SPANISH SPRINGS
GEOLOGICAL WATER STUDY REPORT

JOYCE SWEGGER
Att., M. Douglas Miller, Consultant

Prepared by: Dennis B. Nakamoto, Geologist
The Spanish Springs, Section 7, area is believed to contain two different aquifers. One aquifer lies within the alluvial deposits. Fault structures and impervious clay bodies control the direction of groundwater movement. The second aquifer is believed to lie within the volcanic basement rock.

There is, in our opinion, sufficient recharge of the alluvial aquifers to sustain many domestic wells. Wells dug for Bailey and Ignacio, in Sections 18 and 7 have helped to delineate various clay bodies. In both instances, Bailey and Ignacio wells, other wells in close proximity have not shown the clay thicknesses found in the first wells.

The discovery of aquifers within the buried volcanics will produce sufficient waters to sustain subdivisions. These groundwater are moving through the vugs and cavities formed in the volcanics at the time of extrusion. The groundwaters in the lavas appear to be under pressure. A spring located in the SE1/4 of Section 12 is believed to originate from a fracture in the volcanics.

In conclusion, our studies indicate the need to set up a drill rig on Sweger's Well #3 to continue drilling for exploration for the aquifer in the volcanics. After completion of work on Well #3, the drill operation should be moved to the NE1/4 of the NE1/4, Section 7 to locate the alluvial aquifer and the volcanic aquifer.

Dennis B. Nakamoto, Geologist
Northwest Mineral Exploration
January 16, 1979
**BUREAU OF LABORATORIES AND RESEARCH**
**NEVADA DIVISION OF HEALTH**

1660 N. Virginia Street
Reno, Nevada  89503

Information in box must be completed or analysis will not be performed.

<table>
<thead>
<tr>
<th>County</th>
<th>Township</th>
<th>Range</th>
<th>Section</th>
<th>General location</th>
<th>Additional information</th>
</tr>
</thead>
</table>

**WATER SOURCE:**
- Well
- Spring
- Surface

**Hot:**
- Cold
- Depth 300 ft.

**Casing diameter:** 10 in.

**Now in use:** Yes

**SAMPLES**
- Date submitted: Aug 10, 1981
- Location: Spanish Springs Well
- Sample: 300 c.c.
- Raw Surface
- Sample by: M.D. Miller

**INSTRUCTIONS:** Laboratory requires a clean sample. Samples which contain dirt or sediment will not be tested.

**Routine Domestic Analysis**

<table>
<thead>
<tr>
<th>Constituent</th>
<th>P.P.M.</th>
<th>Constituent</th>
<th>P.P.M.</th>
<th>Constituent</th>
<th>P.P.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>137</td>
<td>Chloride</td>
<td>4</td>
<td>Iron</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Nitrate</td>
<td>1.1</td>
<td>Manganese</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Alkalinity</td>
<td>74</td>
<td>Color</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Bicarbonate</td>
<td>71</td>
<td>Turbidity</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>Carbonate</td>
<td>8</td>
<td>p.p.m.</td>
<td>0.40</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Fluoride</td>
<td>0.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Arsenic</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**For Partial Analysis**

**Circle Constituent Desired**

**For Constituents Not Listed Below Print in Constituent Desired in Space Below**

**Received:** Aug 10, 1981

Chemical quality meets the State of Nevada Drinking Water Standards.

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**BUREAU OF LABORATORIES AND RESEARCH**
**NEVADA DIVISION OF HEALTH**

Reno—Las Vegas

**Sample by:** M.D. Miller

**Location:** Spanish Springs Well

**Sample:** 300 c.c.

**Raw Surface:** Fecal Coli.:

**Sample by:** M.D. Miller

**Date:** 9-10-81

**Hour:** 7:10 AM

**Weather:** Washo

**Results:** (Membrane filter) Rec'd > 30 hrs... > 30°C

**Other:** 10/10 55

**Coliforms:** 0/100 ML; Fecal Coli. 100 ML; > 200 other bacteria

**NOTE:** Coliform counts of 0 (<1) meet USPHS microbiological standards for drinking water. Call your area manager for explanation of results.
**DIVISION OF WATER RESOURCES**

**WELL DRILLERS REPORT**

Please complete this form in its entirety

1. **OWNER:**
   - Miss, Joyce E. Lomberg
   - Address: 1250 Riverside Dr., Reno, Nev.

2. **LOCATION:**
   - Section: 7
   - Township: 2 N.
   - Range: 8 E.
   - County: Washoe
   - Permit No.: 25593

3. **TYPE OF WORK**
   - New Well: [ ]
   - Recondition: [ ]
   - Domestic: [ ]
   - Irrigation: [ ]
   - Industrial: [ ]
   - Municipal: [ ]
   - Stock: [ ]
   - Cable: [ ]
   - Rotary: [ ]

4. **PROPOSED USE**
   - Domestic: [ ]
   - Irrigation: [ ]
   - Test: [ ]
   - Stock: [ ]
   - Industrial: [ ]
   - Municipal: [ ]

5. **TYPE WELL**
   - New Well: [ ]
   - Recondition: [ ]
   - Domestic: [ ]
   - Irrigation: [ ]
   - Test: [ ]
   - Industrial: [ ]
   - Municipal: [ ]
   - Stock: [ ]
   - Other: [ ]

6. **LITHOLOGIC LOG**

<table>
<thead>
<tr>
<th>Material</th>
<th>Water Strata</th>
<th>From</th>
<th>To</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand</td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sandy Clay</td>
<td></td>
<td>2</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Gray Clay</td>
<td></td>
<td>16</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Basaltic Rock</td>
<td></td>
<td>12</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Fractured Rock</td>
<td></td>
<td>13</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Hard Basaltic Rock</td>
<td></td>
<td>75</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Fractured Basaltic Rock</td>
<td></td>
<td>84</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>Soft Basaltic Rock</td>
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<td>101</td>
<td>124</td>
<td></td>
</tr>
<tr>
<td>Hard Rock</td>
<td></td>
<td>124</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>Fractured Basaltic Rock</td>
<td></td>
<td>126</td>
<td>156</td>
<td></td>
</tr>
<tr>
<td>Basaltic Rock</td>
<td></td>
<td>156</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>Fractured Basaltic Rock</td>
<td></td>
<td>150</td>
<td>165</td>
<td></td>
</tr>
</tbody>
</table>

Date started: 7/4/59
Date completed: 7/14/59

7. **WELL TEST DATA**

<table>
<thead>
<tr>
<th>Pump RPM</th>
<th>G.P.M.</th>
<th>Draw Down</th>
<th>After Hours Pump</th>
</tr>
</thead>
</table>

8. **WELL CONSTRUCTION**

- Diameter hole: 14 inches
- Total depth: 165 feet
- Casing record:
- Weight per foot: 38.71
- Diameter:
  - From 0 feet to 165 feet
- Depth of seal: 5 feet
- Gravel packed: Yes
- Perforations:
  - Type perforation: Factory-sawed
  - Size perforation: 3/32 x 2.5

9. **WATER LEVEL**

- Static water level: 10 feet below land surface
- Flow: G.P.M.
- Water temperature: x F
- Quality: Clean

10. **DRILLERS CERTIFICATION**

This well was drilled under my supervision and the report is true to the best of my knowledge.

Name: [ ]
Address: [ ]
Nevada contractor's license number: [ ]
Nevada driller's license number: [ ]

Signed: [ ]

Date: 7/14/59

**USE ADDITIONAL SHEETS IF NECESSARY**