AN ARCHAEOLOGICAL RECONNAISSANCE SURVEY
IN THE GEOTHERMAL RESOURCE SUBZONE
OF UPPER KAIMU AND MAKENA, PUNA, HAWAI'I

by

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prepared for

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INTRODUCTION

In early October of 1987 the writer of this report received a telephone call from Mr. Rod Moss representing Mid-Pacific Geothermal, Inc. During the course of this conversation a request was made of me to conduct an archaeological reconnaissance survey on the property of the Estate of James Campbell in the Puna District, on the island of Hawaii. Specifically, the area to be investigated follows a proposed road alignment starting one-half of a mile outside of the geothermal resource sub-zone and culminating at the proposed drill site designated as A1 (See Map 1.)

After receiving pertinent information on location, permission to enter the land, as well as to cross other land, I received a "go-ahead" on October 23, 1987. Furthermore, I was asked to contact Mr. Nobu Santo at the offices of Island Survey Incorporated in Hilo where I would be able to acquire a copy of the survey map as well as information on access to the recently cleared survey line along the proposed road to the well site.

Mr. Santo was exceptionally helpful, even offering to accompany me through the neighboring lands to the survey start point on the boundary of Conservation District land. In early November we followed through with this plan. After arrival at his recently cut survey line through the forest Mr. Santo returned to Hilo and I proceeded to carry out the field reconnaissance portion of this investigation. The following pages of this report provides the results of this research.
The area surveyed and reported on in this report is in the Puna District, on the island of Hawaii. It is on property of the Estate of James Campbell, Tax Map Key: 1-2-10:3. Here, a planned access road of about 1.6 miles is planned to link the present Kaohe homestead road with a proposed geothermal drill site (See Map 1.) The road corridor with an addition of a buffer on each side (north and south) ranging between two to five times larger than the road corridor, was examined in the field. In addition, an area of approximately two acres surrounding the proposed drill site (Al) was added to the survey.

The archaeological reconnaissance started at the Conservation District boundary southeast of Kaohe Homesteads and extended into the Geothermal Resource Sub-zone along the northeast rift zone of Kilauea Volcano. It may be further be identified as being in the ahupua'a of Kaimu and Makena.

The area is extremely rugged, with several deep cracks, crevices, vent lines and deep tree molds along and adjacent to the proposed road corridor. Other than along the line cut through the forest by the engineer's survey crew that preceded us to the area, the region examined is heavily covered with upland vegetation. 'Ohi'a and ferns were encountered throughout the area checked. Hapu'u was especially numerous, and these together with the 'ohi'a form the upper canopy of the forest. In most cases this reaches 30 to 65 feet in height and effectively restricts a good deal of the sunlight to the understory of the forest. Here other ferns such as uluhe, and vines such as 'ie'ie, form a tangle underfoot. In addition guava (Psidium guajava), grasses and wild orchids make their appearance where sunlight filters through the vegetation canopy. Throughout the period in the field, the area was especially difficult to examine, for once off the survey centerline already cleared by the engineering crew visual inspection was limited to perhaps ten to twenty-five feet.

The study area shows an elevation ranging from a low of 1340 feet above sea level at the eastern start-
ing point of the survey to a high of about 1530 feet at the drill site on the west (See Map 2.) Rainfall is fairly high and although there is no record for the immediate vicinity of the area of our concern, I would expect something in the order of between 150 to 200 inches a year. Throughout most of the first day in the field, rain fell almost constantly and at times very heavily. Low lying pockets of soil overlaying páhoehoe produces small muddy ponds of undetermined depth. In some cases I had to trample through these basins never really knowing how deep they might be. Fortunately I did not sink much more than a foot into the muck and cold water. Elsewhere insecure footing forced me on a number of occasions to slide to the bottom of an incline. Work under these conditions was anything but safe and secure.
Map 2
(Study area delineated)
METHODOLOGY AND FINDINGS

Basic field data for this report was obtained through a procedure or technique known as a reconnaissance survey. This is quite often the initial or preliminary archaeological examination. It normally includes visual observation and recording while walking over the area to be investigated. It includes note-taking, photographs where applicable, may add other illustrative methods of recording data, and always includes recommendations as to archaeological significance of the area so that it can be determined if further archaeological work is necessary.

In this instance I alone carried out the survey on the first day in the field although as previously mentioned I was accompanied by Mr. Nobu Santo. However, once at the beginning of the proposed road alignment he left me in order to return to Hilo while I proceeded to examine the road corridor, the buffer zone, the drill site, and the area surrounding the drill site. A total of ten hours were expended on that first day in the field. After working on the report I found I may not have covered the required width for the buffer zone to the north and south of the road corridor and I therefore returned a second day with my son Ken in order to insure the required coverage of an area "two to five times larger than the actual access road corridor." As a result, a total of 26 man hours, over a two-day period, was expended in field work.

As stated in the Land Board's decision of April 11, 1986, which set the requirements for the investigation, I conducted an archaeological reconnaissance survey for the access road to Drill Site A1, the drill site itself, and a buffer zone on each side of the road corridor and around the drill site (See Maps.) Throughout the field examination I found nothing to indicate past use of the study area. In other words I did not find the presence of any human activity remains within the area that I investigated. In addition to the 1.6 mile transect along the proposed road corridor we followed a second transect approximately 30 to 40 feet north of the centerline and roughly parallel to it, and a third parallel transect
about equal distance south of the centerline. This gave us coverage of a corridor strip of 100 feet or more in width. Likewise, we investigated a similar buffer in the vicinity of the drill site. Here we must have examined close to three acres of land surrounding the mid-point of the drill site.

Previous archaeological fieldwork conducted by Paul H. Rosendahl, Ph.D., Inc. within the Geothermal Resource Subzone includes five transects north, southeast, and east of the area reported on in this report (Haun, et al, 1985.) In only one of these areas examined, that of transect five, did field crews come across probable archaeological remains. This included five to six cairns and mounds on the southeast summit of Heiheiahulu, some 1.1 miles south of the nearest area covered in our fieldwork.

In nearby Kahauale'a a reconnaissance survey was conducted by Hommon (1982) without finding anything of archaeological significance. Here too Rosendahl (1985) undertook a more recent field examination and again found nothing of cultural value. Additionally, an addendum by Rosendahl to the previously mentioned report by Haun and others (1985) reports on the use of a helicopter to make a low altitude aerial reconnaissance of the proposed development area. He landed and added a sixth transect to Haun's work. This transect is about three and a half miles west of our study area. On this trip Rosendahl also landed to examine an area adjacent to Haun's transect five at Heiheiahulu pu'u.

When we examine other than archaeological data we find nothing of a specific reference to the study area. Holmes (1982) mentions the U.S. Exploring Expedition of 1840 following a trail south of and paralleling the east rift zone from near Kalalua crater to Kapoho. He also mentions that the forest zone of Kahauale'a was exploited for its birds and for wood gathering. In addition, we read that the uplands of Kupahua, Kapaaahu, Kaimu, Makena and Kalapana were extensively planted in aboriginal times (Handy and Handy, 1972.)
SUMMARY, CONCLUSIONS AND RECOMMENDATION

No archaeological sites, features or data supporting human activity within the study area was found during our investigation. Nonetheless, I caution those that might be tempted, therefore, to transfer an expectation or belief that other areas within the larger Geothermal Resource Subzone are also free of cultural remains. From an examination of the limited literature I would expect to find something, however confined the data. The likely location for cultural material coming to light is along or near the southern border and lands immediately to the south. Already found here are the only probable sites recorded to now. These are the few cairns and mounds near the summit of Heiheiahulu. Data of a non-archaeological nature also suggests the possibility of at least some use of the southern portion of the proposed development area and if this be true than the region between Pu'u Kauka and Heiheiahulu and the upper Kainu Homesteads is perhaps the more likely location for cultural remains.

Finally, and in conclusion, let me reiterate my previous statement that no archaeological material was found during our survey of the area delineated in this report. Based on this, as well as my investigation of the limited literature, I find no archaeological significance for the area investigated and I therefore recommend no further work be required for that area.
BIBLIOGRAPHY

Handy, E.S. Craighill, and Elizabeth G. Handy

Haun, Alan E., and Paul H. Rosendahl with James Landrum III

Holmes, Tommy

Hommon, Robert J.

Rosendahl, Paul H.
<table>
<thead>
<tr>
<th>Hawaiian Word</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ahupua'a</td>
<td>A land division usually extending from the uplands to the sea. So called because the boundary was marked by a heap (a'ula) of stones.</td>
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<tr>
<td>hapu'u</td>
<td>An endemic tree fern (<em>Cibotium</em> Sp.) common in many forests of Hawaii.</td>
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<tr>
<td>'ie'ie</td>
<td>An endemic woody, branching climber (<em>Freycinetia arborea</em>) growing luxuriantly in forests at altitudes of about 1500 feet.</td>
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<tr>
<td>'ōhi'a</td>
<td>A tree (<em>Metrosideros macropus, M. collina</em>).</td>
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<tr>
<td>pahoehoe</td>
<td>Smooth, unbroken type of lava. As contrasted with 'a'a.</td>
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<tr>
<td>pu'u</td>
<td>Any kind of a protuberance. A hill, peak, mound, bulge, heap, knob, etc.</td>
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<tr>
<td>uluhe</td>
<td>All Hawaiian species of false staghorn fern (<em>Dicranopteris linearis</em>).</td>
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