

crater from there to the sea. I will leave until I return from the other side of the mountain, where I intend starting early Monday morning. Don't you think that I had better survey the boundary between the government land of Kamao and Kaohai which is very short and will survey with Paawili on the upper side of the island to Palawai form a survey of Kaohai. I have started to carry a set of triangles around from Puu Manu to Halepalaos and find that it can be done with little effort and few triangles. When I was in Lahaina Mr. Gibson spoke of having me stop here and complete the survey of the island as he is very anxious for a map.

It is beginning to get very dry here and water scarce. Potatoes are also very scarce and expensive. Pat ai are a dollar apiece in Lahaina now having jumped from seventy five cents since I came over. . .

As soon as I finish Kaunolu I will send you the notes of survey as the minister of interior is very anxious to get them. Mr. Gibson is going to start his men shearing at Palawai in a few days[s]. Hoping to hear from you soon. I remain yours.²⁹

The following Boundary Commission document gives testimonies of the surveyor Monsarrat, as well as the *kama'āina* Pali on the boundaries of lands on Lāna'i. Pali states that Kaunolu is a government land and Kalulu is a Crown land.

Hooponopono Palena Aina a ke Komisina

Ma ka la 14 o Julai, A.D. 1877, ua walho mai o Prof. W.D. Alexander he palapala noi i ke Komisina Palena Aina o Maui, no ka hooponopono ana i na palena o kahi mau aina i pua i ka Anaia o ka Mokupuni o Lanai. Oia hoi o "Palawai" no W.M. Gibson Esq. "Kaohai" no Ka Mea Kiekie R. Keelikolani; "Kalulu," "Kamoku," he mau Aina Lei Alii; "Kamao," "Kealia," "Pawili," & "Kaunolu," he mau Aina Aupuni.

Ma ka la 17 o Sepatemaba, A.D. 1877, ua noho ka Aha a ke Komisina e hoolohe no ke noi maluna'e. O M.D. Monsarrat (Hoape Ana Aina Aupuni) ka mea i hiki mai ma ka aoao o ka mea noi. A no ka mea hoi nana no i Ana ia mau aina apau. A ua hoomana pu ia mai no hoi oia e Jno. O. Dominis e lawelawe

Decision of Boundaries by the Commission

On the 14th day of June, A.D. 1877, Prof. W.D. Alexander, set before the Boundary Commissioner of Maui, an application to Certify the boundaries of several lands which have all been surveyed on the island of Lanai. They being, "Palawai" of W.M. Gibson Esq. "Kaohai" of Her Highness R. Keelikolani; "Kalulu" and "Kamoku," Crown Lands; "Kamao," "Kealia," "Pawili," & "Kaunolu," Government Lands.

On the 17th day of September, A.D. 1877, the Commission convened to hear the above applications. M.D. Monsarrat (Assistant Government Surveyor) was present on behalf of the applicant. Also as the one who Surveyed all of the lands. Jno. O. Dominis was authorized to bring the mat-

²⁹M.D. Monsarrat (Surveyor) to W. D. Alexander (Surveyor General), June 2, 1877, Hawaii State Archives, DAGS 6 Box 1 - Survey.

imua o ke Komisina ma na mea e pili ana i na Aina Lei Alii ma Lanai.

Hoohihikia a olelo mai:

Nā'u no i Ana keia mau aina a pāu; ua hele pu a me na kamaaina ma na palena apau o keia mau Aina. A ua lokahi jakou apau, ua pono, a ua pololei, ka'u ana ana. O Rev. N. Pali ko'u alakai nui nana i kuhukahi, a ua make iho nei kekahi. No ka hiki ole ana mai o Pali i keia ia, ua hoopono ka Aha a hiki mai oia noho hoi.

Ma ka la 30 o Sepatemaba 1877, ua hiki mai o Pali, a ua noho hoi ka Aha. Hoohihikia o Pali a olelo mai:

O Pali au, he kamaaina au no Lanai, na ko'u mau makua i kuhukahi mai ia'u. A no ko'u noho konohiki ana hoi malalo o Kaulikeaouli maopopo loa ia'u na palena. Noho Konohiki au no "Kalulu," "Kamoku." He mau aina Aupuni o Kamao, Kealia, Pawili, ame Kaunolu. Maopopo loa ia'u.¹

ter forward to the Commission by those adjoining the Crown Lands on Lanai.

Sworn and stated:

I surveyed all these lands; I went along all the boundaries of these lands with natives. They were all in agreement, My surveys are correct and true. Rev. N. Pali was my primary guide, he pointed out things, others have since passed away.

Because Pali did not arrive this day, the Commission moved Await his arrival before reconvening.

On the 30th day of September, 1877, Pali arrived, and The Commission reconvened. Pali Sworn and stated:

I am Pali. I am a native of Lanai, my parents pointed them (the boundaries) out to me. And as a result of my having been Land overseer under Kaulikeaouli, the boundaries are known to me. I was the Konohiki of "Kalulu" and "Kamoku." Kamao, Kealia, Pawili, and Kaunolu are Government lands. I know them well.²

¹ Palawai Aupunaa, Island of Lanai, Boundary Commission Volume No. 1, p. 108-110, No. 34, Keena Kianaia o Maui, Lahaina, September 17, 1877.

² Trans. K. Maly.

The following is from the Boundary Commission. It certifies the boundaries determined through the survey of Monsarrat.

Olelo Hooholo

Ke hooholo nei au. O na palena o na aina apau ma Lanai i anaia e M.D. Monsarrat, oia hoi o "Palawai" no W.M. Gibson, "Kaohai" no ka Mea Kiekie R. Keelikolani, "Kalulu" a me "Kamoku" he mau aina Lei Alii ame "Kamao," "Kealia," "Pawili" & "Kaunolu" he mau aina Aupuni, e ilike me na ana pakahi i houkeia maloko nei, ua pono a ua pololei.

Decision

I hereby move. The boundaries of all the lands on Lanai, surveyed by M.D. Monsarrat, they being, "Palawai" of W.M. Gibson, "Kaohai" of Her Highness, R. Keelikolani, "Kalulu" and "Kamoku" Crown Lands, and "Kamao," "Kealia" [Aupuni], "Pawili" & "Kaunolu," being Government lands, as uniformly surveyed and given within, are right and correct.

Signed at Lahaina, this 30th day of Sept. 1877.

Kakauia ma Lahaina i keia la 30 o Sept. 1877.

Komisina P. A. Apana Elua, ko H. P. A.¹ Commissioner L. B.,² Second District, of the H. I.³

¹ Boundary Commission Volume No. 1, Palawai Ahupua'a, Island of Lanai, p. 113.

² Commissioner of Land Boundaries.

³ Trans. K. Maly.

These are the metes and bounds of Kaunolu Ahupua'a from the survey of Monsarrat for the Boundary Commission:

Commencing at a pile of stones over a cross cut in a large stone (the same being the point of Commencement of Kalulu Survey) at the edge of precipice a few feet from the sea. The boundary runs:

1. N 87° 20' E true 2551 feet along Kalulu to a pile of stones on side Hill. Thence:
2. N 76° 00' E true 3206 feet along Kalulu to a rock marked with a cross.
3. N 54° 17' E true 6694.5 feet along Kalulu passing between Maakua's house & his sheep pen to a point 1.4 feet East of a rock with a cross cut in it.
4. N 56° 15' E true 7944.6 feet along Kalulu to a pile of stones on South edge of Palawai Crater.
5. N 53° 14' E true 13359 feet along Kalulu across crater passing West of school house to a point on terrace marked with Mamane post.
6. N 44° 00' E true 3935 feet along Kahlu across terrace and to a red wood post on the top of a hill called Puu Alii.
7. N 52° 7' E true 9290 feet along Kalulu across Maunalei and Kalulu valleys to a red wood post on East edge of latter gulch. Thence:
8. N 20° 1' E true 9729.5 feet Along Kalulu down the East edge of Kalulu valley to a rock on edge of valley marked with a cross.
9. N 36° 4' E true 5878.5 feet along Kalulu to a red wood post on sea shore. Thence:
10. S 44° 7' W true 5581 feet along shore.
11. S 48° 1' W true 1510 feet along shore to a red wood post. Thence:
12. S 37° 9' W true 10808 feet along Palawai up ridge to a red wood post on the top of a red hill.
13. S 48° 12' W true 6071 feet along Palawai up ridge and across a small gulch and up another ridge to a red wood post. Thence:
14. S 30° 33' W true 1564 feet along Palawai up a path that follows up ridge to a red wood post. Thence:
15. S 1° 30' W true 4425 feet along Palawai across the large valley of Palawai to highest point of the Island. Thence:
16. N 38° 35' W true 3565 feet along Paawili & Kealia Aupuni.
17. N 72° 00' W true 1025 feet along Kealakapu. Thence:
18. S 32° 10' W true 1660 feet along Kealakapu down ridge to a point marked by two Triangular pits and bottle at the edge of a gulch.

19. Thence down the bottom of this gulch and up the main gulch to a point on South bank marked by two Tri. pits and buried bottle; which point bears S 61° 45' W true 3482 feet from last point.³⁰
20. Thence down the bottom of the main gulch to a point on East bank marked by two Tri. pits & bottle which bears from last point S 36° 21' W true 930 feet.
21. Thence still down the bottom of the gulch to a point on East bank marked by two Tri. pits and bottle which bears from last mentioned point S 18° 7' E true 538 feet.
22. Thence still down the bottom of the gulch (which where it enters the crater is called the Kauhe) to a large rock at mouth on lower side of the road marked with a cross, and called "Pohakulooa," which rock bears S 46° 20' W true 2450 feet from last mentioned point.
23. S 44° 8' W true 1337.5 feet along Kealakapu across the crater to a point marked by two Tri. pits a little S.E. of a white house belonging to Ohua.
24. S 62° 24' W true 5889 feet along Kealakapu to a point marked by two Tri. pits and a post near an old house site.
25. S 42° 27' W true 1698 feet along Kealakapu to a point marked by two Tri. pits.
26. S 48° 30' W true 1275 feet along Kealakapu to a point marked by two Tri. pits.
27. S 32° 55' W true 3125 feet along Kealakapu to rock marked with a cross.
28. S 18° 11' W true 1637 feet along Kealakapu to rock marked thus → In a clump of rocks.
29. S 25° 00' W true 2280 feet along Kealakapu to a rock marked with a cross at the Commencement of a small gulch.
30. Thence down the bottom of said gulch and large gulch (that reaches the sea near the Heiau) to a point marked by a cross on the S.E. side of the gulch at a bend in it which point bears from last point S 27° 23' W true 3663 feet.
31. Thence down the bottom of the gulch passing to the N.W. of a well in the gulch (which well belongs to Kealakapu) to a large rock marked with a cross and from thence to the sea at a point on the shore at the middle of the harbor; which point bears from the rock on the side of the gulch at the bend S 33° 57' W true 1343 feet.
32. Thence following the sea shore to point of Commencement. The traverse along the shore being as follows:
 1. N 56° 7' W true 150 feet.
 2. N 27° 54' W true 4387 feet.
 3. N 39° 14' W true 4234 feet.

³⁰Page 119.

4. N 31° 35' W true 1640 feet.
 5. N 18° 23' W true 3142 feet to point of Commencement.
- Surveyed by M.D. Monsarrat, Assistant Hawaiian Government Survey, Lanai, June 1877.
- Hānala a hooholoia e a'u ma Lahaina i ka la 29 & 17 o Sept. A.D. 1877.
 Komisina P. A. o Maui, 2nd Jud. Circuit.³¹
- The following are the metes and bounds of the Crown Land of Kalulu, as surveyed by M. D. Monsarrat in 1877.
- Commencing at a pile of stones over a cross cut in a stone (the same being the point of commencement of Kaunolu Survey) at the edge of precipice a few feet from sea. The boundary runs:
1. N 87° 20' E true 2557 feet along Kaunolu to a pile of stones on side hill. Thence
 2. N 76° 00' E true 3206 feet along Kaunolu to a rock marked with a cross. Thence
 3. N 54° 17' E true 6694.5 feet along Kaunolu passing between Maakua's house and his sheep pen to a point 14 feet East of a rock with a cross cut on it.
 4. N 56° 15' E 7944.6 feet along Kaunolu to pile of stones on South edge of Palawal Crater. Thence
 5. N 53° 14' E true 13359 feet along Kaunolu across Crater passing West of school house to a point on terrace marked by a Mamane post. Thence
 6. N 44° 00' E true 3935 feet along Kaunolu across terrace to a red wood post on the top of a hill called Puu Alii.
 7. N 52° 7' E true 9290 feet along Kaunolu across Maumalei and Kululu valleys to a red wood post on East edge of latter valley. Thence
 8. N 20° 1' E true 9729.5 feet along Kaunolu down the East ridge of Kalulu valley to a rock on edge of valley marked with a cross.
 9. N 36° 4' E true 5878.5 feet along Kaunolu to a red wood post on seashore Thence
 10. N 46° 2' W true 6285 feet along seashore to a red wood post a little N. E. of a small creek (said post being at N. E. corner of Maumalei). Thence
 11. S 28° 27' W true 10676 feet along Maumalei up slope to a pile of stones on a hill called "Wawaekū."
 12. S 67° 25' W true 9370 feet along Maumalei up gulch of Waiakapua to a red wood post on summit of a hill called "Wahane." Thence

³¹ Transferred, Executed and moved by me at Lahaina on the 29th & 17th day of Sept. A.D. 1877. Commissioner of Land Boundaries, Maui, 2nd Jud. Circuit. Citation: Kaunolu, Ahupuaa, Island of Lanai, Boundary Commission Volume No. 1, p. 119-120, No. 37. Survey of the Government Land of Kaunolu, Lanai.

13. N 74° 1' W true 5235 feet along Maumalei along Northern edge of Papala-hoomee gulch to its junction with Maumalei valley and across said valley to a red wood post on the summit of a hill called "Puukukai" on West edge of valley. Thence
14. S 0° 41' W 3555 feet along Mahana and Paomal to a red wood post on ridge that comes down from the central mountain range (said post being on North edge of valley that contains the water hole of Kaiholena). Thence
15. S 45° 49' W true 1067.9 feet along Kamoku across valley passing to the S. E. of above mentioned water hole to a point on ridge marked with Triangular pits and ditch thus said point a little East of Puupane.
16. Thence along Kamoku down the N.W. edge of the Kapano valley to the Government road, passing near Kawaonahelē's house keeping straight on across a side ravine coming in from the North (called Keaaku) to a red wood post at the top of the North wall of the Palawal Crater at a place called "Pulēhulua," near Kealihanani's house, which red wood post bears S 44° 53' W true 8052 feet from last mentioned point on ridge. Thence
17. S 65° 44' W true 4939.3 feet along Kamoku along North edge of crater to a point a little North of a cactus clump; marked by two triangular pits. Thence
18. S 46° 19' W true 10141.4 feet along Kamoku down road to a cross cut in a stone amongst a lot of stones at the former site of an old Heiau called "Ili o Lono." Thence
19. S 72° 48' W true 2080 feet along Kamoku to head of gulch. Thence
20. S 84° 40' W true 2594 feet along Kamoku to a cross cut in a stone on South edge of gulch.
21. S 88° 46' W true 5225.9 along Kamoku down South edge of gulch to a stone marked with cross; on edge of gulch a little above a branch that runs into the main gulch from the South.
22. S 86° 27' W true 3254 feet along Kamoku down South edge of gulch to a pile of stones (on edge of same) over a cross cut in a large stone to the South of Kaumalapau Harbor (the same pile of stones being the point of Commencement of Kamoku survey).
23. Thence along seashore to Commencement. Traverse along the shore being as follows:
 1. S 27° 00' W true 1,212 feet.
 2. S 22° 57' E true 5915 feet to Commencement.

Area 5945.19 Acres.
 Exclusive of Awards.
 Surveyed by M.D. Monsarrat, Assistant Hawaiian Government Survey Lanai, June 1877.³²

³² Kalulu Ahupuaa, Island of Lanai, Boundary Commission Volume No. 1, p. 112-113, No. 36. Survey of the

On March 23, 1866, Walter M. Gibson applied to the Minister of the Interior, F. W. Hutchinson, for a lease on the government lands on Lanai, including lands in Kaunolu and Kahalu. With his application, Gibson submitted a sketch map, included here as figure 6.

In compliance with your request I have the honor to lay before the Department, a statement respecting Government lands on Lanai.

There are six ahupuaas of land belonging to Government on the island, named: Kamao, Paawili, Kealia, Kahulu, Kaunolu, and Kamoku; comprising about 24,000 acres, with a population of 80 persons. About one eighth of this surface is good arable "dry" land; perhaps one half is more or less adapted for grazing; and the remaining three eighths, the portion bordering on the beach, an utter barren waste.

I made application to the Department in October 1862 to lease all of these lands. My application was favorably entertained by the Department, but owing to want of proper surveys, a lease was not made out at the time, as I was informed by letter, written by authority of His Majesty, then Minister. A copy of this letter, dated Feb. 20th, 1863 is enclosed.

Feeling myself fortified by a guarantee from the Department, I proceeded to make improvements: to enclose lands with stone wall, to make roads, construct dwelling for laborers, and cultivate on the Government lands, until my operations were interrupted by a lease of Kamoku, the most important of these lands, by the Department, to another party. I had expended much labor on Kamoku, which was thus rendered fruitless.

However, I would still propose to the Government to lease the five lands, Kamao, Paawili, Kealia, Kahulu, and Kaunolu. They are now mere commons, upon which roam many thousand head of sheep and goats that do not yield one cent of revenue to the Government...

Accompanying this, a rough draft map of Lanai.³³

Six months later, on September 18, 1866, Gibson applied again to the Minister of the Interior.

I beg to be informed if the Government lands in this island have been rented or leased. A certain number of natives whom I opposed in their destruction of the little shrubbery of the island, in order to make charcoal, assert that the land is in their possession, and have attempted to subject me to a great deal of annoyance.

I cannot believe in the truth of their assertion that such a lease has been made, in view of the pledge given to me by your predecessor in office, his Majesty.

I am not at all anxious to lease all the Government lands on Lanai. The bulk of these lands, comprised in the districts named Kaunolu, Kahulu and

³³Crown Land of Kahulu, Lanai.

³⁴Hawaii State Archives, Interior Department Lands.



Figure 6: Sketch map of Lanai³⁴ by W. M. Gibson, May 23, 1866 (Hawaii State Archives).

Kamoku, can be better utilized by the native residents at present, and I should waive any pretensions I may have in respect to them; but the smaller lands of Kamao, Pawili, and Kealia, which comprise about one fourth of the Govt. lands, I desire to lease, as they adjoin my own lands.

Your Excellency will observe in the rough draft map I left at the Interior Office, that the lands of Pawili and Kealia are enclosed between my lands of Palawai and Kealia Kapu. Kamao is a barren corner, lying between my lands Palawai, and the leased land Kaohai. There are not more than half a dozen families residing on these small lands, and little or no stock upon them, and they may be properly detached from the bulk of the Govt. lands on the Western half of the island, where the chief part of the population resides.

I trust that some equitable adjustment of these lands will shortly be made, and I beg to be notified respecting any contemplated disposal of them by lease or otherwise ...

P.S. It is proper to mention that I have made improvements on Kamao, Pawili, and Kealia, and it would be an act of gross injustice were I to be dispossessed of the advantages to be derived from them, without being allowed a proper opportunity to enter into competition for leasing the lands upon which the improvements are situated, especially in view of the solemn pledge given me by the Interior Department.³⁴

The following correspondences detail the matter of leasing government lands on Lana'i to Gibson. The first is from Chas. T. Gulick, Interior Department clerk, to P. Nahaolelua, the governor of Maui and regards the receipt of Gibson's application. The attached sketch mentioned is included here as figure 7.

Ua loa mai i ke Keena nei, he palapala noi na Walter Murray Gibson (Kipekona) e makemake ana e hoollimalima i ke kahi mau Aina Aupuni ma Lana'i. Eia ko lokou mau inoa: Kamao, Pawili, Kealia Aupuni, Kaunolu ame Kalulu. I ke wa ia L. Kamehameha ke Kalaihana, ua ae mai no oia iaia no ka hoollimalima i ua mau aina nei, a mahope iho o kona pa ana a me ka hana ana i ke kau wahi pono maluna o ka aina, aka, i kona noho aili ana, ua hoomele ia, ua o Kipekona. Ua walho pu mai no hoi o Kipekona i ka palapala a Stephen Spencer, ke kakauolelo a ke Kuhina Kalaihana e hoioia aku ana ia Kipekona i ka ae ana o ke 'Ili, oia i kona wa e noho ana ma ka Oihana. E hana

There was received at this Office, an application from Walter Murray Gibson (Kipekona), desiring to lease some of the Government Lands on Lana'i. Here are their names: Kamao, Pawili, Kealia Aupuni, Kaunolu and Kalulu. At the time that L. Kamehameha was the Minister of the Interior, he agreed to lease the lands to him, should he build the walls at appropriate places on the land. But when he became King, Gibson was deprived of the right. Gibson has sent the application to Stephen Spencer, secretary of the Minister of Interior, who confirms that the King agreed to it when he was in the office. Will you please look into this and tell me what you think

³⁴Hawaii State Archives, Interior Department Lands.

iho oe iloko o keia hana a e houke koke mai i kou mana'o e pili ana no kana noi. Ke hooili ia aku nei he kii, e hoomaopopoana i ka walho ana o na Aina. Aole no he kii pololei loa aka ma ke ano nui no nate.¹

¹ Hawaii State Archives, Interior Department Book, Volume 12251-252.
² Trans. K. Maly.

Governor Nahaolelua replies to Gulick with the following, dated May 28, 1873, which essentially asks that the lease request by Gibson be denied so as not to deprive the natives of access to the lands. Nahaolelua plainly expresses that Gibson is an untrustworthy individual. Gibson had claimed no more than a half-dozen families resided on the lands; however, Nahaolelua says that "quite a number of natives" live on the lands, who would thus be dispossessed should Gibson acquire the lease.

Ua loa mai ia'u kau palapala o ka la 26 o nei malama e pili ana i ka Palapala noi a W. Gibson "e hoollimalima kekahi mau aina ma Lana'i" eia ko lakou mau inoa, Kamao, Pawili, Kealia, Kaunolu, ame Kalulu.

A ke olelo mai nei i ka wa ia L. Kamehameha ke Kalaihana, ua ae mai oia ia aina ka Hoollimalima i ua mau aina nei, ua pololei keia mau olelo, maanei au e hoakaka ai i na kumu i nele ai o Gibson i ua mau aina nei i ka wa i noho Mui Iho nei of Kamehameha V.

Ua lohe ka moi ina hana a W. Gibson, ma ia hope mai. Eia ka mea, Puhia ae ia o Gibson i ke ahi a pau loa aku ka mauu o ka aina i ka ia e ka ahi. A olelo iho ia o Gibson i kana o Lana'i he mea walwal ole ka Hanai hoiohiohona, o ka mahiai oia ka mea waiwai o ka aina a he mea hooikaika no hoi ia i ke kino o ke kanaka a he mea no hoi ia e nui ai ka hanau ana a na keiki. Ia lohe ana o kanaka ia mau olelo lawe aku ia lakou ina a oi ae paha nui loa na hipa a Gibson, aka, aole i mahia ua wahi nei i pau i ke ahi, ua lohe Mui Iho hana Gibson.

Eia kekahi ua olelo o Gibson i na Hoohanau o ka Hoomana Molemona e lawe mai i ko Kauai, ko Oahu, Molokai, Maui, Hawaii i no Dala no ke kua'ana i ka aina ma Lana'i

about this request. There is attached, a sketch that shows the location of the lands. It is not an accurate sketch but gives a general rendering.²

I received your letter of the 26th day of this month, relative to the application of W. Gibson, "to lease some lands on Lana'i," these being their names, Kamao, Pawili, Kealia, Kaunolu and Kalulu. And that during the time that L. Kamehameha had the interior, he had consented that he was to get the lease of said lands. That statement is true. Here I will explain the reasons why Gibson was refused said lands during the time that Kamehameha V was King. The King had heard after that what Gibson had done. This is the first: Gibson set fire to the grass on the land and was all burnt up by the fire, then Gibson said to the natives of Lana'i, that there was no benefit from raising animals, that farming is what will enrich the land, and will make the body of the person strong, and would be the means of having a lot of children born. When the natives heard these words, they took their sheep to sell to Gibson, and in one month and a little over, Gibson had plenty of sheep, but the place which had been burnt was not cultivated, the King heard of these doings of Gibson. Here is another: Gibson told the members of the Mormon Religion on Kauai, Oahu, Molokai, Maui, and Hawaii, to secure money to buy land on Lana'i, that is Palawai. Gib-

son said it was to belong to the Religion and to be their land, but when the deed of said land of Palawai was made out, only Gibson's name was written on the deed, and to his heirs. The Mormon Religion had nothing. Because of these smart dolings of Gibson, and which fell upon the Hawaiian Nation, doubt was entered into to the King's mind of this distress having fallen on some of his subjects, that is the reason why Gibson was without any land.

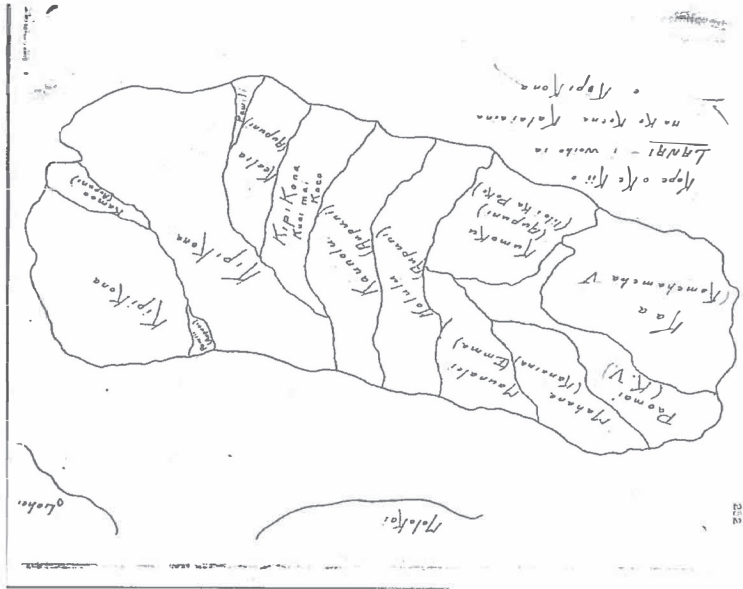
Here is another smart doing of Gibson which was reported by the people of Lanai. Gibson bought the land of Kaa, and it became his, a pen was built on said land of Kaa, then he took his sheep to Kaa from Palawai, the native sheep went too, and entered the pen at Kaa and remained there about two weeks. Then they were taken again from Kaa to Palawai, they mixed again with the natives' sheep and again entered that pen. The natives saw that their were inside the pen, having their marks. They went after them to bring them back. Gibson said very nicely to them, wait a while, I am busy now, I am going to Lahaina. And when he got to Lahaina, and some days passed, then he went to Honolulu. And after some days were passed there, he came back. The owner of the sheep went to get his, and only the parent sheep which had the mark was released, and the ewes were kept in the pen. But, they are still on Lanai who saw Gibson doing this.

Therefore, I am only letting you know what I think, that the lease to this fellow is unsatisfactory. If this report, however, is acceptable to the one in authority over such matters, that is, the Minister of the Interior, "E.O. Hall." And there are quite a number of natives living on these lands. But I do admire Gibson for being so smart.²

Therefore, I am only letting you know what I think, that the lease to this fellow is unsatisfactory. If this report, however, is acceptable to the one in authority over such matters, that is, the Minister of the Interior, "E.O. Hall." And there are quite a number of natives living on these lands. But I do admire Gibson for being so smart.²

¹ Hawaii State Archives, Interior Department Lands.
² Trans. K. Maly.

Figure 7: Sketch map depicting disposition of lands of Lanai by W. M. Gibson, May 26, 1873 (Hawaii State Archives).



Governor Nahaolelua writes again to Gulick on June 5, 1873.

Ua loa ma i a'u kuu palapala o ka la 2, o June nei, ua ike au i na mea i hailia mai. He nui lo no ka poe e noho ana ma kekahi o kela mau aina o Kalulu, ame Kaunolu, a ma Pawili kekahi mau mea, a o Kamao ame Kealia, aole maopopo loa ia ia'u, no ka mea ua ano huikau ko lakou noho ana.

A ma ka ninau hoi no ko lakou mau kuleana a noho hoolimalima paha, he kuleana no kakahu poe o lakou, aka he kuleana lilihi no.

Nolala, ua hoolimalima no kakou i ua mau aina nei me ke Aupuni maunuli no nae o ke Kauoha a ke Kuhina Kalaiala ia 'a e like no me kela manawa. A no ka'u mau wahi hoohohona o wau no kekahi i uku ia Hoolimalima ana.

Ioko oia hoolimalima ana, ua hookaa pono no kanaka ina makahiki Eha, a i ka lima o ka makahiki, ua koe nae \$265. i kaa ole mai, a o ka nui o na Dala i kaa mai \$1735.00. Oia iho ia ka loa ame ke koena.

Ina no e lilo o Kahulu ame Kaunolu ia Gibekona a kahi no ia i lehuiehu ai ona kanaka, aole no he nui loa o na kanaka ma Lanai, oia wale no ka'u mea hat aku.¹

1 Hawaii State Archives, Interior Department Lands.
2 Trans. K. Maly.

Governor Nahaolelua writes the following to the Minister of the Interior, E. O. Hall on June 13, 1873.

Ua loa ma i a'u kuu palapala, ua ike au ina olelo i hailia mai. E pono nae e helu aku au ia oe ina aina o Lanai a pau: Pawili, Kamao, eha Kealia, Kaunohi, Kalulu, Kamoku & Paomai, pau na aina aupuni a lilo aku ia ia Gibesona, Eomo aina, a koe iho ia Ekohi aina.

Aka, ua pono iho ia no ia e like me ka mea i holo ia oukou, a o ka uku Kupono i

proper rent for these six lands, according to my belief, is Two Hundred Dollars per annum, and for the remaining lands for the first lease Two Hundred. That is what I think.²

1 Hawaii State Archives, Interior Department Lands.
2 Trans. K. Maly.

E. O. Hall responds to Governor Nahaolelua on June 16, 1873 with the following letter, which proposes a rental rate to be paid by Gibson for government lands on Lanai.¹

Ua loa ma kuu palapala o ka la 13 o June nei. Me nei na manao o ke 'Li a me na Kuhina, no na aina ma Lanai.

O na aina o Kaunolu a me Kalulu, no na makaainana ia mau aina, a mau no e ohi i na dala, e like ma na makahiki i hala.

O na aina o Kealia, Pawili 2, a me Kamao, e hoolimalima ia Gibesona no na dala \$100.00 i ka makahiki. Pehea ia?

O ka aina o Kamoku, ua lilo i ka Pake; peia kuu iohu. Pehea? Eha mak. ka lilo ana, a eha dala i ka mak.

O ka aina o Mahana, he aina aupuni ia. Ia wai la lilo ana i kela manawa? Ua manao ia C. Kanaiha. Aole ka.

O Paomai, ua ninau no wai ia oe no kela aina. E pane mai, ke oluolu oe...²

1 In the context of the land description it appears that Pawili 2 is the section of Pawili that runs into the basin, between Paliwai and Kealia Aupuni. Based on surveys and testimony, this section of Pawili crosses from windward to leeward Lanai, but on the leeward side is cut off from the coast near the 'Eho' ohomul boundary marker.

2 Hawaii State Archives, Interior Department Book, Volume 12276.
3 Trans. K. Maly.

Then, in 1899, after the death of Gibson, Gibson's estate trustee Cecil Brown wrote to J. F. Brown, the Commissioner of Public Lands, to extend the lease of government lands of Lanai.¹

Cecil Brown, Administrator and Trustee of the Estate of W.M. Gibson, deceased, with the Will annexed. Hereby makes tender the surrender to the Hawaiian Land Commission, leases held by the Estate of W.M. Gibson of Government lands as follows to wit on condition hereafter stated.

Governor Nahaolelua writes again to Gulick on June 5, 1873.

Ua loa ma i a'u kuu palapala o ka la 2, o June nei, ua ike au i na mea i hailia mai. He nui lo no ka poe e noho ana ma kekahi o kela mau aina o Kalulu, ame Kaunolu, a ma Pawili kekahi mau mea, a o Kamao ame Kealia, aole maopopo loa ia ia'u, no ka mea ua ano huikau ko lakou noho ana.

A ma ka ninau hoi no ko lakou mau kuleana a noho hoolimalima paha, he kuleana no kakahu poe o lakou, aka he kuleana lilihi no.

Nolala, ua hoolimalima no kakou i ua mau aina nei me ke Aupuni maunuli no nae o ke Kauoha a ke Kuhina Kalaiala ia 'a e like no me kela manawa. A no ka'u mau wahi hoohohona o wau no kekahi i uku ia Hoolimalima ana.

During that lease, the natives paid properly for four years, and during the fifth year, there was a balance of \$265. which remained unpaid. The amount of money that was paid was \$1735.00 that is the receipts and the balance.

If Kahulu and Kaunolu are given to Gibson, those are the places where there are a number of natives. There are not very many natives on Lanai. That is all I wish to tell you.²

1 Hawaii State Archives, Interior Department Lands.
2 Trans. K. Maly.

Governor Nahaolelua writes the following to the Minister of the Interior, E. O. Hall on June 13, 1873.

I received your letter, and noted what is said therein.

I have better give you a list of all the lands on Lanai: Pawili, Kamao, four Kealia, Kaunolu, Kalulu, Kamoku & Paomai. These are all the Government lands, and Gibson has acquired six lands, and three lands remain.

But it is all right according to what have been decided by you people. And the

1. Lease No. 168 of the lands of Pawili, Kamao and Kealia Aupuni Rental \$150.00 per Annum. Expires June 23rd, 1908.
2. Lease No. 220 Lands of Mahana, Rental \$100.00 per Annum. Expires November 1st, 1907.
3. Lease No. 279 Land of Kaunolu, Rental \$250.00 per Annum. Expires February 9th, 1907.

Also the land of Kalulu as tenant at will, Rental \$200.00 per annum.

The Estate paying for the four leases \$700.00 per annum.

It is hereby proposed to surrender the said leases provided a new lease will be granted for the whole area of lands in said four leases be granted to the Administrator of said Estate of W.M. Gibson at an annual rental of Twenty Five Hundred (\$2500.00) Dollars for a term of lease of Twenty One years from date hereof.

To be granted without Competition.

J. F. Brown writes to Sanford B. Dole, proposing that grazing and sugarcane cultivation might be possible on the lands leased to the W. M. Gibson Estate in the following letter, dated March 9, 1899.

Enclosed please find copy of an application on behalf of W.M. Gibson Estate for surrender and for releasing of certain Public Lands held by Gibson Estate on the Island of Lanai.

The total area concerned in this application is about 29,341 acres.

The larger part of this is grazing and mountain land but a portion on a rough estimate not less than 2000 acres might be adapted to cane growing if supplied with water. This area of 2000 acres, say below 600 feet level, would be found on the lands of Mahana, Kaunolu and Kalulu named above, these being on N.E. side where plantation site is proposed. The lands of Paawili, Kamao and Kealia may or may not be included in proposed plantation site. If so included, the possible cane area would be largely increased. I do not understand that any authority exists under the law for the lease without competition asked for by applicants, but for the satisfaction of applicants who desire the matter to be brought before the Executive, I would respectfully refer the same to their opinion at a convenient early date.³⁵

The document below conveys lands (fee-simple and leasehold), livestock, and personal property on the Island of Lanai from the Gibson Estate to Charles Gay, as ordered by court decision.

This Indenture made this 28th day of August A.D. 1902, between Albert Barnes, Commissioner, of Honolulu, Island of Oahu, Territory of Hawaii of the first part, and Charles Gay of Makaweli, Island of Kauai, in said Territory, of the second part.

³⁵FO & Ec. 1899 Pub Lands Comm.

Whereas, in proceedings duly taken in the Circuit Court of the First Judicial Circuit of said Territory at Chambers in Equity, by and between Gustave Kunst, designs of S.M. Damon, J.H. Fisher, and H.E. Waly, copartners under the firm name of Bishop & Company, Plaintiffs and H.N. Pain and Elise S. U. Neumann, sole devisee and Executive under the last Will and testament of Paul Neumann, deceased, and Henry Holmes, Trustee of Elsie S.V. Neumann, and S.M. Damon, S.E. Damon and H.E. Waly, copartners doing business under the firm name and style of Bishop & Company defendants to enforce the Decree of Foreclosure and Sale theretofore made and filed in the suit of S.M. Damon et al vs. Cecil Brown, Administrator with the Will annexed of Walter Murray Gibson and Trustees of the Estate of said Walter Murray Gibson, deceased, under said Will et al., it was ordered adjudged and decreed by an order made on the 24th day of June A.D. 1902 by the Honorable George D. Gear, Second Judge of the said Circuit Court that the said Decree of Foreclosure and Sale be enforced by a sale of all and singular the real and personal property and assets of the estate of the said Walter Murray Gibson, deceased, hereinafter set forth, and that the same be sold at public auction in said Honolulu at the front door of the Court House (Aliiolani Hale), by and under the direction of the said Albert Barnes, who was by said Decree appointed a Commissioner to sell the said property and was duly authorized to give public notice of, make arrangements for and conduct the sale as set forth in said order.

And whereas, the said Commissioner, pursuant to the said order and direction, after giving public notice of the time and place of sale as in said order required did, on the sixteenth day of August A.D. 1902, at the front door of the Court House (Aliiolani Hale) in said Honolulu expose to sale at public auction all and singular the said premises and property with the appurtenances at which sale the said premises and property hereinafter described were sold to the said Charles Gay for the sum of One Hundred and Eight Thousand Dollars (\$108,000.00) that being the highest sum bid for the same, and Whereas the proceedings of said Commissioner in the premises were duly reported to the said court, and the sale approved and confirmed on the 25th day of August A.D. 1902, as by the records of said court more fully appears, and the said Commissioner was thereupon by an order of said court then made, directed to execute to said Charles Gay a conveyance of said premises and property, pursuant to the sale so made as aforesaid ...

And the said Albert Barnes, Commissioner, as aforesaid, doth hereby covenant with the said Charles Gay and his heirs and assigns that notice of the time and place of said sale was given according to the order of said Court, and that the said premises and property were sold accordingly at public auction as above set forth.

Schedule "A"

Fee Simple.

First. All that tract or parcel of land situate on the Island of Lanai, containing Five Thousand Eight Hundred and Ninety-Seven and 1-10 (5897, 1-10) acres,

and known as the Ahupuaa of Palawai, and comprised in Royal Patent No. 1093 ...

fourteenth. All that land described in Royal Patent 4767, L.C.A. 10041 conveyed by John S. Gibson to W.M. Gibson by deed dated July 17, 1876 of record in liber 47 fol. 49...

Leases

First. All leases of land on the island of Lanai held by said Walter Murray Gibson on August 31st, 1887, so far as he had the right to assign the same without incurring any forfeiture...

Personal Property

First. All those flocks of sheep on the 20th day of June A.D. 1902 or thereabouts of mixed ages and sexes, on said day depasturing, running or being upon the said island of Lanai and also all that herd of cattle and all horses on said 20th day of June, 1902, also depasturing and running upon the said island of Lanai on said day, all formerly belonging to the Estate of Walter M. Gibson, deceased, together with all the natural increase of the said flocks and herds, and also all the wool, then upon the said sheep and which has since that time been produced and shorn from said sheep, and their said increase save and except such sheep, cattle and wool as have been sold with the consent of the said plaintiff.

Second. All wool presses, wagons, carts, harnesses, tools implements, chattels and effects belonging to said Walter Murray Gibson on said August 31st, 1887, situated on the island of Lanai, at said time and now in and upon said lands or any of them.

The flocks of sheep and their increase are now estimated at about 18,000 head.

The herd of cattle with their increase are now estimated at about 240 head.

The herd of horses with their increase are now estimated at about 210 head.

In witness whereof the said Albert Barnes has hereunto set his hand and seal the day and year first above written ...³⁶

2.4 Ranching Operations on Lanai, 1854-1951

Goats, sheep, cattle, the European boar, and horses were introduced to the islands between 1778 and 1810. During those early years, Kamehameha I and his chiefs placed *kapu* over the newly introduced animals to ensure that their populations would grow. In the fifty-year period from 1780 to the 1830s, populations of these non-native animals—like the *hipa* (sheep) and *pua'a bipi* or *pipi* (wild steer or cattle), and *kao* (goats)—grew to become a great nuisance to the Hawaiian population, and had devastating effects on the Hawaiian environment.

Records indicate that the first of these introduced ungulates were brought to Lanai around the 1830s, where a few native tenants, living under landed chiefs, managed the

³⁶Bureau of Conveyances, Liber 242, p. 91-95.

populations. In 1848, a new system of land management was instituted in the Hawaiian Kingdom, and individuals of means were granted large tracts of land. When fee-simple title to land was granted to native Hawaiians and foreign residents who had sworn oaths of allegiance to the king, formal efforts at controlling the *hipa*, *pipi*, *kao*, and other grazers were initiated.

Ranching was a part of Lanai's history for close to 100 years, in the period from ca. 1854 until closure of the ranch in 1951. Initially, Mormon elders brought livestock to Lanai as a part of their effort to establish a mission in the uplands at Palāwal. In 1862, Walter Murray Gibson took over the Mormon settlement, and focused the livestock efforts on herds of sheep and goats, of which nearly 100,000 roamed the island, almost uncontrolled by the 1890s. As a result, Lanai suffered from rapid deforestation and a drying up of the island's water resources. This impacted every other aspect of life on Lanai and was one of the contributing factors to the continual decline in the native population of the island.

From 1910 to 1951, Lanai ranch operations focused on cattle and a steady decline in the population of other livestock. The steady transition to cattle grazing led to the eradication of tens of thousands of goats, sheep, and pigs—many driven over the cliffs of Ka'āpahu in Ka'a—in an effort to reduce impacts on the steadily decreasing pasture. In 1914, the *Mauī News* reported on a visit by rancher-investor J. T. McCrosson to Lanai under the heading "Big improvements on Lanai." McCrosson makes specific reference to the leeward pastures on the island, extending from the 150 ft. to 1,000 ft. elevation.

I spent a week on Lanai inspecting the ranch. The lee side of the island is greener than it has been for years. The finest *Pipi* grass pastures in the Territory extend in a broad belt the whole length of the island, from 150 feet above sea level to about 1000 feet elevation. The belt varies from a quarter to two miles wide. Up in the shallow crater that occupies the center of Lanai a good many hundred acres have been plowed and planted in Rhodes grass and Paspalum. It formerly took twenty acres of the wild pasture land to support a bullock. The Paspalum pastures now fatten fifty head of stock on every hundred acres.³⁷

In 1929, L. A. Henke published *A Survey of Livestock in Hawaii*,³⁸ which included the following description of the Lanai Ranch operations. Henke notes that a water line system and extensive fences were made on the island. Describing the basic ranching operations on Lanai, Henke reported

The island of Lanai, while primarily given over to the growing of pineapples since 1924, still has an area of 55,000 acres of fairly well grassed but rocky and rather arid country extending in a belt around the 55 miles of coast line of Lanai, that are utilized as ranch lands and carry about 2,000 Herefords and 180 horses. This belt is from two to four miles wide and extends from the sea to about 1,000 feet in elevation.

³⁷*Mauī News*, October 24, 1914, p. 5, c. 1.

³⁸University of Hawaii Research Bulletin No. 5, Honolulu, Hawaii.

The total area of the island is about 140 square miles and it ranges in height from sea level to about 3,376 feet elevation, with an average annual rainfall on a great part of the uplands of about 34 inches.

In 1922 before the upper lands were given over to the more profitable pineapples an area of some 2,000 acres had been planted to Pigeon peas (*Calanus indicus*) and *Paspalum dilatatum*. On the lower, rather rocky, present ranch lands the algaroba tree (*Prosopis juliflora*) is valuable because of its bean crop, and Koa haole (*Leucaena glauca*) and Australian salt bush (*Atriplex semibaccata*) are considered desirable forage crops. It is planned to further improve the lower pastures by additional planting of the above crops and by light stocking and resting present pastures.

In the future the ranch will not do much more than raise beef and saddle horses for the pineapple plantation needs. The ranch, though a part of the Hawaiian Pineapple Company's property, still operates as the Lanai Company, Ltd.

The Hawaiians formerly herded goats, probably for their skins on the uplands of Lanai, and some agricultural work was done by Walter Murray Gibson, who arrived in 1861, in connection with the Mormon Church. Gibson acquired considerable land and when he died in 1888 his daughter, Tabula Lucy Hayselden, became the owner. Gibson and the Hayseldens developed a sheep ranch on the island, much of which was then owned by the Government and by W.G. Irwin.

Irwin later acquired the Government lands and the Hayseldens about 1902 sold out to Charles Gay and nearly the whole island of 89,600 acres was combined under the ownership of Charles Gay, which passed to Irwin in 1910 and from him to John D. McCrosson and associates in the same year, when the Lanai Company, Ltd., was formed. Their interests were sold in 1917 to H.A. and F.F. Baldwin, who in turn sold the property to the Hawaiian Pineapple Co., Ltd., in December 1922, who are the present owners.

Mr. Gay continued with the sheep ranch started by Gibson and Hayselden, probably carrying as high as 50,000 at times, but when the Lanai Company, Ltd., was started in 1910 they changed to cattle and put in extensive provisions for water and fences, and a count in April 1911, gave 20,588 sheep and 799 head of cattle. At the end of 1920 there were only 860 sheep and early in 1923 a count showed that the number of cattle had increased to 5,536 and besides 4,462 had been sold during the previous five years. Reduction of the herd to make room for pineapples was started on a large scale in 1924, and from the end of 1922 to October 1928, 6,764 head of cattle were sold.

Mr. Moorhead was manager for the Hayseldens, Mr. Gay managed his own property for a time, Lt. Barnard was manager for the Lanai Company in 1910, and G.C. Munro, the present manager, took charge in 1911. [19:51-52]

The ranch ended operations in 1951 when the Hawaiian Pineapple Company decided to focus all its efforts on the pineapple plantation.

2.5 Hawaiian Pineapple Company

James Dole, owner of the Hawaiian Pineapple Company, purchased the island of Lanai on December 5, 1922. The purchase price of the island was \$1.1 million. Nearly \$2 million was spent on improvements to the island, for the development of macadamized roads and the town of Lanai City. In 1926, Dole hosted a tour of the plantation and developing city. The 150-person tour of politicians, businessmen, and friends were impressed with the progress that had been made in the short time on Lanai [29].

Lanai had been often overlooked because the appearance of the island from offshore was dry and desolate, but Dole saw that inland are some arable lands. There were 20,000 acres of land suited to pineapple on the island of Lanai—Hawaiian Pineapple Company considered it as the last of the desirable acreage left in Hawaii. The soil and conditions were desirable, but many improvements had to be made. Many miles of cactus had to be dragged out and removed from the landscape. The Hawaiian Pineapple Company built a harbor at Kaunaloa with a breakwater made of a solid rock cliff that they had busted and transferred. Roads from the fields to the harbor were paved. One of Hawaiian Pineapple Company's old photos shows neat rows of pineapple, with Lanai City in the background. Lanai City was developed for the workers that were brought over [18:17-23].

Miki Camp, ca. 1924-1938 Hawaiian Pineapple Company built several outlying camps from the main Lanai City. One of these camps was Miki Camp, so called because of its proximity to the storied place called Puu o Miki. The camp was situated southeast of the present Maui Electric Company (MECO) power plant on Miki Road.

Several oral history interviews have been conducted with elder *kama'āina* of the plantation era who resided at Miki Camp during their youth. Mrs. Susan Minami Miyamoto penned some of her recollections of the camp, and Mr. Tamo Mitsuana and friends drafted a map of the camp as they recalled it from their youth. Mrs. Miyamoto's recollections and Mr. Mitsuana's map follow below (fig. 8).

Camps of Lanai

There were several camps when I was growing up on Lanai. Three of my siblings were born on Lanai, the first in Namba Camp in 1926, next in Crusher Camp in 1929, and the last in Lanai City in 1932.

Namba Camp was situated at the foot of the hill to the right as you leave the city to go to Manele. The camp was named after Mr. Namba who was in charge of construction workers. Workers were mostly Japanese with a few Koreans who spoke fluent Japanese.

Workers lived rent free in simple cottages, the only furniture being a simple dining table with long benches at each side. The single men lived in one long building with no furniture. Each man had a designated area in the room marked by a single length of mat with a large trunk or basket at the foot of the mat holding his worldly goods. There were nails pounded at the head of the mat to hang their clothes.

Company trucks picked up the men each morning to go to their work site, and returned at pau hana. School children were picked up by a van which first picked up children from Kaunalapau Camp. We dubbed this van the "Black Maria". The van was driven by Mr. Okamoto, Roy Okamoto's grandfather. It was all purpose used as a hearse or ambulance and for other transportation as needed.

The company had many cattle on the island: There were wire fencing strung along Kaunalapau Highway at the top of the hill, and we children ran amongst the cattle to return home from the pathway at the top of the hill.

It was Prohibition Era and my grandma who lived with us, brewed "sake" a Japanese drink made from special rice, brewed in large crocks. Somehow word would get out to the camp that the inspector was coming, and the crocks would be hidden in the thick panini (cactus) bushes until it was safe to bring them home. These crocks would sometimes be stolen from their hiding places.

There were no cars in the camp. An employee of Okamoto Store would come every week or so to take orders for whatever we needed and delivery was made on his next visit. Goods were charged to employee's bango number (employment number) and payment made to the store on payday.

The Medicine Man, as we called him, would come from one of the pharmaceutical houses in Honolulu to fill a large bag for each family filled with medicine for all kinds of illnesses. On his next visit he would note whatever was used since his last visit and collect money for the used drugs. The bag would then be refilled for his next visit. This practice went on for a long time even after the company built a hospital in 1924.

There were outhouses for our use. We had no toilet paper, Sears Roebuck Catalogs were most coveted for use, newspapers were also put to use. There was a bath house tended by one of the women. She would fill the tubs with water. Fire wood was used to heat the water. This bathhouse was a good social gathering place. We would sit around on the bench built inside the tub and talk story.

Crusher Camp came into being in the late 1920's when men who worked with stones were moved to this camp which had a large stone crusher. Stones were plentiful when fields were cleared for pineapple fields. The camp was situated in what is now the end of the airplane runway. It was under the care of Mr. Murayama, and it was men from this camp who worked on the stone wall along Kaunalapau Harbor. It will attest to the good workmanship of these men as it is still standing, having weathered many storms.

Miki Camp was the last, and most well-known of these camps. It was a large camp built on the hill behind what is now the Electric Plant. There were two stables cared for by Matahei Oyama and Shiro Mitsuana. They were used to house the mules used for plowing the pineapple fields. The Mitsuana family was the last to leave this camp. Mrs. Hisako Mitsuana remembers coming to Miki Camp as a bride from Maui. She says their family was the last to leave Miki Camp in 1936. All of the houses were moved to the city.

By this time Filipino workers were starting to come in, and there were Japanese and Filipino workers in camp, and even one Mexican.

Life in the camps was simple. A favorite sport for the boys was climbing the water tanks and lining the rim of these tanks with what was called "tori Mochi", a gluey substance. The birds would get stuck and were gathered for food.

There was also Kaunalapau Camp. There are a few families still living there. There were mostly Japanese and Hawaiian dock workers, and also independent fishermen. By 1935, most of the families had moved to the city.

Life in the camps was simple and fun, and remembered by most with fond nostalgia.³⁹

2.6 Archaeological Background

A few archaeological studies have been conducted in the general vicinity of the Miki Basin 200 Acre Industrial Development project area (see fig. 1, p. 4). The earliest survey by Emory [11] records the baseline data for the area. Emory's survey is reviewed in section 2.6.1. Subsequent studies focused on retracing Emory's work in order to inventory the sites that he originally recorded. These studies are discussed in section 2.6.2. The last phase of archaeological research has been in support of recent land developments and is discussed in section 2.6.3.

2.6.1 Emory Survey

The earliest archaeological investigation on Lāna'i Island was conducted by Emory [11] in the 1920s. This investigation was the first archaeological and ethnographic study of Lāna'i Island. In this work, Emory broadly summarizes Hawaiian cultural traditions of Lāna'i and includes discussions on the traditional oral histories, place names, *material culture*, and archaeology. The work is geographically organized around an inclusive gazetteer that is keyed to numbers on an accompanying map. Since Emory's work was focused on ethnography as well as archaeology, these numbers refer to places of cultural interest in a general sense and may or may not be considered archaeological sites in their conventional sense—as locations that display evidence of past human behavior. Nevertheless, archaeological sites were included in Emory's survey of Lāna'i Island, but, like many of his contemporaries, his focus was on larger archaeological sites, most notably the village of Kaunolu located on the southwestern shore of Lāna'i.

State Inventory of Historic Places archaeological site numbers were later assigned for Emory's sites. The concordance of State Inventory of Historic Places site numbers to their descriptions by Emory is annotated in the margins of Emory's typescript on file in the State Historic Preservation Division.⁴⁰ Emory mentioned petroglyphs located in Miki Basin; however, they were not published and were never assigned archaeological site numbers.

³⁹Notes by Susan Mihami Miyamoto.

⁴⁰Report number L-00006, on file at the State Historic Preservation Division, Kapolei, HI [1.1].

2.6.2 Late Twentieth-Century Investigations

There was a general dearth of archaeological work conducted on Lānaʻi between the 1920s and the 1970s. The next period of archaeological investigations at Lānaʻi was due to the statewide inventory of archaeological sites that occurred in the mid-1970s. This study was focused toward the relocation of previously identified sites, and the consolidation of that information into the new State Inventory of Historic Places system. It was during this effort that Emory's sites were designated their State Inventory of Historic Places numbers. In general, the statewide inventory left the identification of new archaeological sites as a task to be completed for future surveys. Due to this, no new archaeological sites were recorded in the vicinity of the Miki Basin 200 Acre Industrial Development.

Following his work on the statewide inventory of historic places, Robert Hommon produced a paper that outlined his general impression of the archaeology of Lānaʻi Island. He noted that Lānaʻi Island contained the greatest degree of relatively untouched archaeology in the Hawaiian archipelago. He states,

Through a happy set of circumstances, the archaeology of Lānaʻi is almost entirely intact. Despite the fact that nearly 20% of the area of the island is under cultivation for pineapple, less than 2% of the archaeological features recorded by Emory in the early 1920's have been destroyed in the process. [20:1]

He then argued, given the completeness of the archaeological record, that an island-wide research design should be developed in order to direct future investigations. This recommendation also appears to respond to a development plan that was proposed by Castle and Cooke that would have substantially altered the interior and northeast shore of the island. It appears that this broad-scale development of Lānaʻi has not occurred, and no comprehensive island-wide research design is known to have been written.

2.6.3 Cultural Resources Management Studies

In 1985, Ahlo [1] recorded Site 50-40-98-01531 during investigations associated with a proposed sanitary landfill located west of Lānaʻi Airport (see fig. 1, a, p. 4). The site is located in Kaunāpapa'u Gulch and comprises two eroding fire-pit features recorded as Sites 1 and 3, both of which contained charcoal and organic material. Data recovery excavations were recommended for both fire-pit features.

In 1987, Site 50-40-98-01531 was relocated by Kam [22] during a field inspection to determine the mitigation requirements of the previously identified cultural resources within the sanitary landfill project area (see fig. 1, a, p. 4). During the inspection, a *midān* scatter and rock alignment were recorded. However, no site numbers were assigned at that time. The two components of Site 50-40-98-01531 were relocated during the project, and it was determined that one of the fire-pit features, Site 1, had been impacted during grading for a nearby road. The other feature, Site 3, was relocated outside of the landfill project area. It was recommended that the area be re-examined by a qualified

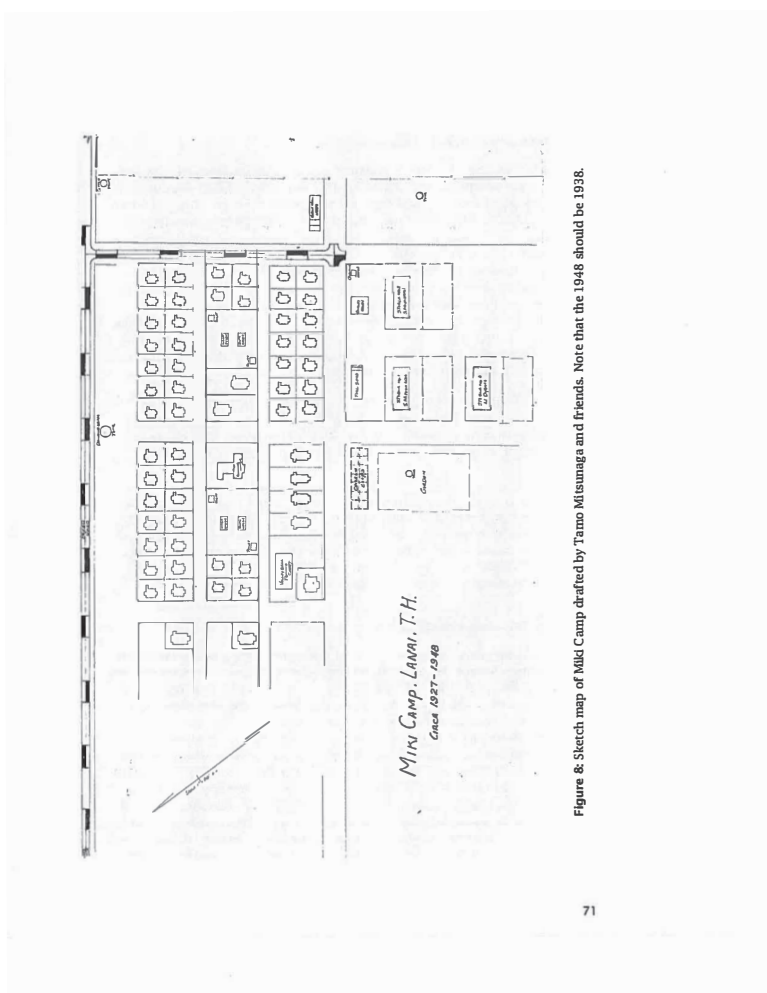


Figure 8. Sketch map of Miki Camp drafted by Tamo Mitsuaga and friends. Note that the 1948 should be 1938.

archaeologist and the identified cultural resources be mitigated prior to construction activities.

Later that same year, Walker and Haun [31] conducted a pedestrian survey and data recovery excavations for the identified cultural resources. During the project, 11 test units were excavated and surface collection of the previously identified midden scatter was conducted. A total of eight archaeological sites were investigated during the project (see fig. 1, a, p. 4).

Site 50-40-98-01531 This site was relocated during the project and two ash concentrations were observed. A single test unit was excavated at each ash concentration search for possible subsurface remains. A total of five basalt flakes, a radiocarbon sample, and a small amount of shell midden were recovered during excavations. The radiocarbon sample was submitted but proved insufficient for dating. The site was interpreted as a temporary habitation area.

Site 50-40-98-01532 This site comprised the previously identified midden scatter and two ash concentrations, likely fire-pit features. Five test units were excavated in and adjacent to the midden scatter and a single shell scraper was collected from its surface. Two of the test units yielded subsurface deposits. The first, TU-1, contained the remnants of a fire-pit feature, seven basalt flakes, and two shell scrapers. A radiocarbon sample was collected from the fire-pit feature for analysis. TU-5 was excavated close to TU-1 and yielded three basalt flakes. A radiocarbon sample was also collected from the surface of one of the ash concentrations. Both radiocarbon samples collected yielded calibrated date ranges between AD 1460 and 1952. The site was interpreted as being used for temporary habitation.

Site 50-40-98-01533 This site comprised two single-course rock alignments. No artifacts were observed on the surface and no artifacts were collected from either of the two test units excavated. The alignments were interpreted as terraces used for dryland agriculture.

Site 50-40-98-01534 This site comprised two basalt *cobble* rock mounds. The mounds were sorted but had no facing of any kind. No test units were excavated and no artifacts were collected from the area. However, historic artifacts were present on and around the two features. The rock piles were interpreted as being prehistoric agricultural clearing mounds, but due to the presence of historic artifacts, that determination cannot be proven with any certainty.

Site 50-40-98-01535 This site was described as a 4 m long curved wall constructed of sub-angular basalt cobbles stacked 50 cm high. No test units were excavated and no artifacts were collected from the area. It was interpreted as being used as a temporary shelter or a modern hunter's blind.

Site 50-40-98-01536 This site comprised a soil and rock terrace and a rock alignment. No artifacts were collected from the surface of the site and a single test unit was excavated within the terrace. A radiocarbon sample was collected from the test unit for analysis and yielded a calibrated date range between AD 1450 and 1954. The site was interpreted as being used for rain-fed agriculture.

Site 50-40-98-01537 This site was described as a rectangular rock mound constructed of sub-angular boulders piled one to two courses high. A test unit was excavated

to bisect the mound and determine its function. No artifacts were observed in and around the mound and no artifacts were collected from the test unit. The mound was interpreted as being a trail marker associated with the Kaunūmāpua Trail located south of the site.

Site 50-40-98-01538 This site is a complex composed of four rock alignments and a rock mound. No artifacts were observed or collected from the site and no test units were excavated. Due to its location near Site 50-40-98-01533 and the lack of portable remains, it was interpreted as being a prehistoric rain-fed agricultural complex.

Based on the radiocarbon date ranges, the sanitary landfill project area and associated sites located at the head of Kaunūmāpua Gulch were interpreted as having been occupied in the mid- to late fifteenth century with re-occupations continuing into the late eighteenth century. Although the area was likely used for temporary habitation and dryland agriculture, the initial occupation of the area and subsequent re-occupations cannot be determined by calibrated date ranges. The wide date ranges, which span five centuries, lack the precision required to be informative. Following data recovery excavations, the sites were deemed insignificant and no further work was recommended.

In 1989, an on-site assessment of the Lānaʻi Airport was conducted by Sinoto [28] (see fig. 1, b, p. 4). This included a literature review of the area and a pedestrian survey of the airport expansion area. Two surface scatters of lithic materials were observed during the assessment. Due to this, an archaeological inventory survey of the airport expansion area was recommended.

Borthwick et al. [3] conducted the archaeological inventory survey for the proposed expansion to Lānaʻi Airport in 1990 (see fig. 1, b, p. 4). The airport is located east of the Miki Basin 200 Acre Industrial Development. A total of seven surface scatters of stone artifacts were found. Limited test excavations consisting of eight backhoe trenches determined that there were no subsurface deposits in the area. The stratigraphy in the trenches showed that the area had been under commercial cultivation for many years. The survey determined that agricultural activities would have destroyed any deposits present, diminishing the need for further work. Only on-call monitoring was recommended.

In 2009, a cultural impact assessment and field inspection was conducted prior to improvements to Lānaʻi Airport [5; 24] (see fig. 1, b, p. 4). Again, no surface or subsurface cultural materials or historic properties were identified due to the previous disturbances mentioned in the 1990 survey.

An archaeological assessment for proposed runway improvements to Lānaʻi Airport was completed in March of 2013 by Lee-Greig and Hammatt [25] (see fig. 1, b, p. 4). Twenty-four backhoe trenches were excavated. The results of the investigation are consistent with the findings from the 1990 survey. No historic properties and no intact subsurface features were documented during the project.

In August of 2013, an archaeological inventory survey for the Central Services Warehouse and Miki Basin pipeline replacement was conducted [6]. The Central Services Warehouse is located within the current project area along Miki Road and adjacent to the existing Maui Electric Company power plant and its associated facilities (see fig. 1, c, p. 4). The

pipeline runs northeast from the warehouse. A pedestrian survey of the warehouse area was conducted, and a total of eight backhoe trenches were excavated in the undeveloped portion of the parcel. A large portion of the area showed signs of surface disturbance and no artifacts or cultural deposits were present on the surface or in any of the backhoe trenches excavated.

In March of 2014, an archaeological assessment was conducted for the Lānaʻi contractor's housing [7]. The parcel is located on 14 acres of land north of the current project area and adjacent to Miki Road (see fig. 1, d, p. 4). During the project, a pedestrian survey of the parcel was conducted and 12 backhoe trenches were excavated. No cultural materials or deposits of any kind were documented due to use of the area for pineapple cultivation over a long period of time.

3 Methods

The principal investigator for the archaeological inventory survey was Thomas S. Dye, PhD. The survey was conducted between May 5 and May 9, 2014 by T. S. Dye & Colleagues BA-level archaeological technician Nathan DiVito with the assistance of Kaulana and Gaelyn Kahoʻohalahala, Katrina Gillespie, Ben Ostrander, Kamakani Palolo, Kalei Ropa, and Zeth Kipi from the Culture and Historic Preservation department of Pūlama Lānaʻi. During the project, a 200 acre parcel of land was surveyed.

A 100 percent pedestrian survey was conducted over the entire project area except for the portion that had been previously surveyed. The survey included a visual inspection of the project location for artifacts, cultural deposits, fire-pit features, lithic scatters, and surface architecture. The survey consisted of numerous transects spaced at 10 m intervals.

Subsurface testing of the project area included the excavation of 31 backhoe trenches. Backhoe trenches were excavated to a depth of approximately 145 cm below ground surface, measured 3 to 4 m in length, and were 1 m wide. Backhoe trenching was conducted with a backhoe and operator provided by Pūlama Lānaʻi.

Digital photographs were taken throughout the survey to record the progress of the work and provide a record of the exposed stratigraphy and photographs of each backhoe trench profile and its location on the landscape were taken. A photo log was kept in the field notebook indicating the subject of the photograph, the direction the camera was pointing, and other information as appropriate.

The location of each trench excavation was recorded with a differentially corrected Global Positioning System (GPS) device. Stratigraphic information was recorded in a field notebook and a stratigraphic profile was recorded for each backhoe trench. Stratigraphic information was recorded with the method described by Harris [17]. Sediment deposits were assigned a *unit of stratification number*, referred to here as a *context*. Stratigraphic profiles were recorded and illustrated in the field notebook. Profile illustrations were drawn to a scale of 1:10. The profile information adequately defined the *stratigraphic relationships* of each context.

A depositional *phase model* was developed to explain the origin of the observed material. *Phasing* is an analytic method of correlating deposits with similar character and stratigraphic position [17:105]. The same stratigraphic contexts were observed at each test trench. A general depositional pattern was observed in the field; this pattern is brought out by assigning each context with similar content and stratigraphic position to one of the phases described below:

Phase 1 Naturally deposited terrestrial sediments.

Phase 2 Cultural deposits.

Phase 3 Plow zone/secondarily deposited soils.

Sediment samples were collected and recorded in a bag list kept in the field notebook. All identified stratigraphic contexts are listed in appendix A. All samples collected during the project are listed in appendix B. All artifacts collected are listed and described in appendix C.

In the laboratory, the context descriptions and bag list were entered into the T. S. Dye & Colleagues, Archaeologists database. Sediments were described for texture using the method described by Thien [30], and for color with reference to a Munsell® soil color chart [16]. Profile illustrations were scanned and drafted using vector graphics software. All artifacts collected during the project were scanned and digitally recorded using a flatbed scanner.

Prior to the survey, a review of all available historical literature and previous archaeological studies was conducted. In addition, longtime Lānaʻi residents—Kapā Maly, the Vice President of Culture and Historic Preservation for Pūlama Lānaʻi; Kaulana Kahoʻohalahala; and the staff of the Pūlama Lānaʻi Culture and Historic Preservation department—were consulted for their knowledge and insight on the project areas.

All artifacts and samples collected during the project were analyzed at laboratory facilities provided by the Culture and Historic Preservation department of Pūlama Lānaʻi. All project documentation and notes will be permanently stored at the T. S. Dye & Colleagues, Archaeologists laboratory. All sediment samples collected were discarded in the areas from which they came and all artifacts collected during the project will be permanently stored at facilities provided by Pūlama Lānaʻi.

4 Field Results

A 100 percent pedestrian survey was conducted for the Miki Basin 200 Acre Industrial Development. Visibility within the parcel was poor due to tall grasses and dense vegetation. Soil was only visible between and under low-lying plants, in and along deer trails that cross the area, and within two drainage cuts that run north to south across the northern portion of the parcel. Black plastic fragments and tubing, indicative of pineapple cultivation, were observed over the entire parcel. No Land Court Awards or previously recorded archaeological sites were present within the parcel.

During the pedestrian survey, two isolated finds of secondarily deposited adze rejects, a secondarily deposited historic artifact scatter, a secondarily deposited lithic scatter,

and an exposed fire-pit and lithic scatter, Site 50-40-98-1980, were documented (fig. 9). The two isolated finds are secondarily deposited adze rejects that were present on the ground surface of the project area, Context 0. They have been broken during the adze manufacturing process. No other cultural materials were observed or collected around the finds.

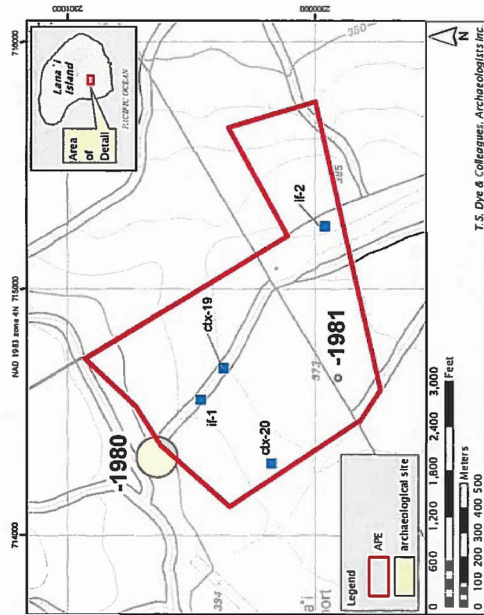


Figure 9: Location of historic properties, Sites 50-40-98-1980 and 50-40-98-1981; artifact scatters, Contexts 19 and 20; and isolated finds 1 and 2, within the Mild Basin 200 Acre Industrial Development area.

The secondarily deposited lithic scatter, Context 19, was located in and along an eroded drainage in the northern portion of the project area (fig. 9). The scatter was approximately 20 m in diameter and comprised 20 or more pieces of flaked basalt. A waterworn cobbler *mauport* and a fragment of an adze reject were collected from the scatter (fig. 10). The scatter is located on a slope and appears to have been secondarily deposited as a result of water erosion along the drainage cut (fig. 11).

The historic artifact scatter, Context 20, is located along the western boundary of the parcel and was approximately 30 m in diameter (fig. 9). Four pieces of semi-porcelain

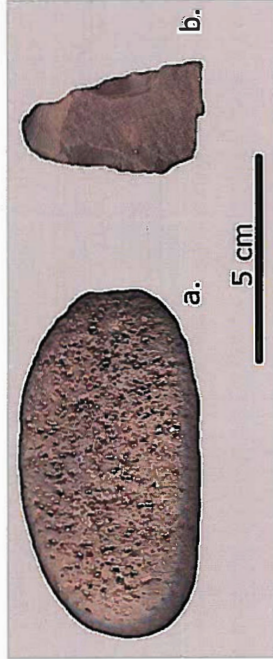


Figure 10: Artifacts collected from the Context 19 lithic scatter: a, waterworn cobbler mauport; b, adze reject, distal portion.



Figure 11: Photograph of a portion of the Context 19 lithic scatter and an eroded drainage cut, looking northwest. Note that Site 50-40-98-1980 is located at the top of the drainage in the eroded area in the background of the photo. The scale is marked in decimeters.

ceramic, two pieces of white earthenware ceramic, and a piece of clear bottle glass were collected from the scatter (fig. 12). An aqua blue "brandy" style bottle lip was also observed within the scatter but was not found during surface collection.

The base fragment of a semi-porcelain cup with a partial maker's mark was the only artifact from the scatter that had diagnostic characteristics (fig. 12, a). The partial maker's mark read "... MARK/MADE IN JAPAN" around a rising sun logo. In August of 1921, the United States Customs Bureau required all Japanese ceramics to be marked with "JAPAN" or "Made in Japan" as "Nippon" was used on imported Japanese ceramic up until that time. Imports of Japanese ceramics ceased in 1941 due to World War II and did not resume until the end of the war in 1945. The hand painting on a piece that is part of the same

vessel (fig. 12, b) also suggests that it was produced prior to World War II. Taking this into consideration, it is likely that the piece was produced between 1921 and 1941. Since there are no known historic habitation sites in the area in which the scatter was found, it is likely to be associated with Miki Camp, a camp established for the workers of the plantation in the early 1920s which would have been occupied until at least 1947. It is located along Miki Road south of the project parcel and would have been the closest known habitation area to be occupied during the 1921–1941 time period.

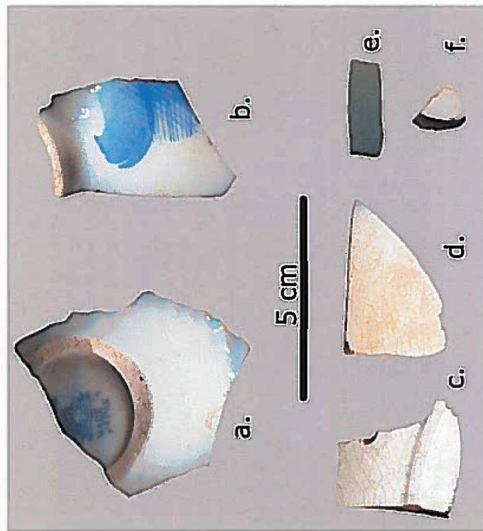


Figure 12: Ceramics collected from the Context 20 artifact scatter: a, semi-porcelain base sherd with partial maker's mark; b, hand-painted cobalt blue semi-porcelain body sherd; c, undecorated white earthenware base sherd; d, undecorated white earthenware rim sherd; e, green glazed semi-porcelain rim sherd; f, undecorated semi-porcelain body sherd.

Site 50-40-98-1980 is located in the northernmost portion of the project area in a highly eroded area along the fence line boundary with the Lānaʻi Airport within and adjacent to the same drainage cut where the Context 19 lithic scatter was recorded (fig. 9). The site comprises two separate components, a lithic scatter and an eroded and exposed fire-pit.

The first component, the Context 18 lithic scatter, is located on the crest of a slope and extends south along a drainage cut. The scatter was approximately 30 x 120 m and contained 30 or more pieces of flaked basalt. All of the artifacts that were observed and

collected from the scatter came from within or adjacent to the existing drainage in areas that lacked vegetation. A cowry shell fragment and several pieces of branch coral were observed within the scatter. Three adze rejects, a hammerstone, a waterworn pebble manuport (possibly a sling stone), and a piece of branch coral were collected from the scatter (fig. 13). No artifacts were observed or collected in the vegetated areas around the drainage. This suggests that the artifacts have either moved downslope from a higher location as a result of water erosion or that the site has eroded and deflated over time. In either case, the artifacts would have been secondarily deposited from their original position.



Figure 13: Artifacts collected from the Context 18 lithic scatter, part of Site 50-40-98-1980: a, dorsal and ventral views of an adze reject, distal portion; b, dorsal and ventral views of an adze reject, proximal portion; c, dorsal and ventral views of an adze reject, distal portion; d, waterworn cobble hammerstone; e, waterworn pebble manuport (possible sling stone); f, branch coral. The three adze rejects are depicted with the dorsal side to the left and the ventral side to the right.

The second component of Site 50-40-98-1980 was an exposed fire-pit remnant recorded as Context 15. It is located within the Context 18 lithic scatter on the crest of the slope in a heavily eroded area. The fire-pit remnant was observed over an approximately 75 cm diameter area and had exposed charcoal and a few small cobble-size fire-affected rocks on the surface and eroding downslope. No black plastic or tubing was observed in or around the fire-pit because the plow zone layer, Context 1, had completely eroded away. It is likely that the fire-pit had originally been truncated by the Context 1 plow zone soil.

Following documentation of the fire-pit on the surface, the fire-pit was bisected twice to determine its size and stratigraphic position (fig. 14).

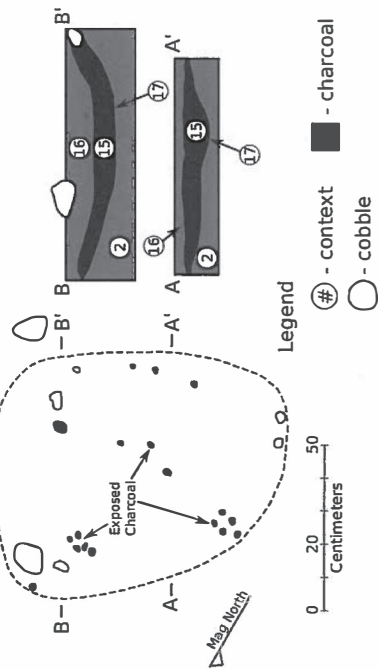


Figure 14: Sketch map and cross section drawing of a subsurface fire-pit recorded as Site 50-40-98-1980.

The first bisection point, A to A', cut the fire-pit in half to expose the stratigraphic section. Following bisection, a 15 cm deep profile was exposed. Context 16, a loose red silty clay loam sediment, was present from the current ground surface to a depth of 3 cm. It appears that the sediment has been deposited over the fire-pit due to water erosion along the drainage. The fire-pit, Context 15, is a band of charcoal that extends from 3 cm below surface to a depth of 12 cm. The fire-pit at this location is approximately 60 cm wide and is basin shaped. The interface between the Context 15 fire-pit and the material it had been dug into, the Context 2 dark reddish brown silty clay loam hard pan soil, was recorded as Context 17. The Context 2 soil was present to the base of excavation at 15 cm below surface.

The second bisection point, B to B', was cut just in front of the two rocks that were exposed on the surface. Following bisection, a 20 cm deep profile was exposed. Context 16, a loose red silty clay loam sediment, was present from the current ground surface to a depth of 6 cm. The sediment has been deposited over the fire-pit due to water erosion along the drainage. The fire-pit, Context 15, is a curved band of charcoal that extends from 6 cm below surface to a maximum depth of 15 cm. The fire-pit at this location is approximately 75 cm wide and is basin shaped. The interface between the Context 15 fire-pit and the material it had been dug into, the Context 2 dark reddish brown silty clay

loam hard pan soil, was recorded as Context 17. The Context 2 soil was present to the base of excavation at 20 cm below surface. A charcoal sample was collected from each profile after bisection for wood taxa identification and ¹⁴C analysis.

In addition to the pedestrian survey, 31 backhoe trenches were excavated within the project area (fig. 15). The purpose of the backhoe trenches was to search for subsurface cultural deposits and to record the soils and depth of the plow zone within the parcel. A single *historic property*, a subsurface fire-pit, was identified in Backhoe Trench 21 during trenching and was recorded as Site 50-40-98-1981. No artifacts were collected from any of the trenches excavated.

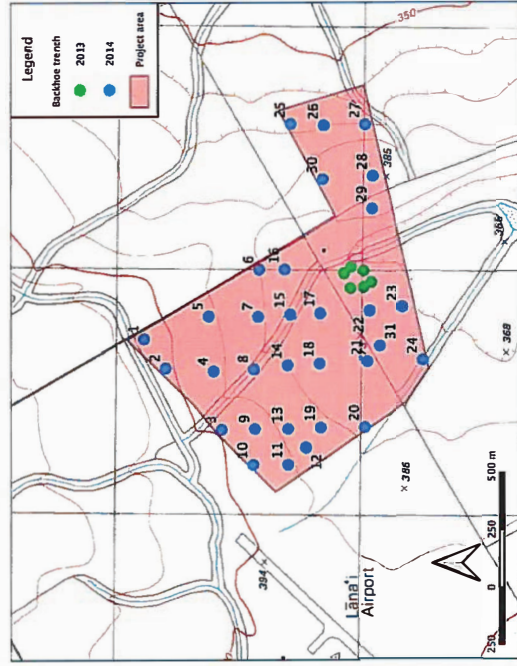


Figure 15: The proposed Miki Basin 200 Acre Industrial Development project area showing the locations of Backhoe Trenches 1-31. The trench locations from the DiVito and Dye [7] investigation are also shown. No trenches were placed in the developed area where the existing Maui Electric Company (MECO) facility lies.

Backhoe Trenches 1-5 were excavated in the northeasternmost portion of the project area and had similar soils (fig. 16, table 7). They contained the plow zone soil, Context 1, to depths ranging from 35 to 45 cm below surface. Context 1 overlay Context 2, a

dark reddish brown silty clay loam hardpan soil present to depths ranging from 65 to 105 cm below surface. Context 2 overlay Context 9, a dark brown silty clay loam present to depths ranging from 100 to 130 cm below surface. It overlay Context 8, a dark reddish brown silty clay loam with gray and red degrading rock fragments present to the base of excavation in each trench.

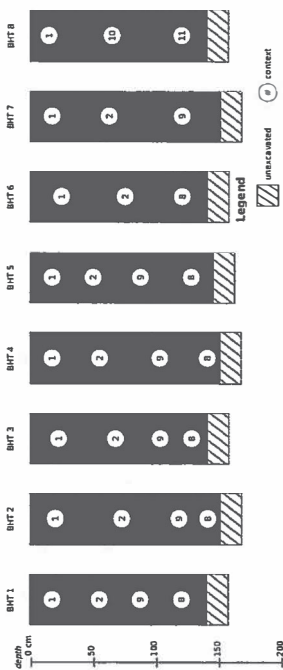


Figure 16: Stratigraphic profiles for Backhoe Trenches 1-8.

Table 7: Sediment descriptions for Backhoe Trenches 1-8

Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 1	1	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
	2	35-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
	9	75-100	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy/lower boundary	Natural deposition process
Backhoe Trench 8	1	100-140+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 2	1	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
	2	40-105	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
	9	105-130	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy/lower boundary	Natural deposition process
Backhoe Trench 8	1	130-150+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
	3	0-45	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
Backhoe Trench 9	1	45-90	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
	1	90-115	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy/lower boundary	Natural deposition process
	8	115-140+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 4	1	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
	2	35-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
	9	75-130	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy/lower boundary	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
8	1	130-150+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky; moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 5				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky; moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-65	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky; moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	65-110	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; clear, wavy/lower boundary	Natural deposition process
8	1	110-145+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky; moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 6				
1	3	0-50	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky; moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	50-100	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky; moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	100-140+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky; moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 7				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky; moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-90	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky; moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	90-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky; moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 8				
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky; moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
10	3	30-100	Dark reddish brown (2.5YR 2.5/4) terrestrial silty clay loam; moderately sticky; moderately plastic; diffuse, wavy/lower boundary	Natural deposition event
11	1	100-140+	Red (2.5YR 4/8) terrestrial gravelly silty clay loam; moderately sticky; moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

Backhoe Trenches 7, 10, 12-15, 17-21, and 31 were all excavated in the same general area and had similar soils (fig. 17, table 8). They contained the plow zone soil, Context 1, to depths ranging from 35 to 50 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 80 to 130 cm below surface. Context 2 overlay Context 9, a dark brown silty clay loam present to the base of excavation in each trench. This was the most commonly observed profile within the project parcel.

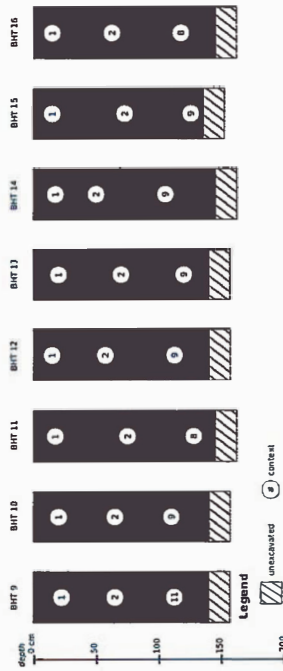


Figure 17: Stratigraphic profiles for Backhoe Trenches 9-16.

Table 8: Sediment descriptions for Backhoe Trenches 9-16

Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 10				
1	3	0-50	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	50-80	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	80-140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 11				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-115	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	115-145+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 12				
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	30-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	85-140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 13				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
2	1	40-100	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	100-140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 14				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-65	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	65-145+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 15				
1	3	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	30-115	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	115-135+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 16				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-90	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	90-145+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 9	1	0-45	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
	2	45-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
	11	85-140+	Red (2.5YR 4/8) terrestrial gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

Backhoe Trench 21 contained a subsurface cultural deposit recorded as Site 50-40-98-1981 (see fig. 9, p. 77). The deposit, documented as Context 12, was a truncated fire-pit remnant exposed in the southern profile of the trench (fig. 18). The fire-pit has been truncated by the plow zone layer, Context 1, present to a depth of 35 cm below surface. It appears to have been hit by a plow moving east to west as the charcoal from the fire-pit is scattered an additional 65 cm to the west along the bottom of the Context 1 plow zone layer. The fire-pit is approximately 65 cm in width, approximately 10 cm thick, basin shaped, and is present between 35 and 45 cm below surface. A single rounded volcanic cobble was observed within the feature. The fire-pit has been excavated into Context 2, a dark reddish brown silty clay hardpan soil present to a depth of 100 cm below surface. The interface between the fire-pit and the Context 2 soil it had been excavated into was recorded as Context 13. Context 2 overlay Context 9, a dark brown silty clay loam present to the base of excavation at 150 cm below surface. A charcoal sample was collected from the Context 12 fire-pit for wood taxa and ¹⁴C analysis.

Backhoe Trench 31 was excavated near Backhoe Trench 21 to search for any additional fire-pit features or associated cultural materials. Backhoe Trench 31 contained the same stratigraphic profile as documented in Backhoe Trench 21. A water line excavation trench with an associated 6 in. PVC pipe was observed in the eastern profile of the backhoe trench. It was recorded as Context 14 and was approximately 25 cm in width and extended to a depth of 140 cm below surface. No additional cultural deposits were documented and no cultural materials were collected from the trench.

Backhoe Trenches 6, 11, 16, and 24 also had similar soils (fig. 19, table 9). They contained the plow zone soil, Context 1, to depths ranging from 35 to 50 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 70 to 115 cm below surface. Context 2 overlay Context 8, a dark reddish brown silty clay loam with gray and red degrading rock fragments to the base of excavation in each trench.

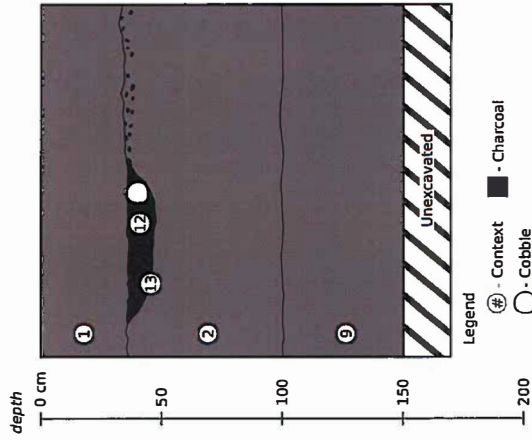


Figure 18: Stratigraphic profile for the Context 12 fire-pit located in Backhoe Trench 21. The feature was later designated Site 50-40-98-1981.

Table 9: Sediment descriptions for Backhoe Trenches 17-24

Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 17	1	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
	2	40-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
	9	85-135+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 18				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	40-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	75-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 19				
1	3	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	40-130	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	130-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 20				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-110	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	110-140+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 21				
1	3	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
12	2	35-45	Black (5YR 2.5/1); very abrupt, irregular, lower boundary	Cultural deposition event

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
2	1	45-100	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
9	1	100-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 22				
1	3	0-55	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	55-140+	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 23				
1	3	0-45	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	45-120	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
7	1	120-145+	Dark reddish brown (5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 24				
1	3	0-50	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	50-70	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
8	1	70-150+	Dark reddish brown (5YR 3/2) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

Backhoe Trenches 23 and 29 were excavated along the southernmost portion of the project area. They contained the plow zone soil, Context 1, to depths ranging from 40 to 45 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam

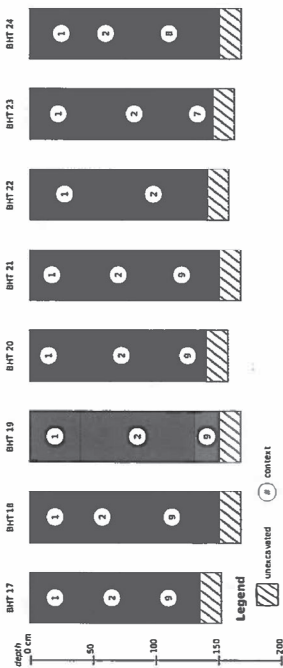


Figure 19: Stratigraphic profiles for Backhoe Trenches 17-24. Note that Backhoe Trench 21 contained the Context 12 fire-pit. See figure 18.

hardpan soil present to depths ranging from 115 to 120 cm below surface. Context 2 overlay Context 7, a dark reddish brown silty clay loam present to the base of excavation in each trench.

Backhoe Trenches 25 and 30 were excavated within the northernmost portion of the parcel located on the east side of Miki Road. They contained the plow zone soil, Context 1, to depths ranging from 35 to 40 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 65 to 70 cm below surface. Context 2 overlay Context 3, a brown silty clay loam present to the base of excavation in each trench.

Backhoe Trenches 26 and 27 were excavated within the easternmost portion of the parcel located on the east side of Miki Road (fig. 20, table 10). They contained the plow zone soil, Context 1, to depths ranging from 35 to 40 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to depths ranging from 75 to 110 cm below surface. Context 2 overlay Context 6, a very dark gray silty clay loam with degrading rock fragments present to the base of excavation in each trench.

Table 10: Sediment descriptions for Backhoe Trenches 25-31

Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 25	1	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
2	1	40-70	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
3	1	70-140+	Strong brown (7.5YR 4/6) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 26	1	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	40-110	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
6	1	110-150+	Very dark gray (5YR 3/1) terrestrial very stony silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 27	1	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
2	1	35-75	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
6	1	75-145+	Very dark gray (5YR 3/1) terrestrial very stony silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 28	1	0-30	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
4	1	30-60	Dark reddish brown (2.5YR 3/4) terrestrial gravelly silty clay loam; moderately sticky, moderately plastic; diffuse, irregular lower boundary	Natural deposition process
5	1	60-145+	Dark reddish brown (2.5YR 2.5/4) terrestrial very gravelly silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

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Context	Phase	Depth*	Description	Interpretation
Backhoe Trench 29	1	0-40	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
		40-115	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
		115-135+	Dark reddish brown (5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 30	1	0-35	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
		35-65	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
		65-150+	Strong brown (7.5YR 4/6) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process
Backhoe Trench 31	1	0-25	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; abrupt, smooth lower boundary	Secondary deposition event
		25-85	Dark reddish brown (2.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; gradual, smooth lower boundary	Natural deposition process
		85-150+	Dark brown (7.5YR 3/4) terrestrial silty clay loam; moderately sticky, moderately plastic; base of excavation	Natural deposition process

* Centimeters below surface.

Four of the backhoe trenches contained unique or anomalous profiles. The first, Backhoe Trench 8, contained the plow zone soil, Context 1, to a depth of 30 cm below surface. Context 1 overlay Context 10, a dark reddish brown secondarily deposited plow zone soil with plastic fragments and tubing present to a depth of 100 cm below surface. Context 10 overlay Context 11, a red gravelly silty clay loam with degrading rock present to the base of excavation at 140 cm below surface.

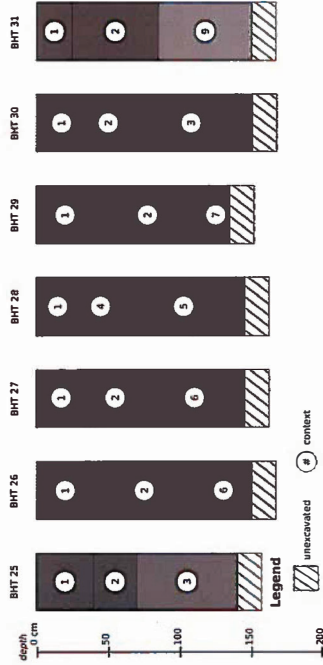


Figure 20: Stratigraphic profiles for Backhoe Trenches 25-31.

Backhoe Trench 9 contained the plow zone soil, Context 1, to a depth of 45 cm below surface. Context 1 overlay Context 2, a dark reddish brown red silty clay hardpan soil present to a depth of 85 cm below surface. Context 2 overlay Context 11, a red gravelly silty clay loam present to the base of excavation at 140 cm below surface.

Backhoe Trench 22 contained the plow zone soil, Context 1, to a depth of 55 cm below surface. Context 1 overlay Context 2, a dark reddish brown silty clay loam hardpan soil present to the base of excavation at 140 cm below surface.

Backhoe Trench 28 contained the plow zone soil, Context 1, to a depth of 30 cm below surface. Context 1 overlay Context 4, a dark reddish brown silty clay loam with degrading rock fragments present to a depth of 60 cm below surface. Context 4 overlay Context 5, a dark reddish brown silty clay loam with red and black degrading rock fragments present to the base of excavation at 145 cm below surface.

5 Summary and Conclusions

At the request of Pulama Lana'i, T. S. Dye & Colleagues, Archaeologists has completed an archaeological inventory survey for the Miki Basin 200 Acre Industrial Development. Pedestrian survey and subsurface testing were conducted to determine the presence or absence of historic properties and cultural materials within the Miki Basin 200 Acre Industrial Development. During the project, a 100 percent pedestrian survey of the area was conducted and 31 backhoe trenches were excavated. Black plastic fragments, indicative of pineapple cultivation, were observed within the surface layer of soil over the entire project area.

The pedestrian survey resulted in the identification and documentation of a secondarily deposited historic artifact scatter, a secondarily deposited lithic scatter, and an historic

property, Site 50-40-98-1980. Because the two secondary artifact scatters lack integrity of setting, location, and association with other sites and features, they do not represent historic properties and no further investigations of the scatters are warranted.

Subsurface testing included the excavation of 31 backhoe trenches. A truncated fire-pit feature, designated Site 50-40-98-1981, was documented in one of the backhoe trenches. All of the backhoe trenches contained plow zone soils overlying natural hardpan and natural silty clay loam, some of which had degrading rock fragments. No artifacts were collected from any of the trenches excavated.

Both historic properties are evaluated as significant for the important information on Hawaiian history and prehistory that they have yielded. The Miki Basin 200 Acre Industrial Development will have an adverse effect on both historic properties and it is recommended that a data recovery plan be developed for Sites 50-40-98-1980 and 50-40-98-1981, and that this plan be implemented prior to proposed construction activities within the parcel. It is further recommended that the data recovery plan develop research questions that can be addressed with data yielded by the following laboratory tasks.

Site 50-40-98-1980 Analysis of the wood charcoal collected from the Context 15 fire-pit for taxa identification and ¹⁴C dating. Analysis of artifacts collected from the Context 18 lithic scatter to further investigate the tool-making reduction sequence utilized on the island [32].

Site 50-40-98-1981 Analysis of the wood charcoal collected from the Context 12 fire-pit for taxa identification and ¹⁴C dating.

A Stratigraphic Contexts

Context	Description
0	Surface of the project area.
1	Dark reddish brown silty clay loam plow zone soil with black plastic fragments and tubing throughout.
2	Dark reddish brown silty clay loam hardpan soil.
3	Brown silty clay loam.
4	Dark reddish brown silty clay loam with degrading rock fragments throughout.
5	Dark reddish brown silty clay loam with red and black degrading rock fragments throughout.
6	Very dark gray silty clay loam with degrading rock fragments throughout.
7	Dark reddish brown silty clay loam.
8	Dark reddish brown silty clay loam with gray and red degrading rock fragments.
9	Dark brown silty clay loam.
10	Secondarily deposited plow zone soils with plastic fragments and tubing.
11	Orange brown silty clay loam with degrading rock throughout.
12	Fire-pit located in Backhoe Trench 21.
13	Interface between the Context 12 fire-pit and the material it had been excavated into, Context 2.

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Context	Description
14	Excavation trench for a 6 in. PVC waterline.
15	Fire-pit remnant exposed on the surface of the Context 2 soil.
16	Secondarily deposited silty clay loam sediment covering the Context 15 deposit.
17	Interface between the Context 15 fire-pit and the soil it had been excavated into, Context 2.
18	Surface scatter of flakes, coral, a cowry shell fragment, two adze rejects, and two possible hammerstones located near the Context 15 fire-pit.
19	Surface scatter of flakes and a single hammerstone.
20	Historic artifact scatter located on the ground surface.

B Field Catalog

Catalog	Site	Unit	Context	Contents
1	No site number	Backhoe Trench 30	1	Sediment
2	No site number	Backhoe Trench 30	2	Sediment
3	No site number	Backhoe Trench 30	3	Sediment
4	No site number	Backhoe Trench 28	4	Sediment
5	No site number	Backhoe Trench 28	5	Sediment
6	No site number	Backhoe Trench 27	6	Sediment
7	No site number	Backhoe Trench 29	7	Sediment
8	No site number	Backhoe Trench 16	8	Sediment
9	No site number	Backhoe Trench 5	9	Sediment
10	No site number	Backhoe Trench 8	10	Sediment
11	No site number	Backhoe Trench 8	11	Sediment
12	No site number	Backhoe Trench 21	12	Charcoal sample
13	No site number	Ground surface	15	Charcoal sample
14	No site number	Ground surface	20	Artifacts
15	No site number	Isolated Find 1	0	Adze reject
16	No site number	No unit	19	Artifacts
17	No site number	No unit	18	Artifacts
18	No site number	No unit	18	Artifacts
19	No site number	Isolated Find 2	0	Adze reject

C Artifact List

Bag	Material	Class	Period*	#	Wt.†	Whole	Notes
15	stone	adze reject	trad.	1	86.1		Discarded due to a transverse fracture sustained during flaking; length 6.7 cm; width 3.7 cm; thickness 1.9 cm.

* trad = Traditional, hist. = Historic; † Weight in grams.

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