicant's well."

If you qualify and wish to take advantage of this ruling, please include a written request to install the permanent pump prior to final pump installation permit issuance when you return to us your signed well construction permit.

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

**IMPORTANT** - Drilling work shall not commence until a fully signed permit is returned to the Commission. Please provide all the information in this packet to your well drilling contractor. The permittee, well operator, and/or well owner are responsible for all conditions of the permit. This includes ensuring that the well construction contractor, or other party who constructs the well(s), submits a completed Part I of the Well Completion Report form (enclosed) within sixty (60) days after the well construction work is completed. Be advised that you may be subject to fines of up to $1000 per day for any violations of your permit conditions starting from the permit approval date.

If you have any questions, please call Ryan Imata of the Commission staff at 587-0255 or toll-free at 974-4000 (Hawaii), 274-3141 (Kauai), 984-2400 (Maui), or 1-800-468-4644 (Lanai & Molokai), extension 70255.

Sincerely,

Peter T. Young
Chairperson

Enclosures
**WELL CONSTRUCTION PERMIT**

**Raptor Residence Well, Well No. 4959-20**

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of Raptor Residence Well (Well No. 4959-20) at 72-2777 Uluweau Akau Pl., Hawaii, TMK 7-2-017: 001, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1½-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pump testing worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

3. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson.

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

5. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee, well operator, and/or well owner shall stop work and contact the Department's Historic Preservation immediately.

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

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

9. The well construction permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997, HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

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

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

12. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

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

Date of Approval: **May 20, 2003**

Expiration Date: **May 20, 2005**

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: ____________________________ Date: __________________

Printed Name: ________________________ Firm or Title: ________________________

Driller's Signature: ________________________ C-57 License #: ____________________ Date: __________________

Printed Name: ________________________ Firm or Title: ________________________

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachment

USGS
Department of Health, Safe Drinking Water, Wastewater, and Clean Water Branches
Hawaii Department of Water Supply

PETER T. YOUNG, Chairperson

Commission on Water Resource Management
Note: This permit shall be prominently displayed at the site until the work is completed.

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled 'Water Use, Wells, and Stream Diversion Works', this document permits the construction and testing of Raptor Residence Well (Well No. 4959-20) at 72-2777 Uluweuwe Akau Pl., Hawaii, TMK 7-20-01, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect said activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1/4-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pump testing worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

3. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson.

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

5. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee, well operator, and/or well owner shall stop work and contact the Department's Historic Preservation immediately.

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

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

9. The well construction permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997; HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

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

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

12. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assignees, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

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

Date of Approval: May 20, 2003
Expiration Date: May 20, 2005

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: Date: 6/16/03
Printed Name: MARC R. LISKER
Firm or Title: MANAGER

Driller's Signature: Date: 6/28/03
Printed Name: Rodney Couch
Firm or Title: Couch Well Drilling

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachment:
c: USGS
   Department of Health Safe Drinking Water, Wastewater, and Clean Water Branches
   Hawaii Department of Water Supply
**SECTION 1: WELL LOCATION INFORMATION**

<table>
<thead>
<tr>
<th>Island</th>
<th>#/N/A</th>
<th>Proposed Use</th>
<th>Proposed Withdrawal</th>
<th>System Sustainable Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquifer System</td>
<td>#/N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquifer Sector</td>
<td>#/N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 2: WELL SECTION DATA** *(enter data in grey cells only)*

<table>
<thead>
<tr>
<th>Elevation at top of casing</th>
<th>Solid Casing Material</th>
<th>Cement Grout</th>
<th>Rock Packing</th>
<th>Hole Diameter</th>
<th>Total Depth</th>
<th>Estimated Head</th>
<th>Calculated Aquifer Thickness</th>
<th>County Water Supply (Y/N ?)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PVC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.5 ft., m.s.l.</td>
<td>20.5 ft.</td>
<td>NO</td>
</tr>
</tbody>
</table>

**SECTION 3: CHECKLIST** *(values to check are shaded)*

- **Well Depth**
  - Theoretical Thickness of Aquifer: 20.5 ft.
  - 1/4 Aquifer Thickness: 5.125 ft.
  - Depth of Well below Sea Level: 50.34 ft.

- **Well Casing**
  - Minimum Wall Thickness:
    - Material: PVC
    - County or Non-County: non-county
    - Minimum Thickness per standards: 0.322 in.
    - Wall Thickness Provided: 0.000 in.
- Minimum Length of Solid Casing: 3.744 ft.
- Length of solid casing Provided: 45 ft.
- Casing Material: Sch 40

- **Annular Space**
  - Depth of Grouting: 2.912 ft.
  - Calculated Depth of Grouting: 2.912 ft.
  - Depth of Grouting provided: 4 ft.
  - Thickness of Annular Space: 3 in.
TO: Holly McEldowney, Acting Administrator
Historic Preservation

FROM: Ernest Y.W. Lau, Deputy Director
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
Raptor Residence Well (Well No. 4959-20)

May 6, 2003

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by May 30, 2003. If we do not receive comments or a request for additional review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

Response:

[ ] There may be areas in the vicinity of the well site that contain subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal.

[ ] Other relevant Historic Preservation rules/regulations, information, or recommendations are attached.

[X] No objections

[ ] Other comments:

Contact Person: ____________________________ Phone: __________

Signed: ____________________________ Date: 5/30/03
TO: Honorable Chiyome L. Fukino, M.D., Director
dept of Health
Attention: Harold Yee, Wastewater Branch
William Wong, Safe Drinking Water Branch
Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
Alec Wong, Clean Water Branch

FROM: Peter T. Young, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
Raptor Residence Well (Well No. 4959-20)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by May 30, 2003. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RI:ss
Attachment(s)

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-26.

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant's information, a source of possible wastewater contamination [(is)] is not located near the proposed well site (information attached).

[ ] An NPDES permit is required.

[ ] Other relevant DOH rules/regulations, information, or recommendations are attached.

X] No comments/objections

Contact Person: N Kajiwara
Phone: 586-4294

Signed: Oech Kajiwara
Date: 5-23-2003
TO: Honorable Chiyome L. Fukino, M.D., Director
Department of Health
Attention: Harold Yee, Wastewater Branch
William Wong, Safe Drinking Water Branch
Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
Alec Wong, Clean Water Branch

FROM: Peter T. Young, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
Raptor Residence Well (Well No. 4959-20)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by May 30, 2003. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems. §11-20-29.

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant's information, a source of possible wastewater contamination [ ] is [ ] not located near the proposed well site (information attached).

[ ] An NPDES permit is required.

[ ] Other relevant DOH rules/regulations, information, or recommendations are attached.

[ ] No comments/objections

Contact Person: Bill Dong
Phone: 586-4258

Signed: Bill Dong
Date: May 16, 2003
TO:  Honorable Chiyome L. Fukino, M.D.
     Department of Health
     Attention: Harold Yee, Wastewater Branch
               William Wong, Safe Drinking Water Branch
               Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
               Aloc Wong, Clean Water Branch

FROM: Peter T. Young, Chairperson
      Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
         Raptor Residence Well (Well No. 4959-20)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by May 30, 2003. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RESPONSE:

1. This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 29, Rules Relating to Potable Water Systems, §11-20-29.

2. This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the premises owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

3. If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

4. It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

5. For the applicant's information, a source of possible wastewater contamination [ ] is [ ] not located near the proposed well site (information attached).

6. An NPDES permit is required.

7. Other relevant DOH rules/regulations, information, or recommendations are attached.

8. No comments/objections

Contact Person: Dr. Keith Kawaoka
Phone: 586-4249

Signed: Date: 5/12/03

Fax to: Commission on Water Resources Mgt. 587-0219
TO: Honorable Chiyome L. Fukino, M.D., Director  
Department of Health  
Attention: Harold Yee, Wastewater Branch  
William Wong, Safe Drinking Water Branch  
Dr. Keith Kawaoa, Hazardous Evaluation and Emergency Response  
Alec Wong, Clean Water Branch

FROM: Peter T. Young, Chairperson  
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application  
Raptor Residence Well (Well No. 4959-20)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by May 30, 2003. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or twice 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29.

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 16 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initial use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant's information, a source of possible wastewater contamination [ ] is not located near the proposed well site (information attached).

[ ] An NPDES permit is required.

[ ] Other relevant DOH rules/regulations, information, or recommendations are attached.

[ ] No comments/objections

Contact Person: Alec Wong  
Phone: 586-4309  
Signed: Alec Wong  
Date: 5/13/03
The Department of Health, Clean Water Branch has the following comments:

1. For Well-Drilling Activities

Any discharge to State waters of treated process wastewater effluent associated with well drilling activities is regulated by Hawaii Administrative Rules, Title 11, Chapter 55, Appendix I, effective September 22, 1997. Treated process wastewater effluent covered by this general permit includes well drilling slurry, lubricating fluids wastewaters, and well purge wastewaters. This general permit does not cover well pump testing. The applicable Notice of Intent Forms and filing fee shall be submitted at least thirty (30) days before the start of discharge to the Department of Health, Clean Water Branch at 919 Ala Moana Boulevard, Room 301, Honolulu, Hawaii 96814-4920 or P.O. Box 3378, Honolulu, Hawaii 96801-3378. Inquiries may be directed to the Clean Water Branch at (808) 586-4309 or by fax at (808) 586-4352.

2. For Well Pump Testing

The discharger shall take all measures necessary to prevent the discharge of pollutants from entering State waters. Such measures shall include, if necessary, containment of the initial discharge until the discharge is essentially free of pollutants. If the discharge is entering a stream or river bed, best management practices shall be implemented to prevent the discharge from disturbing the clarity of the receiving water. If the discharge is entering a storm drain, the discharger must obtain written permission from the owner of that storm drain prior to discharge. Furthermore, best management practices shall be implemented to prevent the discharge from collecting sediments and other pollutants prior to entering the storm drain.

JS/or
May 6, 2003

TO: Dede Mamiya, Administrator
    Land Division
FROM: Ernest Y.W. Lau, Deputy Director
    Commission on Water Resource Management
SUBJECT: Well Construction/Pump Installation Permit Application
         Raptor Residence Well (Well No. 4959-20)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by May 30, 2003. If we do not receive comments or a request for additional review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RESPONSE:
[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

[xx] A water lease/permit is not required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no. ____________________________.

[xx] This well project requires [ ] does not require a CDUP. If a CDUP is required it [ ] has [ ] has not been approved and [ ] is [ ] is not currently active.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

[xx] Other comments: Original source of private title is Grant 2121 issued prior to statehood in 1959.

Contact Person: Gary Martin Phone: 587-0421

Signed: __________________________ Date: MAY - 9 2003
<table>
<thead>
<tr>
<th>DOCUMENT NO.</th>
<th>SRC/CTR</th>
<th>COST/PROJ</th>
<th>PH/ACT</th>
<th>AMOUNT</th>
<th>NAME/DESCRIPTION (ENTER HERE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>03 326 C.</td>
<td>10260752</td>
<td></td>
<td></td>
<td>(1) 25.00</td>
<td>David Chai</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TOTAL</td>
<td>25.00</td>
</tr>
</tbody>
</table>

REMARKS: LINE (1) Well No. 4959-20
LINE (2)
LINE (3)
LINE (4)
LICENSE SCREEN

[Look up License Type Codes->]
Please click a link listed below to display the other screen.

***** GENERAL LICENSEE *****

LIC ID: CT-23094
NAME: RODNEY J COUCH
ACTIVE/INACTIVE: ACTIVE
TRADE NAME:
STATUS: CURRENT, VALID & IN GOOD STANDING
ENTITY: INDIVIDUAL
ORIG LIC DATE: 4/20/01
CLASS PREFIX: C
RESTRICTION: 
BUSINESS ADDR: 76-6246 ALII DR #409 KAILUA-KONA HI 96740
MAILING ADDR: P O BOX 1329 KEALKEKUA HI 96750
Click here to enter search criteria for prior complaints history ->
For prior complaints and disciplinary history, contact licensing and business information center at (808)587-3295.

<-Back New Search->

EMPLOYEES LIST || EMPLOYERS LIST || INSURANCE/BOND || LICENSE CLASS

Copyright 2002 Professional and Vocational Licensing Division

Hawaii State homepage || DCCA || Professional and Vocational Licensing Division

http://www.ehawaiigov.org/serv/pvl?_a=d&_f=n&lictp=CT&licno=23094&off=&nm=RO... 5/6/2003
## PUBLIC RECORD DATA

<table>
<thead>
<tr>
<th>Taxkey</th>
<th>Subdiv/Condo</th>
<th>Tnr Property Address</th>
<th>Owner/Lessee</th>
<th>Beds</th>
<th>Baths</th>
<th>Land area</th>
<th>Living area</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-7-2-17-1</td>
<td>Kukio Ph 1-A</td>
<td>F</td>
<td>RAPTOR RESIDENCE LLC</td>
<td></td>
<td></td>
<td>2.42 ac</td>
<td></td>
</tr>
</tbody>
</table>

This information has been supplied by third parties and has not been independently verified by Hawaii Information Service and is, therefore, not guaranteed.

http://webrel.hawaiiinformation.com/research/Asp/Functions/Property/search.asp

5/6/2003
May 6, 2003

Mr. Marc Lisker
Raptor Residence LLC
P.O. Box 1036
Honolulu, HI 96806-1036

Dear Mr. Lisker:

Well Construction/Pump Installation Permit Application for Well No. 4959-20

We acknowledge receipt, on April 25, 2003, of your completed Well Construction/Pump Installation permit application and filing fee for the Raptor Residence Well (Well No. 4959-20). You can expect your application to be processed within ninety (90) days from this date.

For your information, the process of constructing a well is normally regulated and permitted in two (2) steps. First, a well construction permit is issued for drilling and testing purposes only. Based upon information provided by you through a Well Completion Report Part 1 (Well Construction), a pump installation permit (upon completed application) may then be issued to authorize pump work. If a pump is installed then a Well Completion Report Part 2 (Pump Installation) is required.

If you have any questions about your permit application, please contact Ryan Imata of the Commission staff at 587-0255 or toll-free at 974-4000 (Hawaii), 274-3141 (Kauai), 984-2400 (Maui), or 1-800-468-4644 (Lanai & Molokai) extension 70255.

Sincerely,

[Signature]
ERNEST Y.W. LAU
Deputy Director

RI:ss
TO: Honorable Chiyome L. Fukino, M.D., Director
Department of Health
Attention: Harold Yee, Wastewater Branch
William Wong, Safe Drinking Water Branch
Dr. Keith Kawaoka, Hazardous Evaluation and Emergency Response
Alec Wong, Clean Water Branch

FROM: Peter T. Young, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
Raptor Residence Well (Well No. 4959-20)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by May 30, 2003. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29.

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant's information, a source of possible wastewater contamination [ ] is not located near the proposed well site (information attached).

[ ] An NPDES permit is required.

[ ] Other relevant DOH rules/regulations, information, or recommendations are attached.

[ ] No comments/objections

Contact Person: ________________________________ Phone: ______________

Signed: ________________________________ Date: _____________
May 6, 2003

TO: Dede Mamiya, Administrator
    Land Division

FROM: Ernest Y.W. Lau, Deputy Director
    Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
    Raptor Residence Well (Well No. 4959-20)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by May 30, 2003. If we do not receive comments or a request for additional review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RESPONSE:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

[ ] A water lease/permit is not required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no. ____________________

[ ] This well project [ ] requires [ ] does not require a COUP. If a CDUP is required it [ ] has [ ] has not been approved and [ ] is [ ] is not currently active.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact Person: ___________________________ Phone: ____________

Signed: ___________________________ Date: ____________
May 6, 2003

TO: Holly McEldowney, Acting Administrator
    Historic Preservation

FROM: Ernest Y.W. Lau, Deputy Director

SUBJECT: Well Construction/Pump Installation Permit Application
          Raptor Residence Well (Well No. 4959-20)

Transmitted for your review and comment is a copy of the captioned Well
Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the
programs, plans, and objectives specific to your division. Please respond by returning this
cover memo form by May 30, 2003. If we do not receive comments or a request for additional
review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions
about this permit application, request additional information, or request additional review time,
please contact Ryan Imata of the Commission staff at 587-0255.

RI:ss
Attachment(s)

RESPONSE:

[ ] There may be areas in the vicinity of the well site that contain subsurface cultural remains such as artifacts,
    burials or concentrations of shells or charcoal.

[ ] Other relevant Historic Preservation rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact Person: ___________________________ Phone: ____________

Signed: ___________________________ Date: ____________
<table>
<thead>
<tr>
<th>Approved Well No.</th>
<th>Well Name</th>
<th>Applicant</th>
<th>Driller</th>
<th>Type</th>
<th>Well Construction Issued</th>
<th>Signed</th>
<th>WCR1</th>
<th>Accept</th>
<th>Pump Installation Issued</th>
<th>Signed</th>
<th>WCR2</th>
<th>Accept</th>
</tr>
</thead>
</table>
Please address questions or comments and permit to:

David Chai
68-1879 Pakanu St.
Waikoloa, HI 96738
808 325-8427 phone
808 325-8471 fax
chaid003@hawaii.rr.com

RECEIVED
COMMISSION ON WATER RESOURCE MANAGEMENT
APR 25 A7: 58
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
APPLICATION FOR PERMIT

Instructions: Please print in ink or type and send completed application to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Application must be accompanied by five copies and a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at 587-0225. For further information and updates to this application form, visit http://www.state.hi.us/dlnr/wrmn.

APPLICANT INFORMATION: (Fill out all three, if applicable, and please check one next to the primary contact)

1. (a) WELL OWNER: Raptor Residence LLC Contact Person: Marc Lisker Phone: 312-303-1648
   Mailing Address: P.O. Box 1036, Honolulu, HI 96804-1036
   Fax: 
   Email: 

(b) LAND OWNER: Raptor Residence LLC Contact Person: Marc Lisker Phone: 312-303-1648
   Mailing Address: P.O. Box 1036, Honolulu, HI 96804-1036
   Fax: 
   Email: 

(c) CONTRACTOR: Couch Well Drilling Contact Person: Rodney Couch Phone: 808-328-1745
   Mailing Address: P.O. Box 1329, Kealakekua, HI 96750
   Fax: 
   Email: 

WELL & PUMP INFORMATION: (Please fill in the diagram on the back of this form.)

2. WELL NAME: Raptor Residence Well
   Address: 72-2777 Ulupuwehu Aku Place, Kealakekua, HI 96750
   Tax Map Key: 72-2-017 001 001
   Plot 
   Section 72-2
   Lot 017
   Cent 01
   
   (a) portion of a 7.5-minute series USGS topographic map (scale 1:24,000) with well location labeled and include the name of the quadrangle.
   (b) property tax map, showing well location referenced to established property boundaries

3. PROPOSED WORK: (check all that apply)
   (c) Construct New Well
   (d) Install New Pump
   (e) Modify Existing Well
   (f) Modify Pump
   (g) Abandon/Seal
   
   *State Well No.: (If unknown, please call Commission at 587-0225)

4. CONSTRUCTION: (check all that apply)
   (a) Drilled
   (b) Dug
   (c) Shaft
   (d) Tunnel
   
   Is this well part of a battery of wells? Yes No (Please describe)

5. PROPOSED PUMPING RATE: 250 gallons per minute

6. PROPOSED USE: (check all that apply)
   (a) Municipal (including hotels, stores, etc.)
   (b) Industrial
   (c) Domestic (individual, non-commercial water system)

   Does this well serve 25 or more people or have 15 or more service connections? Yes No

   (d) Irrigation (crop)
   (e) No. of Acres:
   (f) Military

   Other (explain): Saltwater Aquarium
   No. of well: 2
   No. of service connections: 25
   Does this well contain marine fish? Yes No

7. (a) PROPOSED AMOUNT OF WITHDRAWAL: 40,3200 gallons per day
   (b) METHOD OF FLOW MEASUREMENT: Flowmeter

OTHER IMPORTANT INFORMATION:

8. LEGAL REQUIREMENTS: If required, these permits must be obtained before the Commission can legally issue a permit.

   Conservation District Use Permit (CDUP): To find out if a CDUP is necessary, call DLNR Land Division at 587-0244
   Required if needed, date approved
   Environmental Impact Statement (EIS) or Environmental Assessment (EA): To determine if an EIS or EA is necessary, call OEOG at 586-4155
   Required if needed, date published in OEOG bulletin
   Special Management Area Permit (SMAP): To determine if a SMAP is necessary: on Oahu, call 527-3374; on Hawaihi, call 961-8208; for Maui county, call 270-7235; on Kauai, call 241-6877.
   Required if needed, date approved

9. REMARKS, EXPLANATIONS: Saltwater well will feed an aquarium to contain marine fish.

   (If more space is needed, please attach additional sheet)

   Well Owner: Raptor Residence LLC Owner: Raptor Residence LLC Contractor: Couch Well Drilling
   Signature: [Signature] [Signature] [Signature]
   Date: 3/14/03
   [Signature] [Signature] [Signature]
   Date: 3/14/03

For official use only
Latitude ____________________ Longitudes ____________________
Aquifer System No. ____________________ State Well No. ____________________

WCP/PA Form 8/21/01
10. PROPOSED WELL SECTION

(Please attach schematic or diagram provided below)

HAWAII WELL CONSTRUCTION AND PUMP INSTALLATION STANDARDS

Please refer to the standards to ensure that your well is in compliance with applicable standards.

Solid Casing: (2.90% x (Ground Elev. - Water Level Elev.))
- Total Length: 45 ft.
- Nominal Diameter: 8 in.
- Wall Thickness: Schedule 40 in.
- Bottom Elevation: -40 ft. msl

Open Casing: (Steel or PVC) Screen
- Total Length: 10 ft.
- Nominal Diameter: 8 in.
- Wall Thickness: Schedule 40 in.
- Bottom Elevation: -50 ft. msl

Note: Neither bentonite nor mud should be used in annular space.

Cement Grout: (min. 70% of distance from ground elevation to top of water surface or 500 ft., whichever is less.)
- Minimum of 2' Radius & 4' Thick Concrete Pad (to contain benchmark surveyed to nearest 0.01 ft.)
- Ground Elevation: 4' 8" ft. msl

Wall Thickness:
- Nominal Diameter: Schedule 40
- Total Length: 80 ft.
- Bottom Elevation: -50 ft. msl

Material:
- Carbon Steel
- Stainless Steel
- Plastic
- Reinforced Plastic Mortar Pipe
- Fiberglass Reinforced Resin Pressure Pipe
- PVC Plastic
- Thermoset Plastic
- Reinforced Plastic Mortar Pressure Pipe
- Glass Fiber Reinforced Resin Pressure Pipe
- Fluorocarbon Tubing

For non-salt water wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,
- Bottom Elevation of Well Limit = (Water Level Elev. - Ground Elevation) / 4

Example: Estimated +2 ft. Water Level Elev. - Bottom Elevation of Well Limit = (2 - 114.5) / 4 = -18.5 ft.

Solid Casing Material:
- Carbon Steel: compliant with (check one or more): ANSI/AWWA C200, API Spec. 5L, ASTM A53, ASTM A139
- Stainless Steel: compliant with (check one or more): ASTM A247, Type E, Type S, Grade B, Other
- Plastic: compliant with (check one or more): ASTM A409 (production wells), ASTM A312 (monitor wells)
- Reinforced Plastic Mortar Pipe compliant with ASTM D3157
- Glass Fiber Reinforced Resin Pressure Pipe compliant with AWWA C900
- Fluorocarbon Tubing compliant with ASTM D3296
- Thermoset Plastic: (check one)
  - Fiberglass Reinforced Resin Pipe conforming to ASTM D2997
  - Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C900
  - Fluorocarbon Tubing conforming to ASTM D3296
  - Thermoset Plastic: (check one)
  - Fiberglass Reinforced Resin Pipe conforming to ASTM D2997
  - Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C900
  - Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
- Carbon Steel: compliant with (check one or more): ANSI/AWWA C200, API Spec. 5L, ASTM A53, ASTM A139
- Stainless Steel: compliant with (check one or more): ASTM A247, Type E, Type S, Grade B, Other
- Plastic: compliant with (check one or more): ASTM A409 (production wells), ASTM A312 (monitor wells)
- Reinforced Plastic Mortar Pipe compliant with ASTM D3157
- Glass Fiber Reinforced Resin Pressure Pipe compliant with AWWA C900
- Fluorocarbon Tubing conforming to ASTM D3296
- Thermoset Plastic: (check one)
  - Fiberglass Reinforced Resin Pipe conforming to ASTM D2997
  - Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C900
  - Fluorocarbon Tubing conforming to ASTM D3296
Self-Priming Pumps by Pacer

Pacer pumps are an excellent choice for saltwater applications or situations requiring self-priming. They feature 316 stainless steel shafts, EPDM seals, lined volute and all stainless steel fasteners. Baseplates include all fasteners, shims, and the motor coupling guard (except pedestal mounted models). Mounting and alignment available. All motors listed are TEFC single phase (specify voltage). Power cords are not included. Flexible coupled models listed include motors, bases and pre-assembly. Due to the many variations, you may want to call for a quotation. 50 Hz motors are available, call for information. Made in USA.

<table>
<thead>
<tr>
<th>Style</th>
<th>Recommended Flow (GPM)</th>
<th>Motor HP</th>
<th>Phase</th>
<th>Maximum Flow (GPM)</th>
<th>Maximum RPM</th>
<th>Discharge &amp; Suction</th>
<th>Ship Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR50P</td>
<td>80</td>
<td>0.5</td>
<td></td>
<td>1750</td>
<td>1 1/2'</td>
<td>18 lbs</td>
<td></td>
</tr>
<tr>
<td>PR50C</td>
<td>80</td>
<td>0.6</td>
<td>1</td>
<td>1750</td>
<td>1 1/2'</td>
<td>30 lbs</td>
<td></td>
</tr>
<tr>
<td>PR1P</td>
<td>120</td>
<td>1.0</td>
<td></td>
<td>1750</td>
<td>2'</td>
<td>18 lbs</td>
<td></td>
</tr>
<tr>
<td>PR1C</td>
<td>120</td>
<td>1</td>
<td>1</td>
<td>1750</td>
<td>2'</td>
<td>35 lbs</td>
<td></td>
</tr>
<tr>
<td>PR2P</td>
<td>110</td>
<td>2.0</td>
<td></td>
<td>3450</td>
<td>2'</td>
<td>18 lbs</td>
<td></td>
</tr>
<tr>
<td>PR2C</td>
<td>110</td>
<td></td>
<td>1</td>
<td>3450</td>
<td>2'</td>
<td>45 lbs</td>
<td></td>
</tr>
<tr>
<td>PR3P</td>
<td>180</td>
<td>3.0</td>
<td></td>
<td>3450</td>
<td>2'</td>
<td>18 lbs</td>
<td></td>
</tr>
<tr>
<td>PR3C</td>
<td>180</td>
<td></td>
<td>3</td>
<td>3450</td>
<td>2'</td>
<td>60 lbs</td>
<td></td>
</tr>
<tr>
<td>PR5F1</td>
<td>240</td>
<td></td>
<td>1</td>
<td>3450</td>
<td>2'</td>
<td>75 lbs</td>
<td></td>
</tr>
<tr>
<td>PR5F2</td>
<td>240</td>
<td></td>
<td>1</td>
<td>3450</td>
<td>2'</td>
<td>18 lbs</td>
<td></td>
</tr>
<tr>
<td>PR5F3</td>
<td>240</td>
<td></td>
<td>1</td>
<td>3450</td>
<td>2'</td>
<td>75 lbs</td>
<td></td>
</tr>
<tr>
<td>PR6F1</td>
<td>280</td>
<td></td>
<td>1</td>
<td>3450</td>
<td>3'</td>
<td>75 lbs</td>
<td></td>
</tr>
<tr>
<td>PR6F2</td>
<td>280</td>
<td></td>
<td>1</td>
<td>3450</td>
<td>3'</td>
<td>75 lbs</td>
<td></td>
</tr>
<tr>
<td>PR6F3</td>
<td>280</td>
<td></td>
<td>1</td>
<td>3450</td>
<td>3'</td>
<td>75 lbs</td>
<td></td>
</tr>
</tbody>
</table>

* Includes pre-assembly on baseplate - flexible coupling only. All units except "P" styles include motors. Maximum priming suction lift: 25' on 3450 RPM 12 - 15' on 1750
Makalawena Quadrat - South
Liholo Quadrat - North

Well sites at border of both maps
Kukio Bay

1:24,000
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
APPLICATION FOR PERMIT

Instructions: Please print in ink or type and send completed application with attachments to Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Application must be a five (5) copy set and a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at 587-0225.

For Official Use Only:

For Official Use Only:

APPLICANT INFORMATION: (Fill in all three, if applicable, and place a check next to the appropriate option.

1. (a) WELL OWNER: Raptor Residence LLC Contact Person: Marc Lisker
Mailing Address: P.O. Box 1036, Honolulu, HI 96806-1036
Fax: ___________________________ E-mail: ___________________________
(b) LAND OWNER: Raptor Residence LLC Contact Person: Marc Lisker
Mailing Address: P.O. Box 1036, Honolulu, HI 96806-1036
Fax: ___________________________ E-mail: ___________________________
(c) CONTRACTOR: Couch Well Drilling Contact Person: Rodney Couch Phone: 808-328-1745
Mailing Address: P.O. Box 139, Kealakekua, HI 96750
Fax: ___________________________ E-mail: ___________________________

WELL & PUMP INFORMATION: (Please fill in the diagram on the back of this form.)

2. WELL NAME: Raptor Residence Well Location: Hawaii
Address: 72-2777 Ulumiwii Akau, Kailua-Kona, HI 96740
Fax: ___________________________ E-mail: ___________________________

3. PROPOSED WORK:
   (check all that apply)
   - Construct New Well
   - Install New Pump
   - Modify Existing Well
   - Modify Pump
   - Abandon/Seal

   (State Well No.: ___________________________ (if unknown, please call Commission at 587-0225)

4. CONSTRUCTION:
   - Drilled
   - Dug
   - Shaft
   - Tunnel

   Is this well part of a battery of wells? □Yes □No (Please describe)

5. PROPOSED PUMPING RATE: 280 gallons per minute

6. PROPOSED USE:
   (check all that apply)
   - Domestic (individual, noncommercial water system)
   - Agricultural
   - Military
   - Municipal (including hotels, stores, etc.)
   - Industrial
   - No.

7. (a) PROPOSED AMOUNT OF WITHDRAWAL: 403,200 gallons per day
   (b) METHOD OF FLOW MEASUREMENT:
   □ Flowmeter □ Open-pipe □ Weir □ Office □ Other (explain): Saltwater Aquarium 20,700 gallons

OTHER IMPORTANT INFORMATION:

8. LEGAL REQUIREMENTS: If required, these permits must be obtained before the Commission can legally issue a permit.
   Conservation District Use Permit (CDUP): To find out if a CDUP is necessary, call DLNR Land Division at 587-0414
   □ Not Required If required, date approved ___________________________
   Environmental Impact Statement (EIS) or Environmental Assessment (EA): To determine if an EIS or EA is necessary, call OEC at 586-4185
   □ Not Required If required, date approved ___________________________
   Special Management Area Permit (SMAP): To determine if a SMAP is necessary: on Oahu, call 527-3374; on Hawaii, call 961-8288; for Maui county, call 270-7235; on Kauai, call 241-6677.
   □ Not Required If required, date approved ___________________________

9. REMARKS, EXPLANATIONS: Saltwater well will feed an aquarium to contain marine fish
   (if more space is needed, please attach additional sheet)

NOTE: Signing below indicates the signatories understand and swear that the information provided on this application is accurate and true to the best of their knowledge. Further, the signatories understand that approval of this application attaches the following standard conditions: 1) the proposed work is to be completed within two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion/abandonment report within 60 days after the completion date of the permitted work; 3) monthly water use data shall be submitted to the Commission; 4) such approval shall not constitute a determination of correlative water rights and shall not guarantee the pump capacity or future use up to the permitted pump capacity; 5) in the event that the application is not completed correctly, any permit may be suspended until the item is brought in to compliance, and any work done while the permit is in suspension may result in fines of up to $1000/day.

Well Owner: Raptor Residence LLC Landowner: Raptor Residence LLC Contractor: Couch Well Drilling
Signature: ___________________________ Signature: ___________________________ Signature: ___________________________
Date: 3/11/03 Date: 3/11/03 Date: 2/21/03
For official use only: Aquifer System No. ___________________________
State Well No. ___________________________

WOP/PA Form 8/21/01
10. PROPOSED WELL SECTION

(Please attach schematic if different from diagram provided below)

Hole Diameter: 14 in.

Elevation at top of casing 5.0 ft, msl

Total Depth 35 ft.

Minimum of 2 ft. Radius & 4" Thick Concrete Pad (to contain benchmark surveyed to nearest 0.01 ft.)

Ground Elevation: 4.8 ft, msl

Example: Estimated Water Level Elevation = (Water Elevation - Ground Elevation) / 4

Estimated Water Level Elevation: +0.2 ft, msl

Solid Casing: [± 90% x (Ground Elev. - Water Level Elev.)]

Total Length: 45 ft.
Nominal Diameter: 8 in.
Wall Thickness: Schedule 40 in.
Bottom Elevation: -10 ft., msl

Open Casing:

Perforated Screen
Total Length: 10 ft.
Nominal Diameter: 8 in.
Wall Thickness: Schedule 40 in.
Bottom Elevation: -50 ft., msl

note: Neither bentonite nor mud should be used in saturated zone thinner shells

Open Hole:

Length: _____________ ft.
Diameter: _____________ in.
Bottom Elevation: _____________ ft., msl

Solid Casing Material:

Carbon Steel: compliant with (check one or more): ANSI/AWWA C200 1 API Spec 5L 1 ASTM A53 1 ASTM A139

And compliant with (check one or more): ASTM A242 1 Type E 1 Type S 1 Grade B 1 Other

Stainless Steel: (check one):

1 ASTM A409 (production well) 1 ASTM A912 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one):

1 Schedule 40 1 Schedule 80

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one):

1 Schedule 40 1 Schedule 80 1 Schedule 120

Thermoset Plastic: (check one):

1 Filament Wound Resin Pipe conforming to ASTM D2996
1 Centrifugally Cast Resin Pipe conforming to ASTM D2997
1 Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
1 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
1 PTFE Fluorocarbon Tubing conforming to ASTM D3296

1 FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:

Carbon Steel: compliant with (check one or more): ANSI/AWWA C200 1 API Spec 5L 1 ASTM A53 1 ASTM A139

And compliant with (check one or more): ASTM A242 1 Type E 1 Type S 1 Grade B 1 Other

Stainless Steel: (check one):

1 ASTM A409 (production well) 1 ASTM A912 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one):

1 Schedule 40 1 Schedule 80

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one):

1 Schedule 40 1 Schedule 80 1 Schedule 120

Thermoset Plastic: (check one):

1 Filament Wound Resin Pipe conforming to ASTM D2996
1 Centrifugally Cast Resin Pipe conforming to ASTM D2997
1 Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
1 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
1 PTFE Fluorocarbon Tubing conforming to ASTM D3296

1 FEP Fluorocarbon Tubing conforming to ASTM D3296

* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or:

Bottom Elevation of Well Limit = \( \frac{\text{Water Elev.} - \text{Ground Elev.}}{4} \)

Example: Estimated Water Elev. = 10 ft., msl

Elev. of Well Limit = \( (10 - 4) \div 4 = 1.5 \) ft.
Self-Priming Pumps by Pacer

Pacer pumps are an excellent choice for saltwater applications or situations requiring self-priming. They feature 316 stainless steel shafts, EPDM seals, lined volute and all stainless steel fasteners. Baseplates include all fasteners, shims, and the motor coupling guard (except pedestal mounted models). Mounting and alignment available. All motors listed are TEFC single phase (specify voltage). Power cords are not included. Flexible coupled models listed include motors, bases and pre-assembly. Due to the many variations, you may want to call for a quotation. 50 Hz motors are available, call for information. Made in USA.

<table>
<thead>
<tr>
<th>Style</th>
<th>Recommended HP</th>
<th>Motor HP</th>
<th>Phase</th>
<th>Maximum Flow</th>
<th>Maximum RPM</th>
<th>Discharge &amp; Suction</th>
<th>Ship Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR50P</td>
<td>Pedestal</td>
<td>0.5</td>
<td></td>
<td>80</td>
<td>1750</td>
<td>1½&quot;</td>
<td>18 lbs</td>
</tr>
<tr>
<td>PR50C</td>
<td>Close Coupled</td>
<td>—</td>
<td>1</td>
<td>80</td>
<td>1750</td>
<td>1½&quot;</td>
<td>30 lbs</td>
</tr>
<tr>
<td>PR1P</td>
<td>Pedestal</td>
<td>1.0</td>
<td></td>
<td>120</td>
<td>1750</td>
<td>2&quot;</td>
<td>18 lbs</td>
</tr>
<tr>
<td>PR1C</td>
<td>Close Coupled</td>
<td>—</td>
<td>1</td>
<td>120</td>
<td>1750</td>
<td>2&quot;</td>
<td>35 lbs</td>
</tr>
<tr>
<td>PR2P</td>
<td>Pedestal</td>
<td>2.0</td>
<td></td>
<td>110</td>
<td>3450</td>
<td>2&quot;</td>
<td>18 lbs</td>
</tr>
<tr>
<td>PR2C</td>
<td>Close Coupled</td>
<td>—</td>
<td>1</td>
<td>110</td>
<td>3450</td>
<td>2&quot;</td>
<td>45 lbs</td>
</tr>
<tr>
<td>PR3P</td>
<td>Pedestal</td>
<td>3.0</td>
<td></td>
<td>180</td>
<td>3450</td>
<td>2&quot;</td>
<td>18 lbs</td>
</tr>
<tr>
<td>PR3C</td>
<td>Close Coupled</td>
<td>—</td>
<td>3</td>
<td>180</td>
<td>3450</td>
<td>2&quot;</td>
<td>60 lbs</td>
</tr>
<tr>
<td>PR3F</td>
<td>Flexible*</td>
<td>—</td>
<td>3</td>
<td>180</td>
<td>3450</td>
<td>2&quot;</td>
<td>75 lbs</td>
</tr>
<tr>
<td>PR5P</td>
<td>Pedestal</td>
<td>5.0</td>
<td></td>
<td>240</td>
<td>3450</td>
<td>2&quot;</td>
<td>18 lbs</td>
</tr>
<tr>
<td>PR5F</td>
<td>Flexible*</td>
<td>—</td>
<td>1</td>
<td>240</td>
<td>3450</td>
<td>2&quot;</td>
<td>75 lbs</td>
</tr>
<tr>
<td>PR5F3</td>
<td>Flexible*</td>
<td>—</td>
<td>3</td>
<td>240</td>
<td>3450</td>
<td>2&quot;</td>
<td>75 lbs</td>
</tr>
<tr>
<td>PR6P</td>
<td>Pedestal</td>
<td>5.0</td>
<td></td>
<td>280</td>
<td>3450</td>
<td>3&quot;</td>
<td>21 lbs</td>
</tr>
<tr>
<td>PR6F</td>
<td>Flexible*</td>
<td>—</td>
<td>1</td>
<td>280</td>
<td>3450</td>
<td>3&quot;</td>
<td>75 lbs</td>
</tr>
<tr>
<td>PR6F3</td>
<td>Flexible*</td>
<td>—</td>
<td>3</td>
<td>280</td>
<td>3450</td>
<td>3&quot;</td>
<td>75 lbs</td>
</tr>
</tbody>
</table>

* Includes pre-assembly on baseplate - flexible coupling only. All units except "P" styles include motors. Maximum priming suction lift: 25' on 3450 RPM 12 - 15' on 1750.
Makalawena Quadrat - South
Kiholo Quadrat - North
Well site is at border of both maps
Kukio Bay
1:24,000