

April 20, 2018

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via email

Re: Preliminary archaeological and cultural considerations with respect to the proposed development of a solar farm on TMKs: (3) 9-3-004:010 and 040, Mohowae, Waiopua, Keaa 1st and 2nd *ahupua'a*, Ka'ū District, Island of Hawai'i.

Dear David:

At your request, on behalf of Arion Energy, ASM Affiliates (ASM) conducted background research with respect to the proposed development of a solar farm on TMKs: (3) 9-3-004:010 and 040, Mohowae, Waiopua, Keaa 1st and 2nd *ahupua'a*, Ka'ū District, Island of Hawai'i. This research included an archival review of existing archaeological reports and historical maps, as well as a review of traditional cultural information relative to the current study area. ASM also conducted a brief field inspection of the study area.

Regarding the cultural significance of the project area and any ramifications such significance may have with respect to the proposed solar development, I am providing a brief culture-historical context, which includes the results of prior archaeological studies conducted in the project area vicinity. The proposed project area spans four adjacent *ahupua'a* (Mohowae, Waiopua, Keaa 1st and 2nd) situated within the District of Ka'ū near the southern tip of Hawai'i Island. As noted by early Western explorers to the South Point region, and described by Handy and Handy (1991:578-584), the fertile plain in the vicinity of the study area was once extensively and intensively planted with traditional subsistence crops such as *kalo* (taro) and *'uala* (sweet potato). The archaeological remains of the former field infrastructure, referred to by archaeologists as the Ka'ū field system, are still evident in aerial photographs across large swaths of land in the vicinity of the subject parcels (including the eastern portion of Parcel 10). In addition to being agriculturally productive, the land of Mohowae is also remembered as a level area famous for sport, where according to Handy and Handy (1991:582), "contests and games of strength and skill were held."

During the *Māhele 'Āina* of 1848, the four *ahupua'a* included within the study area were relinquished to the Government (in lieu of commutations on various other lands they received) by their royal claimants: Mohowae by Ane Keohokālole, Waiopua by Loe, Keaa 1st by William Pitt Leleiohoku, and Keaa 2nd by Kahanaumaikai. Three *kuleana* parcels were awarded to native tenants of Waiopua *Ahupua'a* as a result of the 1848 land division (LCAw. 9845 to Napahoa, LCAw. 9846 to Poohina, and LCAw. 9849 to Kapule). Napahoa's land section, situated within the *'ili* of Napahuewalu, was received from Loe in 1838, while Poohina's and Kapule's land sections, situated within the *'ili* of Popolohaunui and Waialaa respectively, were received from Nakahoa in 1838. The native testimonies provided for these *kuleana* are silent regarding the specific use of the land, but LCAw. 9211 to Kanaloa, situated adjacent to the current study area (and LCAw. 9845) within Kaoiki 'Ili of Waiopua *Ahupua'a*, was claimed as a *kīhāpai kalo* (taro field), indicating that the awards within the study area were likely cultivated sections as well.

Following the *Māhele 'Āina* of 1848, large parcels of land within Mohowae, Waiopua, Keaa 1st and 2nd *ahupua'a* (those not awarded as LCAw.) were sold by the Hawaiian Government as Royal Patent Grants. Three grants, or portions thereof, are included within the current study area: Grant No. 1371 in Keaa 1st and 2nd *ahupua'a*, sold to W. I. M. Koma on March 21, 1854; Grant No. 2445 in Keaa 2nd *Ahupua'a*, sold to Kahalewa on December 12 1857; and Grant No. 2905 in Waiopua *Ahupua'a*, sold to Kamanuwai on January 27, 1863. A map included with Grant No. 1371 to Koma shows an *alanui* (road) crossing a portion of that parcel in a *mauka/makai* direction, while the maps of the other two grant parcels show the *Alanui Aupuni* (Government Road) between Kahuku and Wai'ōhinu extending along the *makai* boundary of the current study area.

In 1868, an eruption of Mauna Loa drastically altered the cultural and physical landscape of Ka'ū in the vicinity of the current study area. The roughly two-week long eruption included a massive earthquake (on April 2, 1868) that knocked down most of the stone walls and buildings in the district, triggered a *tsunami* that swept away many of the coastal villages and drowned 46 people, and caused a landslide that buried another village along with 31 of its inhabitants. On April 7, 1868 a fissure opened along the southwest rift zone of Mauna Loa (just above the current study area), and emitted a lava flow that reached the sea, crossing a distance of roughly 13 kilometers, in only three and a half hours. The lava flow continued for four days, and by the time it ceased on April 11, 1868, it had covered a large portion of the current study area with a fresh layer of 'a'ā lava.

Historic maps created following the 1868 lava flow record a couple of named places within the study area including Pu'u Po'opa'a and Haunakalii. Pu'u Po'opa'a, literally meaning "hard head hill," consists of a topographic high point that was flowed around on both sides by the 1868 flow (Po'opa'a is also the name of an *'ili* of Keaa *Ahupua'a*). While the origin of this name is not known, the origin of the name Haunakalii, literally meaning "stench [of] the jealousy," was recorded in the field book of the surveyor, Kaelemakule, who wrote:

The Haunakalii hole is about 30 ft. deep and 30 ft. in diameter. Meaning - Bad odor of jealousy. The people of the coast and the cultivators of the soil fought on account of jealousy. Starvation killed the vanquished who were thrown in hundreds into this hole. The hole has a stone wall about it to keep the cattle from falling in. Flow of 1868 came to the edge of this hole and a little went into it. (Field Book, Hawai'i Registered Map No. 517:38)

A map created in 1903, when the unsold portions of the study *ahupua'a* and neighboring Government Lands were divided into the Kiolakaa-Keaa Homestead Lots (Hawai'i Registered Map No. 2176), depicts Haunakalii hole within a *kīpuka* (an area flowed around by the 1868 lava flow) near the *mauka* boundary of Grant No. 1371 to W.T.M. Koma. On later maps this *kipuka* is labeled Kīpuka Auna (or Mana) o Ka Lili, literally meaning the flock (or spirit) of jealousy *kipuka*).

Aerial photographs taken during the second half of the 20th century indicate much of the land encompassed by the current study area (areas not covered by the 1868 lava flow) was mechanically cleared and used as cattle pasture. The eastern portion of Parcel 10, nearest to South Point Road, does not appear to have been mechanically cleared, and Precontact agricultural features of the Ka'ū field system are still evident in recent Google Earth images within that portion of the subject property.

Our archival research indicates that the current study area has not undergone prior archaeological investigation. However, previous archaeological studies conducted in the general vicinity of the subject parcels (Landrum 1984; Clark and Rechtman 2004; Clark et al. 2004), and more recently conducted, but unpublished, studies of the Ka'ū field system (conducted on the lands of the Hawai'i Volcanos National Park Kahuku Unit and Kamehameha Schools), indicate that significant archaeological and cultural resources are present nearby the proposed solar project site. A brief field inspection conducted by ASM on April 18, 2018, confirmed that such resources are also present within the study parcels. Significant historic properties encountered during the field inspection include Historic burial platforms noted at two locations along the eastern edge of the 1868 lava flow, a Historic trail crossing the 1868 lava flow, a lava tube within

previously grubbed pasture to the east of the 1868 lava flow, a complex of Precontact Period agricultural features on Parcel 10 near the intersection of South Point and Kamaoa Roads, and several Historic Period boundary and ranch walls at various locations.

Given the current regulatory environment, it is most probable that the State Historic Preservation Division will require that an Archaeological Inventory Survey (AIS) in accordance with Hawai'i Administrative Rules (HAR) §13-284 be conducted in conjunction with any Hawai'i Revised Statutes (HRS) Chapter 6E action associated with development of the proposed solar project. While significant historic properties are present within the study area, they are not widespread, and are actually relatively infrequent on both the 1868 lava flow and within areas of previously grubbed pasture. If carefully selected, the proposed location for the solar project could avoid impacting historic properties altogether. If the site selected for the solar project is nearby the known Historic burials on the 1868 lava flow the preparation of a Burial Treatment Plan will also be required following the completion of the AIS in accordance with HAR §13-300-33 (if additional other site types are encountered during the AIS, a Preservation Plan prepared in accordance with HAR §13-278 may also be required as well). If there is an element of the proposed solar project that triggers compliance with HRS Chapter 343, this will in turn necessitate the preparation of a Cultural Impact Assessment (CIA) as a part of the Environmental Assessment process. Based on what we know to date, I do not anticipate that a CIA will result in the identification of significant cultural impacts.

Should you have any additional questions, or if you would like further information please feel free to contact me.

Sincerely,



Bob Rechtman, Ph.D.
Chief Operating Officer

Reference Cited

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