Zone-specific Native and Polynesian plants for Maui County

Zone 4

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Sh	Artemisia mauiensis var. diffusa	Maui wormwood, 'ahinahina	2'	3'	1,000' to higher	Dry to Medium
Sh	Bidens hillebrandiana ssp. hillebrandiana	ko'oko'olau	1'	2'	sea to 1,000'	Dry to Wet
Sh	Bidens menziesii ssp. menziesii	ko'oko'olau	1'	3'		
Sh	Bidens micrantha ssp. micrantha	ko'oko'olau	1'	3'		
Sh	Cordyline fruticosa	ti, ki	6'	4'		
Sh	Dianella sandwicensis	'uki	2'	2'	1,000' to higher	Dry to Medium
Sh	Lipochaeta lavarum	nehe	3'	3'	sea to 3,000'	Dry to Medium
Sh	Osteomeles anthyllidifolia	'ulei, e'ulehe	4'	6'	sea to 3,000'	Dry to Medium
Sh	Scaevola sericea	naupaka, naupaka-kahakai	6'	8'	sea to 1,000'	Dry to Medium
Sh	Solanum nelsonii	'akia, beach solanum	3'	3'	sea to 1,00'	Dry to Medium
Sh	Styphelia tameiameiae	pukiawe	6'	6'	1,000' to higher	Dry to Medium
Sh	Vitex rotundifolia	pohinahina	3'	4'	sea to 1,000'	Dry to Medium
Sh	Wikstroemia uva-ursi kauaiensis kauaiensis	'akia, Moloka'i osmanthus				
Sh Tr	Broussonetia papyrifera	wauke, paper mulberry	8'	6'	sea to 1,000'	Dry to Medium
Sh Tr	Myoporum sandwicense	naio, false sandalwood	10'	10'	sea to higher	Dry to Medium
Sh Tr	Nototrichium sandwicense	kulu'i	8'	8'	sea to 3,000'	Dry to Medium
Sh Tr	Dodonaea viscosa	'a'ali'i	6'	8'	sea to higher	Dry to Medium
Tr	Acacia koa	koa	50' - 100'	40' - 80'	1,500' to 4,000'	Dry to Medium
Tr	Aleurites moluccana	candlenut, kukui	50'	50'	sea to 2,000'	Medium to Wet
Tr	Calophyllum inophyllum	kamani, alexandrian laurel	60'	40'	sea to 3,000'	Medium to Wet
Tr	Canthium odoratum	Alahe'e, 'ohe'e, walahe'e	12'	8'	sea to 3,000'	Dry to Medium
Tr	Charpentiera obovata		15'			
Tr	Cordia subcordata	kou	30'	25'	sea to 1,000'	Dry to Wet
Tr	Diospyros sandwicensis	lama	12'	15'	sea to 3,000'	Dry to Medium
Tr	Hibiscus furcellatus	'akiohala, hau-hele	8'			
Tr	Metrosideros polymorpha var. macrophylla	'ohi'a lehua	25'	25'	sea to 1,000'	Dry to Wet
Tr	Morinda citrifolia	Indian mulberry, noni	20'	15'	sea to 1,000'	Dry to Wet

Zone-specific Native and Polynesian plants for Maui County

Zone 4

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Tr	Nestegis sandwicensis	olopua	15'	15'	1,000' to 3,000'	Dry to Medium
Tr	Pandanus tectorius	hala, puhala (HALELIST)	35'	25'	sea to 1,000'	Dry to Wet
Tr	Pleomele auwahiensis	halapepe	20'			
Tr	Rauvolfia sandwicensis	hao	20'	15'	sea to 3,000'	Dry to Medium
Tr	Santalum ellipticum	coastal sandalwood, 'iliahi	8'	8'	sea to 3,000'	Dry to Medium
Tr	Sophora chrysophylla	mamane	15'	15'	1,000' to 3,000'	Medium
Tr	Thespesia populnea	milo	30'	30'	sea to 3,000'	Dry to Wet
V	Alyxia oliviformis	maile	Vine		sea to 6,000'	Medium to Wet

Zone-specific Native and Polynesian plants for Maui County

Zone 5

TYPE: F Fern G Grass Gr Ground Cover Sh Shrub P Palm S Sedge Tr Tree V Vine

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water Req.
G	Colubrina asiatica	'anapanapa	8'	10'	sea to 1,400'	Dry to Wet
G	Fragrostis variabilis	'emo-loa	1'	2'	sea to 3,000'	Dry to Medium
G	Fimbristylis cymosa ssp. spathacea	mau'u-akiaki fimbristylis	0.5'		sea to 1,000'	Dry to Medium
Gr	Boerhavia repens	alena	0.5'	1'	sea to 1,000'	Dry to Medium
Gr	Chamaesyce celastroides var. hehiensis	akoko	2'	3'	sea to 1,000'	Dry to Medium
Gr	Cressa truxillensis	Cressa	0.5'	1'	sea to 1,000'	Dry to Medium
Gr	Heliotropium anomalum var. argenteum	hinahina ku kahakai	1'	2'	sea to 1,000'	Dry to Medium
Gr	Jacquemontia ovalifolia ssp. sandwicensis	pau o hiiaka	0.5'	6'	sea to 1,000'	Dry to Medium
Gr	Lipochaeta integrifolia	nehe	1'	5'	sea to 1,000'	Dry to Medium
Gr	Sesuvium portulacastrum	'aki'aki, sea-purslane	0.5'	2'	sea to 1,000'	Dry to Wet
Gr	Sida fallax	'ilima	0.5'	3'	sea to 1,000'	Dry to Medium
Gr	Tephrosia purpurea var. purpurea	auhuhu	2'	2'	sea to 1,000'	Dry to Medium
Gr, Sh	Hibiscus calyphyllus	mao hau hele, Rock's hibiscus	3'	2'	sea to 3,000'	Dry to Medium
Gr, Sh	Lycium sandwicense	'ohelo-kai, ae ae	2'	3'	sea to 1,000'	Dry to Medium
P	Cocos nucifera	coconut, niu	100'	30'	sea to 1,000'	Dry to Wet
P	Pritchardia hillebrandii	loulu, fan palm	25'	15'	sea to 1,000'	Dry to Wet
S	Mariscus javanicus	marsh cyperus, 'ahuawa	0.5'	0.5'	sea to 1,000'	Dry to Medium
Sh	Argemone glauca var. decipiens	pua kala	3'	2'	sea to 3,000'	Dry to Medium
Sh	Artemisia australis	'ahinahina	2'	2'	sea to 3,000'	Dry to Medium
Sh	Bidens hillebrandiana ssp. hillebrandiana	ko'oko'olau	1'	2'	sea to 1,000'	Dry to Wet
Sh	Bidens mauiensis	ko'oko'olau	1'	3'	sea to 1,000'	Dry to Medium
Sh	Chenopodium oahuense	'aheahea, 'awe'owe'o	6'		sea to higher	Dry to Medium
Sh	Dianella sandwicensis	'ukī	2'	2'	1,000' to higher	Dry to Medium
Sh	Gossypium tomentosum	mao, Hawaiian cotton	5'	4'	sea to 1,000'	Dry to Medium

Zone-specific Native and Polynesian plants for Maui County

Zone 5

Type	Scientific Name	Common Name	Height	Spread	Elevation	Water req.
Sh	Hedyotis spp.	au, pilo	3'	2'	1,000' to 4,000'	Dry to Wet
Sh	Lipochaeta lavarum	nehe	2'	3'	sea to 4,000'	Dry to Medium
Sh	Osteomeles anthyllidifolia	'ulei, eluehe	4'	6'	sea to 3,000'	Dry to Medium
Sh	Scaevola sericea	naupaka, naupaka-kahakai	6'	8'	sea to 1,000'	Dry to Medium
Sh	Senna gaudichaudii	kolomana	5'	5'	sea to 3,000'	Dry to Medium
Sh	Solanum nelsonii	'aka'aka, beach solanum	3'	3'	sea to 1,000'	Dry to Medium
Sh	Vitex rotundifolia	pohinahina	3'	4'	sea to 1,000'	Dry to Medium
Sh	Wikstroemia uva-ursi kauaiensis kauaiensis	'akia, Molokai osmanthus				
Sh - Tr	Myoporum sandwicense	naio, false sandalwood	10'	15'	sea to higher	Dry to Medium
Sh - Tr	Dodonaea viscosa	'a'ali'i	6'	8'	sea to higher	Dry to Medium
Tr	Aleurites moluccana	candlenut, kukui	50'	50'	sea to 3,000'	Medium to Wet
Tr	Calophyllum inophyllum	kamani, alexandrian laurel	60'	40'	sea to 3,000'	Medium to Wet
Tr	Cordia subcordata	kou	30'	25'	sea to 1,000'	Dry to Wet
Tr	Rhus sandwicensis	'aklohala, nau-hele	8'			
Tr	Morinda citrifolia	Indian mulberry, noni	20'	15'	sea to 1,000'	Dry to Wet
Tr	Pandanus tectorius	hala, puhala (HALELIST)	35'	25'	sea to 1,000'	Dry to Wet
Tr	Thespesia populnea	milo	30'	30'	sea to 3,000'	Dry to Wet
V	Ipomoea pes-caprae	beach morning glory, pohuehue	1'			

DO NOT PLANT THESE PLANTS !!!

Common name	Scientific name	Plant family
black wattle	Acacia mearnsii	Mimosaceae
blackberry	Rubus argutus	Rosaceae
blue gum	Eucalyptus globulus	Myrtaceae
bocconia	Bocconia frutescens	Papaveraceae
broad-leaved cordia	Cordia glabra	Boraginaceae
broomsedge, yellow bluestem	Andropogon virginicus	Poaceae
buffelgrass	Cenchrus ciliaris	Poaceae
butterfly bush, smoke bush	Buddleja madagascariensis	Buddlejaceae
cats claw, Mysore thorn, wait-a-bit	Caesalpinia decapetala	Caesalpiniaceae
common ironwood	Casuarina equisetifolia	Casuarinaceae
common velvet grass, Yorkshire fog	Holcus lanatus	Poaceae
fiddlewood	Citharexylum spinosum	Verbenaceae
fire tree, faya tree	Myrica faya	Myricaceae
glorybower	Clerodendrum laponicum	Verbenaceae
hairy cat's ear, gosmore	Hypochoeris radicata	Asteraceae
haole koa	Leucaena leucocephala	Fabaceae
ivy gourd, scarlet-fruited gourd	Coccinia grandis	Cucurbitaceae
juniper berry	Citharexylum caudatum	Verbenaceae
kahili flower	Grevillea banksii	Proteaceae
klu, popinac	Acacia farnesiana	Mimosaceae
logwood, bloodwood tree	Haematoxylon campechianum	Caesalpiniaceae
loquat	Eriobotrya japonica	Rosaceae
meadow ricegrass	Ehrharta stipoides	Poaceae
melaleuca	Melaleuca quinquenervia	Myrtaceae
miconia, velvet leaf	Miconia calvescens	Melastomataceae
narrow-leaved carpetgrass	Axonopus fissifolius	Poaceae
oleaster	Elaeagnus umbellata	Elaeagnaceae
oriental mangrove	Bruguiera gymnorrhiza	Rhizophoraceae
padang cassia	Cinnamomum burmanii	Lauraceae
palmgrass	Setaria palmifolia	Poaceae
pearl flower	Heterocentron subtriplinervium	Melastomataceae
quinine tree	Cinchona pubesens	Rubiaceae
satin leaf, caimitillo	Chrysophyllum oliviforme	Sapotaceae
silkwood, Queensland maple	Flindersia brayleyana	Rutaceae
silky oak, silver oak	Grevillea robusta	Proteaceae
strawberry guava	Psidium cattleianum	Myrtaceae
swamp oak, saltmarsh, longleaf ironwood	Casuarina glauca	Casuarinaceae
sweet vernalgrass	Anthoxanthum odoratum	Poaceae
tree of heaven	Ailanthus altissima	Simaroubaceae
trumpet tree, guarumo	Cecropia obtusifolia	Cecropiaceae
white ginger	Hedychium coronarium	Zingiberaceae
white moho	Heliocarpus popayanensis	Tiliaceae
yellow ginger	Hedychium flavescens	Zingiberaceae

DO NOT PLANT THESE PLANTS !!!

Common name	Scientific name	Plant family
	Jasminum fluminense	Oleaceae
	Arthrostema ciliatum	Melastomataceae
	Dissotis rotundifolia	Melastomataceae
	Erigeron karvinskianus	Asteraceae
	Eucalyptus robusta	Myrtaceae
	Hedychium gardnerianum	Zingiberaceae
	Juncus planifolius	Juncaceae
	Lophostemon confertus	Myrtaceae
	Medinilla cumingii	Melastomataceae
	Medinilla magnifica	Melastomataceae
	Medinilla venosa	Melastomataceae
	Melastoma candidum	Melastomataceae
	Melinis minutiflora	Poaceae
	Olea europaea	
	Oxyspora paniculata	Melastomataceae
	Panicum maximum	Poaceae
	Paspalum urvillei	Poaceae
	Passiflora edulis	Passifloraceae
	Phormium tenax	Agavaceae
	Pinus taeda	Pinaceae
	Prosopis pallida	Fabaceae
	Pterolepis glomerata	Melastomataceae
	Rhodomyrtus tomentosa	Myrtaceae
	Schefflera actinophylla	Araliaceae
	Syzygium jambos	Myrtaceae
Australian blackwood	Acacia melanoxylon	Mimosaceae
Australian tree fern	Cyathea cooperi	Cyatheaceae
Australian tree fern	Sphaeropteris cooperi	Cyatheaceae
Beggar's tick, Spanish needle	Bidens pilosa	Asteraceae
California grass	Brachiaria mutica	Poaceae
Chinese banyon, Maylayan banyon	Ficus mirocarpa	Moraceae
Chinese violet	Asystasia gangetica	Acanthaceae
Christmasberry, Brazilian pepper	Schinus terebinthifolius	Anacardiaceae
Formosan koa	Acacia confusa	Mimosaceae
German ivy	Senecio mikanioides	Asteraceae
Japanese honeysuckle	Lonicera japonica	Caprifoliaceae
Koster's curse	Clidemia hirta	Melastomataceae
Lantana	Lantana camara	Verbenaceae
Mauritius hemp	Furcraea foetida	Agavaceae
Mexican ash, tropical ash	Fraxinus uhdei	Oleaceae
Mexican tulip poppy	Hunnemannia fumariifolia	Papaveraceae
Mules foot, Madagascar tree fern	Angiopteris evecta	Marattiaceae
New Zealand laurel, karakaranut	Corynocarpus laevigatus	Corynocarpaceae
New Zealand tea	Leptospermum scoparium	Myrtaceae
Pampas grass	Cortaderia jubata	Poaceae
Panama rubber tree, Mexican rubber tree	Castilloa elastica	Moraceae
Shoebutton ardisia	Ardisia elliptica	Myrsinaceae
banana poka	Passiflora mollissima	Passifloraceae

Selection

As a general rule, it is best to select the largest and healthiest specimens. However, be sure to note that they are not pot-bound. Smaller, younger plants may result in a low rate of plant survival.[1] When selecting native species, consider the site they are to be planted in, and the space that you have to plant. For example: Mountain species such as koa and maile will not grow well in hot coastal areas exposed to strong ocean breezes. Lowland and coastal species such as wiliwili and Kou require abundant sunshine and porus soil. They will not grow well with frequent cloud cover, high rainfall and heavy soil.

Consider too, the size that the species will grow to be. It is not wise to plant trees that will grow too large.[2] Overplanting tends to be a big problem in the landscape due to the underestimation of a species' height, width or spread.

A large, dense canopied tree such as the kukui is a good shade tree for a lawn. However, it's canopy size and density of shade will limit what can be planted in the surrounding area. Shade cast by a koa and ohia lehua is relatively light and will not inhibit growth beneath it.

Keep seasons in mind when you are selecting your plants. Not all plants look good year round, some plants such as ilima will look scraggly after they have flowered and formed seeds. Avoid planting large areas with only one native plant. Mixing plants which naturally grow together will ensure the garden will look good all year round.[3] Looking at natural habitats helps to show how plants grow naturally in the landscape.

When planting an area with a mixed-ecosystem, keep in mind the size and ecological requirements of each plant. Start with the hardiest and most easily grown species, but allow space for fragile ones in subsequent plantings.

Acquiring natives

Plants in their wild habitat must be protected and maintained. It is best and easiest to get your plants from nurseries (see list), or friend's gardens. Obtain proper permits from landowners and make sure you follow a few common sense rules:

- **collect sparingly from each plant or area.**
- some plants are on the state or Federal Endangered Species list. Make sure you get permits (see app. A,B)

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[1] K. Nagata, P.6

[2] K. Nagata, P.9

[3] Nagata, P.9

Soil

Once you have selected your site and the plants you wish to establish there, you must look at the soil conditions on the site. Proper soil is necessary for the successful growth of most native plants, which preform poorly in hard pan, clay or adobe soils. If natives are to be planted in these types of soil, it would be wise to dig planting holes several times the size of the rootball and backfill with 50-75% compost.[4] A large planting hole ensures the development of a strong root system. The plant will have a headstart before the roots penetrate the surrounding poor soil.[5]

It is recommended that native plants not be planted in ground that is more dense than potting soil. If there is no alternative, dig a hole in a mound of soil mixed with volcanic cinder which encourages maximum root development. Fill the hole with water, if the water tends to puddle or drain too slowly, dig a deeper hole until the water does not puddle longer than 1 or 2 minutes.[6] Well-drained soil is one of the most important things when planting natives as you will see in the next section.

Irrigation

Most natives do very poorly in waterlogged conditions. Do not water if the soil is damp. Water when the soil is dry and the plants are wilting. Once established, a good soaking twice a week should suffice. Deep soaking encourages the development of stronger, and deeper root systems. This is better than frequent and shallow watering which encourage weaker, more shallow root systems.

The following is a watering schedule from Kenneth Nagata's Booklet, *How To Plant A Native Hawaiian Garden*:

WATER REQUIREMENT	WATERING FREQUENCY
Heavy	3x / week
Moderate	2x / week
Light	1x / week

Red clay soils hold more water for a longer period of time than sandy soils do. If your area is very sunny or near a beach, things will dry out faster. Even in the area of one garden, there are parts that will need more or less water. Soils can vary and amount of shade and wind differ. After plants are established (a month or two for most plants, up to a year for some trees), you can back off watering.

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[4] Nagata, p. 6

[5] Nagata, p. 8

[6] Nagata, p. 8

Automatic sprinkler systems are expensive to install and must be checked and adjusted regularly. Above-ground systems allow you to monitor how much water is being put out, but you lose a lot due to malfunctioning of sprinkler heads and wind. The most efficient way to save water and make sure your plants get enough water, is to hand-water. This way you are getting our precious water to the right places in the right amounts.[7]

Fertilizer

An all-purpose fertilizer 10-10-10 is adequate for most species. They should be applied at planting time, 3 months later, and 6 months thereafter. Use half the dosage recommended for ornamentals and pay special attention to native ferns which are sensitive to strong fertilizers. Use of organic composts and aged animal manures is suggested instead of chemical fertilizers. In addition, use of cinders for providing trace minerals is strongly recommended.[8]

Natives are plants which were here hundreds of years before the polynesians inhabited the Hawaiian Islands. They were brought here by birds, or survived the harsh ocean conditions to float here. They are well-adapted to Hawaii's varying soil and environmental conditions. This is why they make prime specimens for a xeriscape garden. However, natives will not thrive on their own, especially under harsh conditions. On the other hand, like any other plant, if you over-water and over-fertilize them, they will die. Follow the instructions given to you by the nursery you buy the plant from, or from this booklet. Better yet, buy a book (suggested readings can be found in the bibliography in the back of this pamphlet), read it, and learn more about native plants. I guarantee that you will be pleased with the results.

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[7] Bornhorst, p. 19-20

[8] Nagata, p. 6

Propagation

There are many ways to propagate and plant-out native Hawaiian species. One of the most thourough and helpful book is Heidi Bornhorst's book, *Growing Native Hawaiian Plants.* The easiest, and best way to obtain natives for the novice gardener is to get them from a reputable nursery (see appendix c). That way all you will have to do is know how to transplant (if necessary) and plant-out when you are ready. These are the two methods I have listed here.

Transplanting

1. Use pots that are one size bigger than the potted plant is in
2. Get your potting medium ready

Good potting medium is a ½, ½ mixture of peat moss and perlite. If the plant is from a dry or coastal area, add chunks of cinder or extra perlite. If it is a wet forest species, add more peat moss or compost. Be aware that peat moss is very acidic and certain plants react severely to acidity.

If the plant is to eventually be planted into the ground, make a mix of equal parts peat moss, perlite, and soil from the area in which the plant is to be planted. Slow-release fertilizer can be mixed into the potting medium.

3. Once pots, potting medium, fertilizer and water are ready, you can begin re-potting. Keep the plant stem at the same depth it was in the original pot. Avoid putting the plant in too large a pot, as the plant may not be able to soak up all the water in the soil and the roots may drown and rot.

Mix potting medium and add slow-release fertilizer at this time. Pre-wet the medium to keep dust down and lessen shock to the plant. Put medium in bottom of pot. Measure for the correct depth in the new pot. Make sure there is from ½ to 2 inches from the top of the pot so the plant can get adequate water. Try to stand the plant upright and center the stem in the middle of the pot.

Water the plant thoroughly after transplanting. A vitamin B-1 transplanting solution can help to lessen the transplant shock. Keep the plant in the same type of environment as it was before, sun or shade. If roots were broken, trimm off some of the leaves to compensate for the loss.[9]

Planting out

1. Plant most native Hawaiian plants in a sunny location in soil that is well-drained.
2. Make the planting hole twice as wide as the root ball or present pot, and just as deep.

If the soil is clay-like, and drains slowly, mix in some coarse red or bland cinder, coarse perlite or

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[9] Bornhorst, p.20-21

coarse compost. Place some slow-release fertilizer at the bottom of the hole.

3. Carefully remove the plant from the container and place it in the hole.

The top of the soil should be at the same level as the top of the hole, if it is too high or too low, adjust the soil level so that the plant is at the right depth.

4. Water thoroughly after you transplant.

Mulch

Most natives cannot compete with weeds, and therefore must be weeded around constantly in order to thrive. Mulch is a practical alternative, which discourages and prevents weeds from growing.

Hawaii's hot, humid climate leads to the breaking down of organic mulches. Thick organic mulches such as wood chips and leaves, may also be hiding places for pests.

Stone mulches are attractive, permanent and can help to improve soil quality. Red or black cinder, blue rock chips, smooth river rocks and coral chips are some natural choices.[10] Macadamia nut hulls are also easy to find and can make a nice mulch.[11]

Never pile up mulch right next to the stem or trunk of a plant, keep it a few inches away.

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[10] Bornhorst, p. 24

[11] Nagata, p. 7

ZONES

The Maui County Planting Plan has compiled a system of 5 zones of plant growth for Maui County. The descriptions of zones and maps for these zones are as follows:

Zone 1:

Wet areas on the windward side of the island. More than 40 inches of rain per year. Higher than 3,000 feet.

Zone 2:

Cool, dry areas in higher elevations (above 1,000 feet). 20 to 40 inches of rain per year.

Zone 3:

Low, drier areas, warm to hot. Less than 20 inches of rain per year. Sea level to 1,000 feet.

Zone 4:

Lower elevations which are wetter due to proximity of mountains. 1,000 to 3,000 feet.

Zone 5:

Salt spray zones in coastal areas on the windward side.

These zones are to be used as a general guide to planting for Maui County. In addition to looking at the maps, read the descriptions of the zones and decide which zone best fits your area. Plants can be listed in more than one zone and can be planted in a variety of conditions. For best results, take notes on the rainfall, wind, sun and salt conditions of your site. Use the zones as a general guide for selection and read about the plants to decide which best fits your needs as far as care and or function.

PLACES TO SEE NATIVES ON MAUI:

The following places propagate native Hawaiian plants from seeds and/or cuttings. Their purpose is to protect and preserve these native plants. Please contact them before going to view the sites, they can provide valuable information and referral to other sources.

1.	Hoolawa Farms P O Box 731 Haiku HI 96708	575-5099
2.	The Hawaiian Collection 1127 Manu Street Kula HI 96790	878-1701
3.	Kula Botanical Gardens RR4, Box 228 Kula HI 96790	878-1715
4.	Maui Botanical Gardens Kanaloa Avenue, Kahului across from stadium	249-2798
5.	Kula Forest Reserve access road at the end of Waipoli Rd Call the Maui District Office	984-8100
6.	Wailea Point, Private Condominium residence 4000 Wailea Alanui, Kihei public access points at Four Seasons Resort or Polo Beach	875-9557
7.	Kahanu Gardens, National Tropical Botanical Garden Alau Place, Hana HI 96713	248-8912
8.	Kahului Library Courtyard 20 School Street Kahului HI 96732	873-3097

PLACES TO BUY NATIVE PLANTS ON MAUI

1. Ho'olawa Farms
   Anna Palomino
   P O Box 731
   Haiku HI 96708
   575-5099

   * The largest and best collection of natives in the state. They will deliver, but worth the drive to go and see! Will propagate upon request

2. Kahanu Gardens
   National Tropical Botanical Garden
   Alau Place, Hana
   248-8912

3. Kihana Nursery
   1708 South Kihei Road
   Kihei HI 96753
   879-1165

4. Kihei Garden and Landscape
   Waiko Road, Wailuku
   P O Box 1058
   Puunene HI 96784
   244-3804

5. Kula Ace Hardware and Nursery
   3600 Lower Kula Road
   Kula HI 96790
   876-0734
   * many natives in stock
   * get most of their plants from Ho'olawa Farms
   * they take special requests

6. Kulamanu Farms - Ann Carter
   Kula HI 96790
   878-1801

7. Maui Nui Botanical Gardens
   Kanaloa Avenue
   (Across from stadium)
   Kahului HI 96732
   249-2798

8. Native Gardenscapes
   Robin McMillan
   1330 Lower Kimo Drive
   Kula HI 96790
   870-1421

   * grows native plants and installs landscapes including irrigation.

9. Native Hawaiian Tree Source
   1630 Piiholo Road
   Makawao HI 96768
   572-6180

10. Native Nursery, LLC
    Jonathan Keyser
    250-3341

11. New Moon Enterprises - Pat Bily
    47 Kahoea Place
    Kula HI 96790
    878-2441

12. Waiakoa Tree Farm - Kua Rogoff
    Pukalani HI 96768
    Cell - 264-4166

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

August 20, 2009

Jeffrey K. Eng, Director
Department of Water Supply
County of Maui
200 South High Street
Wailuku, Hawai`i 96793

SUBJECT: Early Consultation on the Draft Environmental Assessment (EA) for the Lana`i Affordable Housing Project at TMK (2) 4-9-002:058 (por.), Lana`i City, Lanai

Dear Mr. Eng:

Thank you for your letter dated March 20, 2009. Since the 1997 Water Working Group Report (WWGR) the Lana`i Affordable Housing project has been scaled down to encompass 73 acres of the 115 acre parcel. The remaining 42 acres will be transferred to the Department of Education for the expansion of the Lanai High and Elementary School. The 518 units proposed in 1997 has correspondingly been reduced. The project will include a total of 412 units consisting of 239 single family units and 173 multi-family units at a density of 12 units/acre.

The Preliminary Engineering Report for the project will address the estimated water use for the project. Water for the project will be from the private Lanai Water Company. As a limited resource, the water conservation measures recommended by your Department will be incorporated into the project to the extent practicable.

Should you require additional clarification please call me at 244-2015 or email planning@mhplanning.com. A copy of the Draft Environmental Assessment will be forwarded to your agency.

Very truly yours,

Colleen Suyama
Project Manager

CS:yp
cc: JoAnn Ridao, Deputy Director, Department of Housing and Human Concerns
Dwight Mitsunaga, Pacific Architects
Donald Okuhara, Okuhara & Associates
F:\DATA\PAI\LanaiCityHousing\DWS.ECres.doc

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-8461

MAR 0 4 2009

March 2, 2009

Ms. Colleen Suyama, Project Manager
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Maui, Hawaii, 96793

Dear Ms. Suyama,

Subject: Early Consultation Request for 201-H Housing Project in Lana'i City
TMK: (2) 4-9-002:058 (por.)
Fifth Avenue and Nineth Avenue
Lana'i City, Lana'i, Hawaii

Thank you for allowing us to comment on the Early Consultation Request for the subject project.

In reviewing our records and the information received, Maui Electric Company (MECO) may be requiring access and electrical easements for our facilities to serve the subject project site. County of Maui permits for work within right-of-ways may be required prior to MECO's installation. The project's anticipated electrical demand may have a substantial impact to our system, and we highly encourage the customer's electrical consultant to submit the electrical demand requirements, project time schedule, and schedule a meeting with us as soon as practical so that service can be provided on a timely basis.

Should you have any questions or concerns, please call me at 871-2340.

Sincerely,

Ray Okazaki
Staff Engineer

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

August 18, 2009

Ray Okazaki, Staff Engineer
Maui Electric Company, Ltd.
P. O. Box 398
Kahului, Hawai`i 96733-6898

SUBJECT: Early Consultation on the Draft Environmental Assessment (EA) for the Lana`i Affordable Housing Project at TMK (2) 4-9-002:058 (por.), Lana`i City, Lanai

Dear Mr. Okazaki:

Thank you for your letter dated March 2, 2009. We acknowledge receipt of your comments. Our engineering consultant will work closely with your company to ensure our electrical demands are met in a timely manner.

Should you require additional clarification please call me at 244-2015 or email planning@mhplanning.com. A copy of the Draft Environmental Assessment will be forwarded to your company.

Very truly yours,

Colleen Suyama
Project Manager

CS:yp
cc: JoAnn Ridao, Deputy Director, Department of Housing and Human Concerns
Dwight Mitsunaga, Pacific Architects
Donald Okuhara, Okuhara & Associates
F:\DATA\PA\LanaiCityHousing\MECO.ECres.doc

MAR 16 2009

OUR UNION OUR FAMILY

UPW

AFSCME LOCAL 646 AFL-CIO

March 12, 2009

Ms. Colleen Suyama
Project Manager
Munekiyo Hiraga, Inc.
305 High Street, Suite 105
Wailuku, Hawaii 96793

RE: Early Consultation on 201-H Lanai Housing Project in Lanai City, Hawaii; TMK (2)4-9-002:058(por.), letter dated March 5, 2009

Dear Ms. Suyama:

Thank you for your letter inviting the UPW to be a part of the environmental assessment (EA) early consultation process. At this time we do not have written comments to offer regarding the proposed action.

The UPW is designating Matthew Mano as the contact person on Lanai to participate in planning for housing, looking at site plans and offering comments on the mixture of housing (i.e., single family homes, multi-housing for rentals, etc.). Matt can be contacted on his cellular telephone at 563-0506.

We look forward to receiving a copy of the Draft EA, and may, at that time, submit written comments.

Sincerely,

Dayton M. Nakanelua
State Director

c: Lahela Aiwohi
Matthew Mano

HEADQUARTERS - 1426 North School Street ◆ Honolulu, Hawaii 96817-1914 ◆ Phone: (808) 847-2631
HAWAII - 362 East Lanikaula Street ◆ Hilo, Hawaii 96720-4336 ◆ Phone: (808) 961-3424
KAUAI - 4211 Rice Street ◆ Lihue, Hawaii 96766-1325 ◆ Phone: (808) 245-2412
MAUI - 841 Kolu Street ◆ Wailuku, Hawaii 96793-1436 ◆ Phone: (808) 244-0815
1-866-454-4166 (Toll Free, Molokai/Lanai only)

X. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT REVIEW PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

X. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT REVIEW PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

A Draft Environmental Assessment for the subject project was filed and published in the Office of Environmental Quality Control's The Environmental Notice on October 23, 2009.

Comments on the Draft EA were received during the 30-day public comment period. Comments, as well as responses to substantive comments, are included in this chapter.

1. Larry Yamamoto, State Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service
P.O. Box 50004
Honolulu, Hawai`i 96850-0001

2. Ranae Ganske-Cerizo, Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
700 Hookele Street, Suite 202
Kahului, Hawai`i 96732

3. George Young
Chief, Regulatory Branch
U.S. Department of the Army
U.S. Army Engineer District, Honolulu
Regulatory Branch
Building 230
Fort Shafter, Hawai`i 96858-5440

4. Gordan Furutani, Field Office Director
U. S. Department of Housing and Urban Development
500 Ala Moana Boulevard, Suite 3A
Honolulu, Hawai`i 96813-4918

5. Patrick Leonard
Field Supervisor
U. S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 3-122
Box 50088
Honolulu, Hawai`i 96813

6. Russ K. Saito, State Comptroller
Department of Accounting and General Services
1151 Punchbowl Street, #426
Honolulu, Hawai`i 96813

7. Sandra Lee Kunimoto, Chair
Department of Agriculture
1428 South King Street
Honolulu, Hawai`i 96814-2512

8. Karen Seddon
Executive Director
Hawai`i Housing Finance and Development Corporation
677 Queen Street
Honolulu, Hawai`i 96813

9. Theodore E. Liu, Director
State of Hawai`i
Department of Business, Economic Development & Tourism
P.O. Box 2359
Honolulu, Hawai`i 96804

10. Patricia Hamamoto, Superintendent
State of Hawai`i
Department of Education
P.O. Box 2360
Honolulu, Hawai`i 96804

11. Heidi Meeker
Planning Division
Office of Business Services
Department of Education
c/o Kalani High School
4680 Kalanianaole Highway, #T-B1A
Honolulu, Hawai`i 96821

cc: Lindsay Ball, Complex Area Superintendent (Lanai/Moloka`i/ Hana/Lahaina)

12. Micah Kane, Chairman
Department of Hawaiian Home Lands
P. O. Box 1879
Honolulu, Hawai`i 96805

13. Chiyome Fukino, M.D., Director
State of Hawai`i
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawai`i 96814

14. Alec Wong, P.E., Chief
Clean Water Branch
State of Hawai`i
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawai`i 96814

15. Herbert Matsubayashi
District Environmental Health Program Chief
State of Hawai`i
Department of Health
54 High Street
Wailuku, Hawai`i 96793

16. Laura Thielen, Chairperson
State of Hawai`i
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawai`i 96809

17. Dr. Puaalaokalani Aiu, Administrator
State of Hawai`i
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawai`i 96707

18. **Maui/Lanai Islands Burial Council**
130 Mahalani Street
Wailuku, Hawai`i 96793

19. Brennon Morioka, Director
State of Hawai`i
Department of Transportation
869 Punchbowl Street
Honolulu, Hawai`i 96813

cc: Fred Cajigal

20. Major General Robert G.S. Lee, Director
Hawai`i State Civil Defense
3949 Diamond Head Road
Honolulu, Hawai`i 96816-4495

21. Katherine Kealoha, Director
Office Of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, Hawai`i 96813

22. Haunani Apoliona, Board of Trustees Chair
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawai`i 96813

23. Mary Lou Kobayshi, Planning Program Administrator
State of Hawai`i
Office of Planning
P.O. Box 2359
Honolulu, Hawai`i 96804

24. Charmaine Tavares, Mayor
County of Maui
200 South High Street
Wailuku, Hawai`i 96793

25. Deidre Tegarden, Director
County of Maui
Office of Economic Development
2200 Main Street, Suite 305
Wailuku, Hawai`i 96793

25. Gen Iinuma, Administrator
Maui Civil Defense Agency
200 South High Street
Wailuku, Hawai`i 96793

26. Jeffrey A. Murray, Fire Chief
County of Maui
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawai`i 96732

27. Tamara Horcajo, Director
County of Maui
Department of Parks and Recreation
700 Halia Nakoa Street, Unit 2
Wailuku, Hawai`i 96793

28. Jeffrey Hunt, Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawai`i 96793

29. Thomas Phillips, Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawai`i 96793

30. Milton Arakawa, Director
County of Maui
Department of Public Works
200 South High Street
Wailuku, Hawai`i 96793

31. Cheryl Okuma, Director
County of Maui
Department of Environmental Management
One Main Plaza
2200 Main Street, Suite 100
Wailuku, Hawai`i 96793

32. Jeffrey Eng, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawai`i 96793

33. Sol Kahoohalahala, Councilmember
Maui County Council
200 South High Street
Wailuku, Hawai`i 96793

34. Danny Mateo, Council Chair
Maui County Council
200 South High Street
Wailuku, Hawai`i 96793

35. **Hawaiian Telcom**
60 South Church Street
Wailuku, Hawai`i 96793

36. Greg Kauhi, Manager, Customer Operations
Maui Electric Company, Ltd.
P.O. Box 398
Kahului, Hawai`i 96733

38. **ILWU Local 142**
896 Lower Main Street
Wailuku, Hawai`i 96793

39. **ILWU Local 142**
840 Ilima Street
Lanai City, Hawaii 96763

40. **Lanai Community Association**
735 Lanai Avenue 108
Lanai City, Hawaii 96763

41. **Lanai Seniors**
c/o Maggie Masicampo (County)
Margaret Ann Mascicampo
P.O. Box 630867
Lanai City, Hawaii 96763

42. **Lanai Community Hospital**
P.O. Box 630650
625 Seventh Street
Lanai City, Hawaii 96763

43. **HGEA**
Maui Division Office
2145 Kaohu Street
Wailuku, Hawaii 96793-2257

44. **UPW**
UPW Maui Division
841 Kolu Street
Wailuku, Hawaii 96793-1436

45. **Lanai Retail Merchants Association**
Len Gambla
c/o Ohana Pottery
Lanai City, Hawaii 96763

LINDA LINGLE
GOVERNOR

RUSS K. SAITO
COMPTROLLER

SANDRA L. YAHIRO
DEPUTY COMPTROLLER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)1324.9

DEC 10 2009

Ms. Colleen Suyama, Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

Subject: Preliminary 201H Application and Draft Environmental Assessment (EA) for the Proposed Lanai Affordable Housing Project
TMK: (2) 4-9-002:58 (por.)
Lanai City, Lanai

Thank you for the opportunity to provide comments on the Preliminary 201 Application and Draft Environmental Assessment for the proposed Lanai Affordable Housing Project in Lanai City, Lanai. The project does not impact any of the Department of Accounting and General Services' projects or existing facilities, and we have no comments to offer at this time.

If you have any questions, please call me at 586-0400 or have your staff call Mr. Clarence Kubo of the Public Works Division at 586-0488.

Sincerely,

RUSS K. SAITO
State Comptroller

c: Ms. Lori Tsuhako, County of Maui

DEC 2 2 2009

LINDA LINGLE
GOVERNOR

KAREN SEDDON
EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM
HAWAII HOUSING FINANCE AND DEVELOPMENT CORPORATION
677 QUEEN STREET, SUITE 300
Honolulu, Hawaii 96813
FAX: (808) 587-0600

IN REPLY REFER TO:

09:PEO/132

December 18, 2009

Ms. Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

Re: Preliminary 201H Application and Draft Environmental Assessment for the Proposed Lanai Affordable Housing Project, TMK No. (2)4-9-002:058 (por), Lanai City, Lanai

The County of Maui's proposed Lanai Affordable Housing master plan includes approximately 412 single family house lots and multi-family units, 2 park sites, a community center, and detention pond. It is intended to meet the long-term housing needs of the island's residents.

Development of the proposed project is in concert with the housing objectives and policies of the Hawaii State Plan. It will provide greater opportunities to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals.

We suggest that more information be provided on the range of housing affordability. That is, what are the targeted income groups and range of proposed sales prices and rents.

Thank you for the opportunity to comment.

Sincerely,

Karen Seddon
Executive Director

c: Department of Housing and Human Concerns

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

December 29, 2009

Karen Seddon
Executive Director
Hawaii Housing Finance and
Development Corporation
677 Queen Street, Suite 300
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment for the Proposed Lanai Affordable Housing Project at TMK (2) 4-9-002:058 (por.), Lanai City, Lanai, Hawaii

Dear Ms. Seddon:

Thank you for your letter of December 18, 2009. As the project progresses, and further refinements to the conceptual master plan are completed, the Department of Housing and Human Concerns (DHHC) will have a clearer idea of the range of housing affordability that will be targeted. At a later date, the DHHC will provide Hawaii Housing Finance and Development Corporation (HHFDC) with the information.

If additional clarification is required, please contact me at (808) 244-2015.

Very truly yours,

Colleen Suyama
Project Manager

CS:tn
cc: JoAnn Ridao, Deputy Director
Dwight Mitsunaga, Pacific Architects, Inc.
Donald Okahara, Okahara & Associates
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LINDA LINGLE
GOVERNOR

MAJOR GENERAL ROBERT G. F. LEE
DIRECTOR OF CIVIL DEFENSE

EDWARD T. TEIXEIRA
VICE DIRECTOR OF CIVIL DEFENSE

DEC 16 2009

PHONE (808) 733-4300
FAX (808) 733-4287

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

December 15, 2009

Ms. Colleen Suyama
Project Manager
Munekiyo & Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

Preliminary 201H Application and Draft Environmental Assessment
Proposed Lanai Affordable Housing Project, Lanai City, Lanai, Hawaii

Thank you for notification of this upcoming project. After review of the project we recommend the installation of an omni-directional solar powered 118 Dbc siren to be placed in a location between the 'Detention Pond' and the 'Public/Quasi-Public' park as illustrated in Figure 5 of the Draft Environmental Assessment in order to provide ample coverage to the project area.

If you have any questions, please contact Mr. Richard Stercho, Hazard Mitigation Planner, at (808) 733-4300, extension 583.

Sincerely,

EDWARD T. TEIXEIRA
Vice Director of Civil Defense

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

CHARMAINE TAVARES
Mayor
LORI TSUHAKO
Director
JO-ANN T. RIDAO
Deputy Director

2200 MAIN STREET • SUITE 546 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165
MAILING ADDRESS: 200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • EMAIL director.hhc@mauicounty.gov

December 28, 2009

Edward T. Teixeira
Vice Director
Department of Defense
Office of the Director of Civil Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816-4495

Dear Mr. Teixeira:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE LANAI AFFORDABLE HOUSING PROJECT AT TMK (2) 4-9-002:058 (POR.), LANAI CITY, LANAI, HAWAII

Thank you for your letter of December 15, 2009. As we continue to design our Lanai Affordable Housing project, we will coordinate with the Department of Defense to address requirements for an omni-directional solar powered 118 Dbc siren as recommended.

If additional clarification is required, please contact Ms. Colleen Suyama of Munekiyo & Hiraga, Inc. at (808) 244-2015.

Sincerely,

Lori Tsuhako

LORI TSUHAKO, LSW, ACSW
Director of Housing and Human Concerns

LT:kf
cc: JoAnn Ridao, Deputy Director, Department of Housing and Human Concerns
Dwight Mitsunaga, Pacific Architects
Donald Okuhara, Okuhara & Associates
Michael T. Munekiyo, Munekiyo & Hiraga, Inc.

LINDA LINGLE
GOVERNOR

PATRICIA HAMAMOTO
SUPERINTENDENT

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF THE SUPERINTENDENT

December 17, 2009

Ms. Lori Tsuhako, Director
County of Maui
Department of Housing and Human Concerns
2200 Main Street
One Main Plaza Building, Suite 546
Wailuku, Hawaii 96793

Dear Ms. Tsuhako:

Subject: 201H-38 Application and Draft Environmental Assessment,
Proposed Lanai Affordable Housing Project, TMK (2) 4-9-002:058 (por.)

The Department of Education (DOE) has reviewed the Draft Environmental Assessment (EA) for the proposed Lanai affordable housing project.

The DOE provides the following comments:

1. Enrollment: The DOE has updated enrollment figures. The 2009-10 enrollment at Lanai High and Elementary School is 542.

2. Safe and Direct Pedestrian Routes: As stated in the DOE's EA Early Consultation letter, the DOE would like to see safe and direct pedestrian routes between the proposed home and the school identified in the final EA.

3. Traffic Level of Service: The DOE notes that in the Traffic Impact Assessment Report, the future Level-of-Service (LOS) in 2026 with the proposed project is LOS E at certain periods from certain directions without mitigation. The proposed mitigation of a restriped eastbound approach would continue to have an LOS E at certain periods from certain directions. The proposed mitigation of an all-way stop control is projected to have LOS B in the worst case. The DOE strongly prefers the proposed mitigation of the all-way stop control.

4. State Land Use Commission (LUC) District Boundary Amendment (DBA): The EA states that the LUC DBA petition area will include the 73-acre project area. The DOE requests that the County of Maui include the entire 115-acre parcel, including the DOE's 42-acre expansion area in the County's LUC DBA petition area. The DOE sees the expansion of Lanai High and Elementary School as an integral part of this project.

If you have any questions, please contact Jeremy Kwock of the Facilities Development Branch at (808) 377-8301.

Very truly yours,

Patricia Hamamoto
Superintendent

PH:jmb

c: Randolph Moore, Assistant Superintendent, OSFSS
√ Colleen Suyama, Project Manager, Munekiyo & Hiraga, Inc.
Lindsay Ball, CAS, Hana/Lahaina/Lanai/Molokai Complex Areas

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

CHARMAINE TAVARES
Mayor

LORI TSUHAKO
Director

JO-ANN T. RIDAO
Deputy Director

2200 MAIN STREET • SUITE 546 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165
MAILING ADDRESS: 200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • EMAIL director.hhc@mauicounty.gov

December 28, 2009

Patricia Hamamoto
Superintendent
Department of Education
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Ms. Hamamoto:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE LANAI AFFORDABLE HOUSING PROJECT AT TMK (2) 4-9-002:058 (POR.), LANAI CITY, LANAI, HAWAII

Thank you for your letter of December 17, 2009. The following information is provided to respond to your comments:

1. The enrollment figure for Lanai High and Elementary School will be updated in the Final EA to 542.

2. The plans for the Lanai Affordable Housing project are conceptual at this stage of the entitlement process. As the County of Maui progresses in the process, more detailed plans will be developed. We will continue to coordinate pedestrian access between the project and the school with the State Department of Education (DOE) to ensure the safety of students and the public.

3. We will note the DOE's preference for an all-way stop as traffic mitigation for the project.

4. Further discussion between the County of Maui and DOE will be required regarding inclusion of the entire 115-acre parcel in any petition before the State Land Use Commission (LUC). We will arrange a meeting with your staff to identify action steps needed to determine the feasibility of this land use entitlements scenario.

If additional clarification is required, please contact Ms. Colleen Suyama of Munekiyo & Hiraga, Inc. at (808) 244-2015.

Sincerely,

LORI TSUHAKO, LSW, ACSW
Director of Housing and Human Concerns

cc: JoAnn Ridao, Deputy Director, Department of Housing and Human Concerns
Michael Munekiyo, Munekiyo & Hiraga, Inc.
Dwight Mitsunaga, Pacific Architects
Donald Okuhara, Okuhara & Associates

LINDA LINGLE
GOVERNOR
STATE OF HAWAI'I

KAULANA H. R. PARK
CHAIRMAN
HAWAIIAN HOMES COMMISSION

ANITA S. WONG
DEPUTY TO THE CHAIRMAN

ROBERT J. HALL
EXECUTIVE ASSISTANT

STATE OF HAWAI'I
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAI'I 96805

November 23, 2009

Ms. Colleen Suyama, Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai'i 96793

Subject: Proposed Lana'i Affordable Housing Project
County of Maui
Tax Map Key 4-9-002:058 portion.
Lāna'i City, District of Lahaina, Maui

Aloha Ms. Suyama:

Thank you for the opportunity to comment on the Proposed Lana'i Afforadable Housing Project. The Department of Hawaiian Home Lands (DHHL) owns approximately 50 acres on the island of Lāna'i and we are currently in the process of developing a Lāna'i Regional Plan. The DHHL's property is adjacent to the proposed housing project area.

As adjacent landowners, engaging in our own planning process, it is our responsibility to participate and plan appropriately for the larger region. In addition, it is our priority to ensure that DHHL's plans are as consistent as possible with other plans in the area.

In general we support the proposed housing project, but would like to provide the following comments:

1. The proposed affordable housing project should consider DHHL's water requirements for future homestead lots in their development.
2. Coordinate the construction of roadways, waster water pump station, waterlines, drainage system, electrical

infrastructure, park, and community facilities with the DHHL.

3. With the anticipated increase in traffic flow, consider various types of traffic calming to prevent speeding on 5th Street.

We thank you for the opportunity to comment on the project. We will continue, as an adjacent landowner, to do what we can to assist in your planning efforts. If you have any questions, please contact Kaleo Manuel at our Planning Office at 620-9485.

Aloha and mahalo,

Kaulana H.R. Park, Chairman
Hawaiian Homes Commission

Enclosures

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

CHARMAINE TAVARES
Mayor
LORI TSUHAKO
Director
JO-ANN T. RIDAO
Deputy Director

2200 MAIN STREET • SUITE 546 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165
MAILING ADDRESS: 200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • EMAIL director.hhc@mauicounty.gov

December 28, 2009

Kaulana H. R. Park, Chairman
Department of Hawaiian Home Lands
Hawaiian Homes Commission
P.O. Box 1879
Honolulu, Hawaii 96805

Dear Mr. Park:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED LANAI AFFORDABLE HOUSING PROJECT AT TMK (2) 4-9-002:058 (POR.), LANAI CITY, LANAI, HAWAII

Thank you for your letter of November 23, 2009. In response, the Department of Housing and Human Concerns (DHHC) will continue to coordinate development requirements for the proposed project with the Department of Hawaiian Home Lands (DHHL). We again make a commitment to seek opportunities in which the County of Maui can not only coordinate but cost share on needed infrastructure improvements with DHHL's subdivision project and the Department of Education's proposed expansion of the Lanai High and Elementary School.

Further, your concern regarding traffic on Fifth Street is shared by the DHHC. As we progress in the development of our project plans, we will consider traffic calming measures for the project.

If additional clarification is required, please contact Ms. Colleen Suyama of Munekiyo & Hiraga, Inc. at (808) 244-2015.

Sincerely,

Lori Tsuhako

LORI TSUHAKO, LSW, ACSW
Director of Housing and Human Concerns

LT:tn
cc: JoAnn Ridao, Deputy Director
Dwight Mitsunaga, Pacific Architects, Inc.
Michael Munekiyo, Munekiyo & Hiraga, Inc.
Donald Okahara, Okahara & Associates
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DEC 14 2009

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

December 11, 2009

Ms. Colleen Suyama
Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawai`i 96793

Dear Ms. Suyama:

Subject: Preliminary 201H Application and Draft Environmental Assessment (EA) for the Proposed Lanai Affordable Housing Project, Lanai City, Lanai
TMK: (2) 4-9-002:058 (por.)

Thank you for giving us the opportunity to review and comment on this project. The following comments are offered:

1. National Pollutant Discharge Elimination System (NPDES) permit coverage may be required for this project. The Clean Water Branch should be contacted at 808 586-4309.

2. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules, Chapter 11-46 "Community Noise Control". A noise permit may be required and should be obtained before the commencement of this project.

It is strongly recommended that the Standard Comments found at the Department's website: http://hawaii.gov/health/environmental/env-planning/landuse/landuse.html be reviewed, and any comments specifically applicable to this project should be adhered to.

Should you have any questions, please call me at 808 984-8230 or e-mail me at patricia.kitkowski@doh.hawaii.gov.

Sincerely,

Patti Kitkowski

Patti Kitkowski
Acting District Environmental Health Program Chief

c Lori Tsuhako, Dept. of Housing and Human Concerns

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

December 29, 2009

Patti Kitkowski
Acting District Environmental
Health Program Chief
Department of Health
Maui District Health Office
54 High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for the Lanai Affordable Housing Project at TMK (2) 4-9-002:058 (por.), Lanai City, Lanai, Hawaii

Dear Ms. Kitkowski:

Thank you for your letter of December 11, 2009. Please be advised that prior to construction a National Pollutant Discharge Elimination System (NPDES) permit and noise permit will be obtained, if required. Further, we will consider the Department of Health's (DOH) standard comments available on the DOH website and will address any applicable comments, as may be required.

If additional clarification is required, please contact me at 244-2015.

Very truly yours,

Colleen Suyama
Project Manager

CS:lh
cc: JoAnn Ridao, Deputy Director, Department of Housing and Human Concerns
Dwight Mitsunaga, Pacific Architects
Donald Okuhara, Okuhara & Associates
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LINDA LINGLE
GOVERNOR

BRENNON T. MORIOKA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRIAN H. SEKIGUCHI
JIRO A. SUMADA

IN REPLY REFER TO:

STP 8.3483

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

December 21, 2009

Ms. Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

Subject: Lanai Affordable Housing Project – Preliminary 2012H Application and Draft Environmental Assessment (DEA)

Thank you for requesting the State Department of Transportation's (DOT) review of the County of Maui, Department of Housing and Human Concern's (DHHC) project to develop a 412 unit affordable housing development on 73 acres on the island of Lanai.

DOT previously commented on the subject project during the early consultation period in its letter STP 8.3170 dated 3/17/09 (attached). Those comments remain valid.

The DOT Highways Division offers the following additional comments. The Traffic Impact Analysis Report (TIAR) should also analyze and discuss the existing and future traffic conditions at the intersections of Kaumalapau Highway with Manele Road and Fraser Avenue. Pertinent roadway mitigation measures (if necessary) at these intersections should also be incorporated into the traffic report.

DOT appreciates the opportunity to provide comments. If there are any questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at telephone number (808) 587-2356.

Very truly yours,

BRENNON T. MORIOKA, Ph.D., P.E.
Director of Transportation

Attach.

c: Lori Tsuhako, Department of Housing and Human Concerns

LINDA LINGLE
GOVERNOR

BRENNON T. MORIOKA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRIAN H. SEKIGUCHI
JIRO A. SUMADA

IN REPLY REFER TO:

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

STP 8.3170

March 17, 2009

Ms. Colleen Suyama
Project Manager
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

Subject: Lanai 201-H Housing Project
Early Consulation (EC)
TMK: 4-9-002: 058 (por.)

Thank you for requesting the State Department of Transportation's (DOT) review of the subject project.

DOT understands that the subject EC addresses a 73-acre, affordable housing project on the island of Lanai. The 73 acres are part of larger 115-acre parcel that was donated to the County of Maui by Castle and Cooke Resorts. The remaining 42 acres will be utilized by the Department of Education for the expansion of Lanai High and Elementary School. Access to the site will be from proposed extensions of both Fifth Avenue and Ninth Avenue.

The subject project's contribution to the cumulative traffic flow could potentially impact the State highway, Kaumalapau Highway. The Draft Environmental Assessment (DEA) should thus discuss and evaluate project impacts to Kaumalapau Highway in accordance with the following DOT Highways Division Planning Branch comments. Please call the Planning Branch at telephone number (808) 587-1830 to discuss these comments.

1. The DEA should address the additional traffic generated by the project.

2. The DEA should address the types of construction vehicles and heavy equipment that will be used at the job site. The project contactor will need to contact the Highways Division Maui District Office to discuss the need for an Oversize and Overweight Vehicle Permit if the transport of very large construction vehicles and equipment will occur on the State highway facility.

3. During the project construction, DOT expects that the County and its project contractor will exercise all reasonable best management practices to avoid or minimize impacts or inconveniences to the motoring public, bicyclists, pedestrians, etc.

4. The DEA should address construction activity hours.

DOT appreciates the opportunity to provide comments and requests four (4) copies of the project DEA be provided. If there are any other questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at (808) 587-2356.

Very truly yours,

BRENNON T. MORIOKA, PH.D., P.E.
Director of Transportation

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

January 5, 2010

Brennon T, Morioka, Ph.D., P.E.
Director
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

SUBJECT: Comments on the Draft Environmental Assessment for the Proposed Lanai Affordable Housing Project Located at TMK: (2) 4-9-002:058 (por.), Lanai City, Lanai, Hawaii. (EAC 2009/0012)

Dear Mr. Morioka:

Thank you for your letter of December 21, 2009. Your previous comments have been addressed in the Environmental Assessment (EA). Further, your comments regarding the intersections of Kaumalapau Highway with Manele Road and Fraser Avenue have been forwarded to the traffic consultant, Austin Tsutsumi & Associates, Inc. (ATA) for appropriate follow-up.

If additional clarification is required please contact me at 244-2015.

Very truly yours,

Colleen Suyama
Project Manager

CS:tn
cc: JoAnn Ridao, Deputy Director, Dept. of Housing and Human Concerns
Dwight Mitsunaga, Pacific Architects, Inc.
Keith Niiya, Austin Tsutsumi & Associates, Inc.
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Water Resources Research Center
Environmental Center

UNIVERSITY of HAWAI'I MĀNOA

December 23, 2009
EA: 00322

Jo-Ann Ridao, Deputy Director
Department of Housing and Human Concerns, County of Maui
2200 Main Street
One Main Plaza, Suite 546
Wailuku, HI 96793

Dear Ms. Ridao:

Draft Environmental Assessment
Lanai Affordable Housing Project
Lanai City, Lanai

The County of Maui, Department of Housing and Human Concerns proposes the construction of the Lanai Affordable Housing Project – a housing development located in Lanai City on 73 acres of a 115-acre parcel owned by the County of Maui. The proposed project will be comprised of approximately 412 residential units; 173 multi-family units on 14.48 acres of land (12 units per acre), and 239 single-family lots of 5,000 square feet on 29.15 acres of land. The project will be accessible via an extension of Fifth Street, with an extension at Ninth Street also proposed in order to provide for increased traffic circulation.

This review was conducted with the assistance of Jon Matsuoka, Department of Social Work; and Ryan Riddle, Environmental Center.

General Comments

The draft environmental assessment (DEA) for the proposed Lanai Affordable Housing Project lacks details necessary to make an informed judgment of its probable impacts. The DEA states that 412 residential units will be built on 75 acres of land but does not reveal the number of people that will live in these units at full build out. Will the people purchasing these units come from the population already on Lanai or will it attract potential residents from off-island that will move here to work? Will the construction of these units contribute to the population increases discussed on page 25 of the document? In other words, will this project be a driver of population growth or is it responding to the pent up demand for affordable housing that already exists on the island? Perhaps this issue is discussed in more detail in Appendix F but a broader discussion should appear in this part of the DEA. A housing project that could add up to 1000 people to a population of a little under 3,200 in 2000 (or to an estimated 3,700 by 2010) could be significant.

2500 Dole Street, Krauss Annex 19 Honolulu, Hawai'i 96822
Telephone: (808) 956-7361 Fax: (808) 956-3980

Additionally, the draft environmental assessment fails to calculate general/mean island income levels relative to levels of "affordability." What percent of general income would be required to commit to mortgage given the current or anticipated rate? How is housing affordability determined for Lanai residents? In terms of housing demand, the DEA provides no estimation of this need. Given the depressed tourist economy, especially one as self-contained as Lanai, would 400 additional single and multi-family dwellings be needed?

In addition to our general comments we also have several specific comments.

Project Need (p. 4)

Can you define the terms "resort housing" and "workforce / resident housing"? What is the breakdown of each type of housing on Lanai?

In reference to project need, the DEA states "ACM Consulting, Inc. conducted a Lanai Affordable Housing Survey and interviews with representatives of the island's real estate market. Of the respondents in the survey, 41 percent currently rent." What is meant by the phrase "representatives of the island's real estate market"? Who and how many are encapsulated by the catchall term?

Anticipated Development Schedule (p. 11)

The DEA states, "Additional funds will be required before construction can be initiated. The DHHC will need to include the project into the County of Maui budget process as the project proceeds through the proposed entitlements." What level of priority does this project hold in terms of the County of Maui's budgeting?

Existing Conditions (p. 13)

Section 2a refers to Hawaii's climate in relation to the positioning of "storm tracts". This should perhaps be "storm tracks ".

Flora and Fauna (pp. 19-21)

It is customary to cite the scientific name of plant and animal species found in the area of study. Scientific names are more precise than common names.

Existing Conditions (p. 20)

Section 5a states, "The project site does not experience adverse noise or air quality conditions. Noise and airborne pollutants that do exist can largely be attributed to noise and exhaust from occasional construction activities or vehicle traffic in the area." Perhaps this section should read, "The project site does not experience *significant* adverse noise or air quality conditions . . ."

Noise and Air Quality (pp. 20-21)

The DEA states on page 21 that "proper vehicle and equipment maintenance will be utilized, as necessary, to minimize impacts to ambient noise levels during construction." Shouldn't the vehicles and equipment be properly maintained regardless of whether they impact ambient noise levels?

Scenic and Open Space Resources (p. 21)

How is the scenic corridor defined? Does the county designate areas as scenic corridors? Are they mapped out or designated in a community development plan?

Archaeological Resources (p. 22)

In part b of this subsection there is a reference to photographs in Section 5. Does this refer to a section 5 in appendix report D or in another section of the DEA?

Population and the Economy (pp. 25-26)

The unemployment rate on Lanai is relatively high even compared to the U.S. mainland. What effect will the unemployment rate have on the demand for affordable housing?

In the section on potential impacts and proposed mitigation on page 26, it states in the second paragraph, "long-term, the proposed projects will provide both direct and indirect economic benefits to the island's economy." The DEA however, fails to cite any of these future benefits thereby leaving the reviewer to guess what they might be. There may be some long-term economic benefits but there will also be some long-term costs associated with this development. More police and fire protection will be needed due to this project in the long run. This development may also require the expansion of the local school system.

The DEA emphasizes that Lanai's economy is heavily dependent upon tourism; however, the DEA fails to mention any figures that might provide insight into the tourism outlook for the island. What percentage of the island's workforce is employed by tourism? This information is essential as the DEA mentions in Section 3a, "Housing demand on Lanai is directly influenced by tourism, as the hotels need more workers when it is busy." There is also a need to compare the current island housing inventory against the optimal capacity of the hotels. For example, if the hotels were running at full or close to full capacity, how many workers would be needed and how many additional housing units would be needed to accommodate them?

Public Services (pp. 27-31)

Missing from this discussion of public services is any indication of the location or proximity of retail or commercial services to the project. According to the conceptual master plan, (figures 4 and 5 on pages 6 and 7), there are no retail or commercial services planned for the proposed development. How close will these units be to grocery stores, cleaners, barbers, etc.? Will residents of this development be able to walk to retail areas or will it be expected that residents will drive to obtain these services?

Solid Waste Disposal (pp. 30-31)

Is there an estimate for the amount of solid waste that residents will generate per capita? How much of the capacity of the existing landfill will this development use at full build-out? Is it likely that the useful life of the landfill will be significantly shortened by this development at full build-out?

Roadway System (pp. 31-35)

One of the mitigation measures suggested on page 33 to address the traffic impacts of the proposed development is to institute an all-way stop for the Fraser Avenue / Fifth Street intersection. Have the planners considered using a traffic circle instead? Traffic circles typically have better throughput than all-way stops and in many cases don't require cars to stop and start again, saving on fuel.

Water System (pp. 35-36)

This section mentions the capacity of the Koele Reservoir but fails to mention the capacity of the Lanai City Reservoir – the main water supply for the project. How much of its capacity will this project take at full build-out?

Significance Criteria Assessment (p. 71)

The first criterion asks if the project involves an irrevocable commitment to loss or destruction of any natural or cultural resources. The DEA states that there will be no loss or destruction of natural resources. There will however, be an irrevocable loss of 72 acres of prime agricultural land. The loss of this land to agricultural uses may not be considered significant by the State or the County of Maui but it will be lost to agricultural uses nonetheless.

Thank you for the opportunity to review this DEA.

Sincerely,

Ryan Riddle for

Peter Rappa
Environmental Review Coordinator

cc: OEQC
Colleen Suyama, Munekiyo & Hiraga
James Moncur, WRRC
Jon Matsuoka
Ryan Riddle

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

January 5, 2010

Mr. Peter Rappa
Environmental Review Coordinator
University of Hawaii
Environmental Center
2500 Dole Street, Krauss Annex 19
Honolulu, Hawaii 96822

SUBJECT: Comments on the Draft Environmental Assessment for the Proposed Lanai Affordable Housing Project Located at TMK: (2) 4-9-002:058 (por.), Lanai City, Lanai, Hawaii (EAC 2009/0012)

Dear Mr. Rappa:

Thank you for your letter of December 23, 2009 providing comments on the Draft Environmental Assessment for the Proposed Lanai Affordable Housing Project. We offer the following information in response to your comments.

General Comments

The Lanai Affordable Housing is intended to provide housing to existing residents on Lanai. The housing survey conducted as part of the Market Analysis identified 31 current households who were renting of which 17 indicated a preference to buy their next unit. The project will be constructed in phases over a span of 17 years. The first phase will be limited to approximately 58 single-family lots and 23 multi-family units. Subsequent phases will depend on the absorption rate for Phase 1.

According to the Maui Planning Department, the average household size for Lanai Island is forecasted as follows:

	2010	2015	2020	2025	2030
Household Size	2.64	2.60	2.56	2.53	2.51

Phase 1 is anticipated to be constructed in 2015. Based on the project household size, the 81 dwelling units will house approximately 211 persons. Depending on the absorption rate, subsequent units will be constructed over the next 17 years to accommodate the growing population.

The population of Lanai is projected to increase as follows:

	2010	2015	2020	2025	2030
Population	3,735	4,046	4,308	4,598	4,901
Increase		311	262	290	303

Based on the anticipated population growth in 2015, the 81 dwelling units will provide housing units for the anticipated growth of 311 persons.

The affordability of the housing units will be based on the estimated median family income for Lanai Island at the time the units become available. For 2009, the estimated median family income is $65,670.00. Utilizing this median income figure, the Department of Housing and Human Concerns has developed an affordable housing guideline methodology for Lanai. The guidelines would be used to determine income qualified households for units developed by the project.

Project Need (p. 4)

The terms "resort housing" and "workforce/resident housing" are used to distinguish housing used as second or vacation homes located in the resorts and housing for residents which are located mainly in Lanai City.

To gauge the housing needs of the community, the representatives of the island's real estate market involved Okamoto Real Estate, the financial institutions on Lanai and Castle and Cooke Company, as well as the resident community. In collaboration with the Lanai community, the housing types and first phase of the project was developed. The Lanai community indicated there was a need for housing on the island.

Further, based on the anticipated population growth forecasted for the Island, the project will provide housing units as the population increases on the Island.

Anticipated Development Schedule (p. 11)

The current economic outlook for the State of Hawaii has also affected the County of Maui. It cannot be determined at this time what budgetary priority this project will have with the County of Maui, especially since the project must first obtain land use entitlements before it can proceed. This project is viewed as a long-term project that will be developed in phases over a 17 year span. Phase 1 is anticipated to be constructed in 2015 which allows the County of Maui to include the project in future budgets, if necessary.

Existing Conditions (p. 13)

As commented, on page 13, "storm tracts" have been corrected to "storm tracks".

Flora and Fauna (pp. 19-21)

To facilitate public review of the Environmental Assessment, it was determined that use of common names would be appropriate. The scientific names of plant and animal species are cited in Appendix "B", Flora and Fauna Survey and Assessment of the EA.

Existing Conditions (p. 20)

The Final EA will reflect your suggested language to read, "The project site does not experience *significant* adverse noise or air quality conditions..."

Noise and Air Quality (pp. 20-21)

The citation of equipment and vehicle maintenance is one which can be effectuated via specifications in the contract document, thereby providing some measure of contractor compliance and enforcement during the construction phase of the project.

Scenic and Open Space Resources (p.21)

The County of Maui has not prepared any studies establishing scenic and open space resources. Lanai's highest mountain is located east of the project site and will not be impacted by the proposed housing project. There is an abundance of former pineapple lands that provide open space resource to the community.

The project site is immediately adjacent to Lanai City and is a reasonable location for future housing development, considering the scarcity of land not owned by Castle and Cooke available for development. The removal of this land from open space will have a negligible impact on the remaining agricultural lands that provide open space benefits to the community.

Archaeological Resources (p. 22)

The reference to Section 5 in the EA has been deleted. The photos of the project site were included in the 201H-38 Affordable Housing Application and not the EA.

Population and the Economy (pp. 25-26)

According to the Hawaii Workforce Informer (HIWI), Lanai has a civilian labor force of 1,600 persons, of which 150 or 10.1 percent are unemployed. Of the 1,450 employed

civilian labor force, approximately 50 percent or 700 persons were employed in the Leisure and Hospitality Industry. Six Hundred (600) of their workers were in accommodations and food service. (Source HIWI, December 2009) The other two (2) major employers were professional and business services, and government which employed 200 persons each.

The Island of Lanai experienced a 26 percent drop in visitor arrivals, 22.7 percent drop in visitor days and 29.1 percent drop in spending in 2009. (Source: Hawaii Tourism Authority, December 2009.) The reduction in tourism has resulted in layoffs, as well as reduction of hours at the resorts. Since recovery of the local economy is difficult to predict, the project is being phased with a targeted 17-year build out. This build-out duration is subject to change and will be responsive to market conditions. Therefore, as the visitor industry recovers towards achieving optimal occupancy, the County of Maui will consider market conditions in establishing implementation timeframes for subsequent phases of development.

With regard to impacts to public services, the County of Maui will address future needs via a coordinated budget programming process. Over time, new property taxes incrementally generated by the project may be used to offset the costs of County-provided public service requirements. Additionally, the County has been coordinating the planning of the affordable housing project with the State Department of Education's current plans for the adjacent proposed school expansion project. Both land planning and infrastructure development requirements are being actively coordinated with DOE staff, as well as the State Department of Hawaiian Home Lands (DHHL) for DHHL's the future development of adjacent lands.

Public Services (pp. 27-31

The retail commercial area of Lanai City surrounds Dole Park, located approximately 3,000 ft. east of the proposed Lanai Affordable Housing project and within walking distance.

Solid Waste Disposal (pp. 30-31)

According to the Department of Environmental Management (DEM), the Lanai Landfill as of February, 2009, has a remaining capacity of 178,000 cubic yards and an annual capacity usage of 13,400 cubic yards or 5,127 tons per year. It is estimated that the landfill can accommodate the solid waste needs of the Lanai Community until year 2020. (Source: Department of Environmental Management, Integrated Solid Waste Management Plan, 2009) DEM projects the following for Lanai:

Estimated Solid Waste Projections – In Tons

	2005	2010	2015	2020	2025	2030
Residential	2,174	2,394	2,631	2,843	3,075	3,308
Commercial	2,864	3,089	3,341	3,532	3,746	3,966
Total	5,038	5,484	5,972	6,375	6,821	7,275

The DEM uses a per capita waste disposal rate of nine (9) pounds per person per day. The average household size for Lanai Island is projected for 2015 as 2.60 persons per household. (Source: Planning Department, 2006) Based on household size it is estimated that a population of 1,071 persons will be located within the 412 units and will generate 9,639 pounds of solid waste per day and 3,518,235 pounds or 1,759 tons of solid waste per year at full buildout. Phase 1, which is anticipated to be constructed in 2015, consisting of 81 units will accommodate approximately 211 persons and generate approximately 693,135 pounds or 347 tons of solid waste per year. The phased construction of the project will allow modest increases in solid waste over the anticipated life of the landfill, as well as allow the County of Maui to implement waste reduction measures and plan for future expansion of the facility, as may be necessary.

Roadway System (pp. 31-35)

The State Department of Education, in their comments, has voiced a preference for the all-way stop at the Fraser Avenue/Fifth Street intersection. However, as design for the project progresses, a traffic circle can be considered as an alternative solution.

Water System (pp. 35-36)

As noted in the Preliminary Engineering Report (PER), the capacity of the Lanai City Reservoir is 2.0 million gallons (MG). The total capacity of the Koele and Lanai City Reservoirs is 2.75 MG. According to the Lanai Water Use and Development Plan dated July 12, 2006, the existing usage from the Koele and Lanai City Reservoirs was estimated as 0.658 million gallons per day (MGD). The estimated water demand for the project will be approximately 0.278 MGD totaling approximately 0.936 MGD. The PER concludes that storage is not anticipated to be a limiting factor for servicing the proposed project.

Significant Criteria Assessment (p. 71)

Although the subject property is classified as prime agricultural lands, the land has been left fallow for several years. The land was deeded to the County of Maui to provide

housing for the citizens of Lanai. The loss of 73 acres of prime agricultural lands is negligible considering the existing vacant agricultural lands created since pineapple cultivation ceased on the island. The discontinuance of agriculture on Lanai is not due to the loss of agricultural lands but the lack of a viable agricultural product for market.

Thank you for your valuable input to the Chapter 343, HRS, EA process. If there are any questions or if additional clarification is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

Colleen Suyama
Project Manager

CS:tn
cc: JoAnn Ridao, Deputy Director, DHHC
Dwight Mitsunaga, Pacific Architects, Inc.
Donald Okahara, Okahara & Associates
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DEC 3 1 2009

CHARMAINE TAVARES
MAYOR

JEFFREY A. MURRAY
CHIEF

ROBERT M. SHIMADA
DEPUTY CHIEF

COUNTY OF MAUI
DEPARTMENT OF FIRE AND PUBLIC SAFETY
FIRE PREVENTION BUREAU

780 ALUA STREET
WAILUKU, HAWAII 96793
(808) 244-9161
FAX (808) 244-1363

December 28, 2009

Munekiyo & Hiraga, Inc.
Attn: Colleen Suyama
305 High Street, Suite 104
Wailuku, HI 96793

Subject: Preliminary 201H Application & Draft EA
Proposed Lanai Affordable Housing Project
Lanai
TMK: (2) 4-9-002:058(por.)

Thank you for the opportunity to comment on the above subject subdivision. At this time the Fire Prevention Bureau would request a water supply for fire protection and fire department access roads.

Water supply for fire protection shall have a minimum flow of 1000 gallons per minute for a two hour duration with hydrant spacing a maximum of 350 feet between hydrants. Dead-ends shall have a hydrant within 175 ft.

Service roads to proposed properties shall have a clear width of 20 feet. Any dead-end roads or cul-de-sacs shall have a clear width of 32 ft., and if greater than 150 ft. in length, shall be provided with an approved fire apparatus turn-around. All turns and required turnarounds shall have an outside turning radius of 35 feet. The maximum grade for the service roads shall not be greater than 14%.

Once construction of buildings are planned, there shall be at least one hydrant within 500 feet of any building to be constructed.

If you have any questions, you may call me at 270-7566 or fax to 270-7889.

Sincerely,

Kono Davis

Kono Davis
Fire Plans Examiner

MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

January 5, 2010

Kono Davis, Fire Plans Examiner
Department of Fire and Public Safety
Fire Prevention Bureau
780 Alua Street
Wailuku, Hawaii 96793

SUBJECT: Preliminary 201H Application for the Proposed Lanai Affordable Housing Project at TMK (2) 4-9-002:058 (por.), Lanai City, Lanai, Hawaii

Dear Mr. Davis:

Thank you for your letter of December 28, 2009. Please be advised that the Lanai Affordable Housing project will meet the requirements and standards of the Department of Fire and Public Safety (Fire), except for the exemptions requested through the Hawaii Revised Statutes 201H-38 process that may be approved by the Maui County Council.

If additional clarification is required, please contact me at 244-2015.

Very truly yours,

Colleen Suyama
Project Manager

CS:tn
cc: JoAnn Ridao, Deputy Director, Dept. of Housing and Human Concerns
Dwight Mitsunaga, Pacific Architects, Inc.
Donald Okahara, Okahara & Associates
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DEC 2 8 2009

CHARMAINE TAVARES
Mayor

TAMARA HORCAJO
Director

ZACHARY Z. HELM
Deputy Director

(808) 270-7230
Fax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

December 22, 2009

Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High Street
Wailuku, Hawaii 96793

RE: Preliminary 201H Application and Draft Environmental Assessment
For the Proposed Lanai Affordable Housing Project
TMK (2) 4-9-002:058 por., Lanai City, Lanai

Dear Ms. Suyama:

A letter, included in the above reference draft environmental assessment, from Munekiyo & Hiraga, Inc., dated August 20, 2009, in response to the Department of Parks and Recreation's early consultation comments, dated March 3, 2009, states, ***"The Department of Housing and Human Concerns will coordinate the proposed parks with the Department of Parks and Recreation."*** To date our department has not been contacted in this regard.

We look forward to being involved in the planning and design development of the park facilities included in this affordable housing project on Lanai.

Thank you for the opportunity to comment on this action. Should you have any questions, or need of additional information concerning this matter, please feel free to contact me, or Patrick Matsui, Chief of Parks Planning & Development, at 808-270-7387.

Sincerely,

Tamara Horcajo
Director of Parks and Recreation

c: Patrick Matsui, Chief of Parks Planning & Development

TH:PTM:rh

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

CHARMAINE TAVARES
Mayor
LORI TSUHAKO
Director
JO-ANN T. RIDAO
Deputy Director

2200 MAIN STREET • SUITE 546 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165
MAILING ADDRESS: 200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • EMAIL director.hhc@mauicounty.gov

December 29, 2009

Tamara Horcajo, Director
Department of Parks and Recreation
700 Hali'a Nakoa Street, Unit 2
Wailuku, Hawaii 96793

Dear Ms. Horcajo:

SUBJECT: COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED LANAI AFFORDABLE HOUSING PROJECT LOCATED AT TMK: (2) 4-9-002:058 (POR.), LANAI CITY, LANAI, HAWAII. (EAC 2009/0012)

Thank you for your letter of December 22, 2009. The conceptual plan for the proposed Lanai Affordable Housing project included two (2) park sites as requested by the Lanai community. As development of the park sites progresses, we will coordinate our plans with your office.

If additional clarification is required, please contact Ms. Colleen Suyama of Munekiyo & Hiraga, Inc. at 244-2015.

Sincerely,

LORI TSUHAKO, LSW, ACSW
Director of Housing and Human Concerns

LT:tn
cc: JoAnn Ridao, Deputy Director
Michael T. Munekiyo, Munekiyo & Hiraga, Inc.
Dwight Mitsunaga, Pacific Architects, Inc.
Donald Okahara, Okahara & Associates, Inc.
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CHARMAINE TAVARES
Mayor

JEFFREY S. HUNT
Director

KATHLEEN ROSS AOKI
Deputy Director

DEC 1 8 2009

COUNTY OF MAUI
DEPARTMENT OF PLANNING

December 10, 2009

Ms. Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Suyama:

SUBJECT: COMMENTS ON A DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR THE PROPOSED LANAI AFFORDABLE HOUSING PROJECT LOCATED IN LANAI CITY, ISLAND OF LANAI, HAWAII, TMK: (2) 4-9-002:058 (POR) (EAC 2009/0012)

The Department of Planning (Department) is in receipt of the above-referenced document for the proposed affordable housing project in Lanai City. The Department understands the proposed action includes the following:

- The County of Maui, Department of Housing and Human Concerns is proposing an affordable housing project on 73 acres of a 115 acre parcel owned by the County of Maui;
- The project is proposed to contain 412 residential units (239 single-family homes and 173 multi-family homes), two (2) parks, a public/quasi-public site and a detention pond; and
- The County of Maui, Department of Housing and Human Concerns will be the approving agency of this DEA.

Based on the foregoing, the Department provides the following comments:

1. The Lanai Planning Commission (Commission) will want to comment on the DEA as there will be no entitlements that require their review or approval. Please have someone available to present this project to the Commission at their next meeting of January 20, 2010. Submit ten (10) hard copies and nine (9) CDs of the document to the Department by December 15, 2009, so that we can deliver the documents to the Commission at their December 16, 2009 meeting. This will give them time to review the document and have comments at the January 20, 2010 meeting;

2. Please provide information on the proximity of the wastewater treatment plant and possible odors to the project site; include prevailing winds;

3. Under Public Services, Police, Fire Protection and Medical Services, (page 28), please include the Straub Clinic and Hospital as a health center and provide basic details about the Clinic;

4. If many of the local residents that are renting in Lanai City purchase one of the affordable homes, what would happen to the existing rental properties in and around Lanai City? Might these become vacant properties and create blight in Lanai City? Please provide your thoughts;

5. Under Parties Consulted, NRCS letter dated March 17, 2009, please provide cleaner copies of the two (2) maps in the Final EA;

6. In Appendix A, under Exemptions from Title 19 Residential Use, please clarify the zero lot line setback. I believe this is meant to be a zero lot line for the side yard only, not rear yard;

7. In Appendix A, under Exemptions from Title 19 Uses permitted, home occupations, pursuant to Ordinance No 3622, are currently permitted under Chapters 19.08, 19.09 and 19.12. Home occupations are not permitted under Chapters 19.31 and 19.615. Please make this clear in your document;

8. In 5. Preliminary Project Plans, the 11 x 17 Architectural Site Plan appears to utilize a different base map. Please be sure that all site plans in the document use the same base map to avoid confusion;

The following are some deign suggestions to the applicant and/or architect. Please take these into considerations as the project progresses:

9. For the single-family homes, in the laundry area behind the carport, maybe provide a screen wall as wide as the laundry appliances as a way to screen these appliances from view from the public street;

10. On the Zoning Site Plan, think about removing the seven (7) single-family lots from the east side of the 2.83-acre park and maybe relocating them adjacent to the other single-family lots next to the 2.08-acre park. This would eliminate fences on one side of the 2.83-acre park, provide for all homes to be facing the park and provide eyes on the park from all angles;

11. On the Zoning Site Plan, please describe the use of the two (2) large lots directly east of the proposed single family lots; and

12. Please update the Future School Site Map to include their proposed teacher housing lots which I believe are proposed directly across the street from your proposed public site and detention pond. One of the comments obtained during the public process for the School Master Plan was to maybe have the teacher

housing off-site and distributed through the community. This may work within your proposed development. Maybe discuss this possibility with the Department of Education (DOE).

Thank you for the opportunity to comment. Should you require further clarification, please contact Staff Planner Joseph Prutch at joseph.prutch@mauicounty.gov or at 270-7512.

Sincerely,

JEFFREY S. HUNT, AICP
Planning Director

xc: Clayton I. Yoshida, AICP, Planning Program Administrator
Joseph M. Prutch, Staff Planner
Project File
General File

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MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

December 29, 2009

Jeffrey S. Hunt, AICP
Planning Director
Department of Planning
250 South High Street
Wailuku, Hawaii 96793

SUBJECT: Comment on the Draft Environmental Assessment for the Lanai Affordable Housing Project at TMK (2) 4-9-002:058 (por.), Lanai City, Lanai, Hawaii (EAC 2009/0012)

Dear Mr. Hunt:

Thank you for your letter dated December 10, 2009. We offer the following responses which are numbered in the same order as the comments provided in the Department's letter.

1. The Department of Housing and Human Concerns (DHHC), on December 2, 2009, requested review of the 201H-38 Application for the Lanai Affordable Housing Project by the Lanai Planning Commission (LPC). In anticipation of the LPC's review, 19 hard copies were transmitted to the Maui Planning Department on December 3, 2009 for distribution to the Lanai Planning Commission at their December 16, 2009 meeting. Representatives of the project team will be in attendance at the January 20, 2010 LPC meeting.

2. The existing wastewater treatment plant is located approximately 3,000 feet south-east of the project site. The prevailing winds are northeasterly trades 90 percent of the time during summer and 50 percent of the time during winter. (Source: Atlas of Hawaii) Any odors from the treatment plant will in most instances be blown away from the proposed housing project. There may be occasional impacts from odor during kona weather when the winds blow in a southwesterly direction.

3. As requested, the Straub Lanai Family Health Center provides basic family health care and includes the following services:

   a. Diagnosis and treatment of illness and injury for infants, children, adolescents and adults
   b. Periodic physical examinations and preventive health maintenance

c. Pre-marital and gynecological examinations
d. Minor surgical procedure
e. Well-baby and well-child services
f. Selected specialty consultations available in: cardiology, dermatology, obstetrics/gynecology, ophthalmology, orthopedics, pediatrics, physical therapy, and nephrology

4. As indicated in the Market Study prepared for the Lanai Affordable Housing Project, the housing survey included 75 households of which 31 were currently renting. Of the current renters, 55 percent or 17 households preferred to buy their next unit while 45 percent or 14 households would continue to rent. Some of these renters are current and former Castle & Cooke employees who receive rental subsidies, and may not want a mortgage. Further, the availability of homes for sale or rent will be absorbed over a span of 17 years. This absorption rate is programmed to prevent an over supply of housing units that can affect existing rental properties and lead to an abundance of vacant units.

5. In response to your request, colored versions of the maps from Natural Resources Conservation Service (NCRS) have been included in the Final EA.

6. To allow greater flexibility in the final design of the proposed dwellings, the exemption will allow for the opportunity to use zero lot lines for the rear property boundary lines.

7. We acknowledge home occupation is currently permitted in Chapters 19.08 Residential, 19.09 R-0 Zero Lot Line Residential and 19.12 Apartment Districts. Appendix A has been amended accordingly.

8. The preliminary project plans have been reviewed to ensure that the same base maps are being utilized.

9. As the project is further designed, consideration will be given to providing a screen wall wide enough to screen laundry appliances from the public street.

10. The project plans are conceptual and will be subject to further refinements. Your comment regarding providing visual security to the park from all boundaries will be taken into consideration as the design for the project progresses.

11. The two (2) large lots are vacant agricultural lots owned by the Department of Hawaiian Homes Land (DHHL) which is in the process of being master planned, as such, the proposed uses cannot be identified at this time.

12. We acknowledge the Future School Site Map identified in the Draft EA prepared for the Department of Education (DOE) included proposed housing lots directly across the proposed detention pond site and public/quasi-public site. However, these plans are conceptual and subject to further refinements. The DHHC and the DOE, in the process of coordinating and refining the projects, have initiated preliminary discussions regarding the location of the teacher's housing within the Lanai Affordable Housing project.

Thank you again for you comments. If there are additional questions or if additional information is required please contact me at 244-2015.

Very truly yours,

Colleen Suyama
Project Manager

CS:lh
cc: JoAnn Ridao, Deputy Director, Department of Housing and Human Concerns
Dwight Mitsunaga, Pacific Architects
Donald Okuhara, Okuhara & Associates
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CHARMAINE TAVARES
Mayor

MILTON M. ARAKAWA, A.I.C.P.
Director

MICHAEL M. MIYAMOTO
Deputy Director

Telephone: (808) 270-7845
Fax: (808) 270-7955

RALPH NAGAMINE, L.S., P.E.
Development Services Administration

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET, ROOM NO. 434
WAILUKU, MAUI, HAWAII 96793

December 14, 2009

Ms. Colleen Suyama
MUNEKIYO & HIRAGA, INC.
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Ms. Suyama:

SUBJECT: PRELIMINARY 201H APPLICATION AND DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED LANAI AFFORDABLE HOUSING PROJECT; TMK: (2) 4-9-002:058 (POR.)

We reviewed the subject application and have the following comments:

1. The applicant shall be responsible for all required improvements as required by Hawaii Revised Statutes, Maui County Code and rules and regulations.

2. As applicable, construction plans shall be designed in conformance with Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and Standard Details for Public Works Construction, 1984, as amended.

3. As applicable, worksite traffic-control plans/devices shall conform to Manual on Uniform Traffic Control Devices for Streets and Highways, 2003.

Please call Michael Miyamoto at 270-7845 if you have any questions regarding this letter.

Sincerely,

MILTON M. ARAKAWA, A.I.C.P.
Director of Public Works

MMA:MMM:ls
xc: Highways Division
Engineering Division
Department of Housing and Human Concerns
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MUNEKIYO & HIRAGA, INC.

MICHAEL T. MUNEKIYO
GWEN OHASHI HIRAGA
MITSURU "MICH" HIRANO
KARLYNN FUKUDA

MARK ALEXANDER ROY

December 29, 2009

Milton M. Arakawa, AICP
Director
Department of Public Works
County of Maui
200 S. High Street
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for the Lanai Affordable Housing Project at TMK (2) 4-9-002:058 (por.), Lanai City, Lanai, Hawaii

Dear Mr. Arakawa:

Thank you for your letter of December 14, 2009. We note that the Lanai Affordable Housing project will meet the requirements and standards of the Department of Public Works (DPW), except for the exemptions requested through the Hawaii Revised Statutes 201H-38 process that may be approved by the Maui County Council. Further, prior to construction a worksite traffic-control plan shall be submitted to the DPW for review and approval.

If additional clarification is required, please contact me at 244-2015.

Very truly yours,

Colleen Suyama
Project Manager

CS:lh
cc: JoAnn Ridao, Deputy Director, Department of Housing and Human Concerns
Dwight Mitsunaga, Pacific Architects
Donald Okuhara, Okuhara & Associates
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POLICE DEPARTMENT
COUNTY OF MAUI

CHARMAINE TAVARES
MAYOR

OUR REFERENCE

YOUR REFERENCE

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

GARY A. YABUTA
CHIEF OF POLICE

CLAYTON N.Y.W. TOM
DEPUTY CHIEF OF POLICE

December 18, 2009

Ms. Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Ms. Suyama:

SUBJECT: Preliminary 201H Application and DEA for the Proposed Lanai Affordable Housing Project
TMK (2) 4-9-002:058 (por.)

This is in response to the request for comments on the above subject.

We have reviewed the information submitted for this project and have enclosed a copy of our comments. Thank you for giving us the opportunity to comment on this project.

Very truly yours,

Assistant Chief Danny J. Matsuura
for: Gary A. Yabuta
Chief of Police

c: Jeffrey Hunt, Planning Department
Lori Tsuhako, Housing and Human Concerns

COPY

TO	:	GARY YABUTA, CHIEF OF POLICE, MAUI POLICE DEPARTMENT
VIA	:	CHANNELS AC D. Matsuura 12/18/19
FROM	:	CHAD KUSUNOKI, POLICE OFFICER II, LANAI PATROL DIVISION
SUBJECT	:	PRELIMINARY 201H APPLICATION AND DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE ; LANAI AFFORDABLE HOUSING PROJECT (TMK NOS. (2) 4-9-002:058 (POR)

Sir, this TO/FROM is being submitted in regards to the following Subject.

The following is an assessment of the project from the Policing point of view. The Department of Housing and Human Concerns, County of Maui, is proposing an affordable housing project on the island of Lanai. The project will be located west of the current Hawaiian Homelands Subdivision with access to the project from existing roadways which include Fifth Street and Ninth Street. The start (First Phase) of the project is to build 58 single family units and 23 multi-family units. The First phase will be constructed closest to the Lanai school Area with a given estimate project start date per Collen SUYAMA of Munekiyo & Hiraga, Inc. in the year 2017. SUYAMA relayed the project expects to take 17 years to complete with a total of 239 single family units, 173 multi-family units, and (2) park sites.

QUESTIONS / CONCERNS:

During the construction phase of this project, Munekiyo & Hiraga, Inc plan to utilize the Kaumalapau Highway, Fraser Avenue, and Fifth Street roadway to transport equipment and materials to the construction site. Due to the weight of the vehicle(s) and materials being hauled this will have an impact on Fraser Avenues roadway surface. Due to the intentions of utilizing Fraser Avenue and Fifth Street to the Housing Project, this could prove to be hazardous or detrimental as both roadways pass adjacent to the Lanai School. Another concern would be low laying power lines on both Fraser Avenue and Fifth Street roadways.

SUGESTION: In future plans for the Housing Project, they plan to build a Kaumalapau extension that will connect Kaumalapau Highway directly to the Housing Project. Should this roadway be graded prior to the start of the project, this will eliminate any heavy equipment from traveling through the Lanai City. Further more there is an existing dirt roadway (Awalua Road) that already exist from Kaumalapau Highway that travels into and through the Housing Project site.

During the Construction phase of the Housing Project, there will be an increase in population due to the construction crews that will be on the island followed by the different completions of the Housing Project. This could result in a higher call and need for service from Police and Emergency Services.

I concur with the suggestions mentioned by Officer Chad KUSUNOKI. A project of this size would add a lot more vehicle traffic through Lanai City. Concerns and suggestions are being forwarded for review via proper channels.

Lt. Ernest SOARES 0321
Lanai Patrol Division
12/16/09 @1020 Hrs.

Respectfully Submitted,

Chad KUSUNOKI, E#13829

120709 @ 1415HOURS

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
COUNTY OF MAUI

CHARMAINE TAVARES
Mayor
LORI TSUHAKO
Director
JO-ANN T. RIDAO
Deputy Director

2200 MAIN STREET • SUITE 546 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165
MAILING ADDRESS: 200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • EMAIL director.hhc@mauicounty.gov

January 5, 2010

Danny J. Matsuura, Assistant Chief
Police Department
55 Mahalani Street
Wailuku, Hawaii 96793

Dear Assistant Chief Matsuura:

SUBJECT: PRELIMINARY 201H APPLICATION FOR THE PROPOSED LANAI AFFORDABLE HOUSING PROJECT AT TMK (2) 4-9-002:058 (POR.), LANAI CITY, LANAI, HAWAII

Thank you for your letter of December 18, 2009. As we continue to plan the Lanai Affordable Housing project, we will take under advisement your comments regarding an alternative construction route to the project site. In particular, we note the following:

1. Construction access will be coordinated with the Department of Education and the Department of Public Works to ensure that safety and roadway maintenance concerns are considered in the formulation of the construction access plan. The selected contractor will be responsible for coordinating construction access with other entities (e.g., Maui Electric, Hawaiian Telcom), as well to ensure that impacts to other facilities are addressed during the construction phase of development.

2. The Kaumalapau Extension reflected in the Lanai Community Plan is not a specific project element, but has been shown on the project's master plan to ensure that future planning and design of the Extension has been considered in terms of its relationship to the Lanai Affordable Housing project. Although the Kaumalapau Extension is not part of the project, the project plans do call for an extension of Ninth Avenue to the project site as a future infrastructure improvement element. This second access point is intended to mitigate the impacts of the project to the Fraser Avenue-Fifth Street intersection.

If additional clarification is required, please contact Ms. Colleen Suyama of Munekiyo & Hiraga, Inc. at (808) 244-2015.

Sincerely,

LORI TSUHAKO, LSW, ACSW
Director of Housing and Human Concerns

LT:tn
cc: JoAnn Ridao, Deputy Director
Michael T. Munekiyo, Munekiyo & Hiraga, Inc.
Dwight Mitsunaga, Pacific Architects, Inc.
Donald Okahara, Okahara & Associates, Inc.
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November 30, 2009

Ms. Colleen Suyama, Project Manager
Munekiyo & Hiraga, Inc.
305 South High Street, Suite 104
Wailuku, Maui, Hawaii, 96793

Subject: Preliminary 201H Application and Draft Environmental Assessment for the Proposed Lanai Affordable Housing Project
Fifth Avenue and Ninth Avenue
Lanai City, Lanai, Hawaii
Tax Map Key: (2) 4-9-002:058 (por.)

Dear Ms. Suyama,

Thank you for allowing us to comment on the Preliminary 201H Application and Draft Environmental Assessment for the subject project.

In reviewing our records and the information received, Maui Electric Company (MECO) has no additional comments to the subject project at this time.

Should you have any questions or concerns, please call me at 871-2340.

Sincerely,

Ray Okazaki
Staff Engineer

c: Department of Housing and Human Concerns – Ms. Lori Tsuhako

LANA'I COMMUNITY ASSOCIATION

P.O. BOX 630735
730 LANA'I AVE. #108
LANA'I CITY, HI 96763

December 23, 2009

Ms. Colleen Suyama
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Dear Ms. Suyama:

We received the Preliminary 201H Application and Draft EA for the Lanai Affordable Housing Project. Our association is equivalent to the United Way for Lana'i. We are not a political entity and consequently our Board of Directors does not feel qualified to take any position on this application.

Sincerely,

Linda Kay Okamoto,
President

cc: Dwight Mitsunaga
Lori Tsuhako

XI. REFERENCES

XI. REFERENCES

County of Maui, The General Plan of the County of Maui 1990 Update.

County of Maui, Department of Environmental Management, Integrated Solid Waste Management Plan, 2009.

County of Maui, Department of Planning, Lanai Community Plan, December 1998.

County of Maui, Department of Planning, Public Facilities Assessment Update, March 9, 2007, prepared by R.M. Towill Corporation.

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Department of Education, School Enrollment, 2008-2009.

Hawaii Tourism Authority, Monthly Visitor Statistics, December 2009.

Lanai Water Working Group, Draft Water Use and Development Plan for Lanai, February 1997.

Munekiyo & Hiraga, Inc., Application for District Boundary Amendment and Change in Zoning, Miki Basin Heavy Industrial Area, March 2006.

Munekiyo & Hiraga, Inc., Application for Project District Phase II Approval Proposed Fitness Facility, Movement Studio and Spa at the Lodge at Koele, October, 2004.

Socio-Economic Forecast, The Economic Projections for the Maui County General Plan, 2030, prepared for Planning Department, County of Maui, June 2006.

State Department of Labor and Industrial Relations, Hawaii Workforce Informer, December 2009.

University of Hawaii, Department of Geography, Atlas of Hawaii, Third Edition, 1998.

University of Hawaii-Land Study Bureau, Detailed Land Classification Island of Lanai, May 1967.

U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, August 1972.

APPENDIX A.

Proposed Section 201H-38, HRS Exemptions

PROPOSED EXEMPTIONS FOR AFFORDABLE HOUSING
PROPOSED SECTION 201H-38, HRS, EXEMPTIONS
FROM THE MAUI COUNTY CODE ("MCC")

A. EXEMPTION FROM TITLE 2, MCC, ADMINISTRATION AND PERSONNEL

1. An exemption from Chapter 2.80B, MCC, General Plan and Community Plans, shall be granted to permit the project without obtaining a community plan amendment for a portion of the project.

B. EXEMPTION FROM TITLE 12, STREETS, SIDEWALKS AND PUBLIC PLACES

1. Exemption from Section 12.24A.070D MCC, Planting of street trees, shall be granted to delete the requirement for street trees.

C. EXEMPTIONS FROM TITLE 16, MCC, PUBLIC SERVICES

1. Exemption from MCC Chapters 16.04A, Fire Code, 16.18A, Electrical Code, 16.20A, Plumbing Code, and 16.26, Building Code, shall be granted to exempt the project from fire, electrical, plumbing, and building permit fees, as well as inspection fees.

D. EXEMPTIONS FROM TITLE 18, MCC, SUBDIVISIONS

1. Exemptions from Section 18.04.030, MCC, Administration, and related land use consistency and conformity requirements of Title 18, shall be granted to exempt the project from obtaining a change in zoning and community plan amendment to enable subdivision approval.

2. An exemption from Section 18.16.320, MCC, Parks and Playgrounds, shall be granted to allow the 4.91 acres of land within the project to satisfy the park dedication and assessment requirements.

3. An exemption from Section 18.16.050 MCC, Minimum Right of way and Pavement Widths, shall be granted to allow the following roadway standards within the Lana`I Affordable Housing project: 64 ft. Right of way with 24 feet of pavement; 50 ft. right of way with 22 ft. of pavement and 44 ft. right of way with 22 feet of pavement. Further, the extension of Fifth Street will be a 50 ft. right of way with 40 ft. of pavement and 6 ft. wide shoulders along the school frontage.

4. An exemption from Section 18.20.070 MCC, Sidewalks, shall be granted to allow 5 ft. wide sidewalks on one side of the street within the Lana`i Affordable Housing Project and 4 ft. wide sidewalks on one side of Fifth Street.

5. An exemption from Section 18.20.080 MCC, Curbs and Gutters, shall be granted to allow grass swales within the Lanai Affordable Housing Project.

6. An exemption from Section 18.20.105 MCC, Traffic calming elements, shall be granted.

7. An exemption from Section 18.20.140 MCC, Utility lines and facilities, shall be granted to allow for above ground utility lines.

E. EXEMPTIONS FROM TITLE 19,MCC, ZONING

1. An exemption from Chapter 19, MCC, shall be granted to permit the development and use of the parcel for single-family, multi-family, public/quasi-public, and park purposes, including supporting infrastructure requirements. Further, this exemption shall allow the subdivision of the property in the conceptual plat configuration shown in Attachment "A", which may be amended by the Director of Public Works. The following zoning standards shall apply to the proposed development:

Residential Use:

Minimum lot area	5,000 square feet
Height:	No building shall exceed two-stories or 30 feet in height, measured from finished grade
Setback:	Ten (10) feet front yard Six (6) feet side and rear yard; except one zero lot line may be permitted on an adjacent property boundary.

Multi Family Use:

Minimum lot area	10,000 square feet
Height:	No building shall exceed two-stories or 30 feet in height, measured from finished grade
Setback:	Fifteen (15) feet front yard Ten (10) feet side and rear yard

Public Quasi-Public Use:

Minimum lot area:	15,000 square feet
Height:	No building shall exceed two-stories or forty-five (45) feet in height, measured from finished grade
Setback:	Fifteen (15) feet front yard Ten (10) feet side and rear yard

Park Use:

Minimum lot area:	One (1) acre
Height:	No building shall exceed two-stories or forty-five (45) feet in height, measured from finished grade
Setback:	Fifteen (15) feet front yard Ten (10) feet side and rear yard

2. Uses permitted in Chapter 19.08 Residential District, 19.09 R-0 Zero Lot Line Residential District, 19.12 Apartment District, 19.31 Public/Quasi-Public District and 19.615 Park Districts, except Pk-4 Golf Course Park District, shall be permitted; including the following additional uses:

   1) Residential Care Facilities pursuant to § 46-4(d), Hawaii Revised Statutes (HRS)

   2) Utility facilities, minor; and

   3) Utility services

F. EXEMPTIONS FROM TITLE 20, MCC, ENVIRONMENTAL PROTECTION

1. An exemption from Section 20.08.090, MCC, Grubbing and Grading Permit Fees shall be granted to exempt the project from payment of grading, grubbing, and excavation permit fees, as well as inspection fees.

APPENDIX B.

Flora and Fauna Survey and Assessment

FLORA AND FAUNA SURVEY AND ASSESSMENT

for the

LANA'I CITY AFFORDABLE HOUSING PROJECT

LANA'I CITY, HAWAII

by

ROBERT W. HOBDY
ENVIRONMENTAL CONSULTANT
Kokomo, Maui
August 2008

Prepared for: Pacific Architects

BIOLOGICAL RESOURCES SURVEY
LANA'I CITY AFFORDABLE HOUSING PROJECT

INTRODUCTION

The Lana'i City Affordable Housing Project lies on 65 acres of undeveloped Land, TMK (2) 4-9-02:058 (por.), on the northwest edge of town. The land is bounded on the east side by single family homes of the Hawaiian Homes Ha'u öwī Project, and on the north, west and south sides by undeveloped land. This study was initiated to fulfill environmental requirements of the planning process.

SITE DESCRIPTION

The project area is situated on nearly level land. Vegetation consists of a tall and dense grass cover interspersed with shrubs and small trees. Soils are entirely of the Waihuna clay, 0 – 3 % slopes series (WoA) which is a deep, well drained alluvial soil with moderately slow permeability and a slight erosion hazard (Foote et al, 1972). Elevations range from 470 to 480 meters above sea level. Rainfall averages 30 to 35 inches per year with the bulk falling during 1 to 3 storms during the winter months (Armstrong, 1983).

BIOLOGICAL HISTORY

During pre-contact times this area would have been a grassy plain with an assortment of native dryland trees and shrubs such as olopua (*Nestegis sandwicensis*), lama (*Diospyros sandwicensis*), naio (*Myoporum sanwicense*), alahe'e (*Psydrax odorata*) and akoko (*Chamaesyce celastroides var. lorifolia*). This would have been complemented by a number of native forest birds and snails. The Hawaiians would have practiced seasonal sweet potato farming in small areas during the winter months.

In the mid 1920's this area was put into pineapple cultivation and was periodically plowed, planted and harvested for about 75 years until pineapple farming was discontinued in the 1990's. Since this time the areas has lain idle and has gradually grown in with non-native plants. All vestiges of the native flora and fauna have long since disappeared from this vicinity.

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the proposed Lana'i City Affordable Housing project area that was conducted in August, 2008. The objectives of the survey were to:

1. Document what plant, bird and mammal species occur on the property or may likely occur in the existing habitat.
2. Document the status and abundance of each species.
3. Determine the presence or likely occurrence of any native flora and fauna, particularly any that are Federally listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential for these species.
4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the native flora and fauna in this part of the island.
5. Note which aspects of the proposed development pose significant concerns for plants or for wildlife and recommend measures that would mitigate or avoid these problems.

BOTANICAL SURVEY REPORT

SURVEY METHODS

A walk-through botanical survey method was used to cover this 65 acre property. All representative habitats were examined including grasslands, brush lands and patches of forest. Close attention was given to ascertaining whether any native Hawaiian plant species were present.

DESCRIPTION OF THE VEGETATION

Dense vegetation covers all parts of the project area. Most abundant was Guinea grass (*Panicum maximum*) which covered the entire property. Also common were sourgrass (*Digitaria insularis*), Christmas berry (*Schinus terebinthifolius*) and lantana (*Lantana camara*).

A total of 59 plant species were recorded during the survey. Two of these were native species: 'ilima (*Sida fallax*) and 'uhaloa (*Waltheria indica*). The remaining 57 species were non-native trees, shrubs, grasses and herbs.

DISCUSSION AND RECOMMENDATIONS

The vegetation in this project area is totally dominated by non-native species. Only two plant species were native to Hawai'i: 'ilima and 'uhaloa. Both of these are widespread and common indigenous species in Hawai'i as well as other Pacific islands. No Endangered or Threatened plant species were found, nor were any seen that are candidates for such protected Federal status. No special native plant habitats were found either.

Because the vegetation on this site is dominated by common non-native plants and because there are no rare or protected native species within the project area, there is little of botanical concern with regard to this property, and the proposed project is not expected to have a significant negative impact on the botanical resources in this part of Lana'i.

No special recommendations with reference to plants are deemed appropriate or necessary.

PLANT SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within each of two groups: Monocots and Dicots. Taxonomy and nomenclature of the flowering plants (Monocots and Dicots) are in accordance with Wagner et al. (1999).

For each species, the following information is provided:

1. Scientific name with author citation
2. Common English or Hawaiian name.
3. Bio-geographic status. The following symbols are used:
   endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.
   indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).
   non-native = all those plants brought to the islands intentionally or accidentally after western contact.
   polynesian = brought by the Hawaiians during Polynesian migrations.

4. Abundance of each species within the project area:
   abundant = forming a major part of the vegetation within the project area.
   common = widely scattered throughout the area or locally abundant within a portion of it.
   uncommon = scattered sparsely throughout the area or occurring in a few small patches.
   rare = only a few isolated individuals within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MONOCOTS			
POACEAE (Grass Family)			
Andropogon virginicus L.	broomsedge	non-native	rare
Cenchrus echinatus L.	common sandbur	non-native	rare
Chloris divaricata R. Br.	stargrass	non-native	rare
Chloris gayana Kunth	Rhodes grass	non-native	rare
Cynodon dactylon (L.) Pers.	Bermuda grass	non-native	uncommon
Dichanthium sericeum (R.Br.) A. Camus	Australian bluestem	non-native	rare
Digitaria ciliaris (Retz.) Koeler	Henry's crabgrass	non-native	rare
Digitaria insularis (L.) Mez ex Ekman	sourgrass	non-native	common
Eleusine indica (L.) Gaertn.	wiregrass	non-native	rare
Eragrostis pectinacea (Michx.) Nees	Carolina lovegrass	non-native	rare
Panicum maximum Jacq.	Guinea grass	non-native	abundant
Paspalum dilatatum Poir.	Dallis grass	non-native	uncommon
Pennisetum purpureum Schumach.	Napier grass	non-native	rare
Sporobolus africanus (Poir.) Robins & Tournay	African dropseed	non-native	rare
DICOTS			
AMARANTHACEAE (AmaranthFamily)			
Chenopodium ambrosioides L.	Mexican tea	non-native	rare
Chenopodium carinatum R. Br.	keeled goosefoot	non-native	rare
ANACARDIACEAE (Mango Family)			
Schinus terebinthifolius Raddi	Christmas berry	non-native	common
APIACEAE (Parsley Family)			
Ciclospermum leptophyllum (Pers.) Sprague	fir-leaved celery	non-native	rare
APOCYNACEAE (Dogbane Family)			

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
Asclepias physocarpus (E.Mey.) Schlecter	baloon plant	non-native	uncommon
ASTERACEAE (Sunflower Family)			
Acanthospermum australe (Loefl.) Kuntze	spiny bur	non-native	uncommon
Ageratum conyzoides L.	maile hohono	non-native	rare
Calyptocarpus vialis Less.	straggler daisy	non-native	rare
Cirsium vulgare (Savi) Ten.	bull thistle	non-native	uncommon
Conyza bonariensis (L.) Cronq.	hairy horseweed	non-native	uncommon
Emilia fosbergii Nicolson	red pualele	non-native	rare
Heterotheca grandiflora Nutt.	telegraph weed	non-native	uncommon
Pluchea carolinensis (Jacq.) G. Don	sourbush	non-native	rare
Tridax procumbens L.	coat buttons	non-native	rare
Verbesina encelioides (Cav.) Benth. & Hook.	golden crown-beard	non-native	rare
CASUARINACEAE (She-oak Family)			
Casuarina equisetifolia L.	common ironwood	non-native	rare
EUPHORBIACEAE (Spurge Family)			
Chamaesyce hirta (L.) Millsp..	hairy spurge	non-native	rare
Chamaesyce hypericifolia (L.) Millsp.	graceful spurge	non-native	rare
Ricinus communis L.	Castor bean	non-native	rare
FABACEAE (Pea Family)			
Acacia confusa Merr.	Formosa koa	non-native	uncommon
Acacia mearnsii De Wild.	black wattle	non-native	rare
Chamaecrista nictitans (L.) Moench	partridge pea	non-native	uncommon
Crotalaria pallida Aiton	smooth rattlepod	non-native	rare
Desmanthus pernambucanus (L.) Thellung	slender mimosa	non-native	uncommon
Desmodium incanum DC.	kaimi clover	non-native	uncommon
Desmodium sandwicense E. Mey.	Spanish clover	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
Desmodium triflorum (L.) DC.	three-flowered beggarweed	non-native	rare
Indigofera hendecaphylla Jacq.	creeping indigo	non-native	rare
Indigofera suffruticosa Mill.	inikö	non-native	uncommon
Leucaena leucocephala (Lam.) de Wit	koa haole	non-native	rare
Macroptilium atropurpureum (DC.) Urb.	siratro	non-native	rare
Macroptilium lathyroides (L.) Urb.	wild bean	non-native	rare
Mimosa pudica L.	sensitive plant	non-native	rare
Stylosanthes fruticosa (Retz.) Alston	shrubby pencilflower	non-native	rare
MALVACEAE (Mallow Family)			
Malvastrum coromandelianum (L.) Garcke	false mallow	non-native	rare
Sida fallax Walp.	'ilima	indigenous	rare
Sida rhombifolia L.	Cuban jute	non-native	uncommon
Sida spinosa L.	prickly sida	non-native	rare
Waltheria indica L.	'uhaloa	indigenous	uncommon
MELIACEAE (Mahogany Family)			
Melia azedarach L.	pride of India	non-native	rare
PLANTAGINACEAE (Plantain Family)			
Plantago lanceolata L.	English plantain	non-native	common
SOLANACEAE (Nightshade Family)			
Solanum linnaeanum Hepper & P. Jaeger	apple of Sodom	non-native	rare
VERBENACEAE (Verbena Family)			
Lantana camara L.	lantana	non-native	common
Stachytarpheta jamaicensis (L.) Vahl	Jamaica vervain	non-native	rare
Verbena litoralis Kunth	ha'u öwī	non-native	rare

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through fauna survey method was conducted in conjunction with the botanical survey. All parts of the project area were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities and location as well as observations of trails, tracks, scat and signs of feeding. In addition an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

RESULTS

MAMMALS

Four species of mammals were detected in the project area during two site visits. Taxonomy and nomenclature follow Tomich (1986).

Axis deer (*Axis axis*) - Axis deer seen and heard and their trails, tracks, antler rubbing, scat and feeding signs were everywhere.

Mouse (*Mus domesticus*) – One mouse was seen scurrying through the grass. Their numbers should be large in this type of habitat.

Cat (*Felis catus*) - One cat was seen hunting for rodents during the evening survey.

Horse (*Equus caballus*) – Horse tracks were seen along a dirt road. Local horse owners no doubt occasionally ride through this area.

Other mammals one might expect to see here include rats (*Rattus rattus*) and the occasional domestic dog (*Canis familiaris*). Rats would feed on seeds and herbaceous vegetation and domestic dogs would wander here from the adjacent residential area. Mongoose are not presently found on the island of Lana'i.

A special effort was made to look for the native Hawaiian hoary bat by making an evening survey of the area. When present in an area these bats can be easily identified as they forage for insects, their distinctive flight patterns clearly visible in the glow of twilight. No evidence of such activity was observed though visibility was excellent and plenty of flying insects were seen.

In addition, an electronic bat detecting device was employed set to the frequency range of 27,000 to 28,000 hertz which these bats are known to utilize. No bats were detected using this device.

BIRDS

Birdlife was moderate both in number of species and in total number of individuals. Eleven species of non-native birds were identified within the project area. Taxonomy and nomenclature follow American Ornithologists' Union (2005).

Zebra dove (*Geopelia striata*) – These small doves were found throughout the property in openings along roads and in small clearings in the grass.

Common myna (*Acridotheres tristis*) – Pairs of mynas were seen in small trees and in flight over the property.

Spotted dove (*Streptopelia chinensis*) – Several of these large doves were seen perched in trees and in flight. They usually do not congregate unless there is abundant feed available.

Cattle egret (*Bubulcus ibis*) – Scattered individuals were seen feeding in openings. Larger groups were seen during the evening flying toward roosting trees near the settling ponds below town.

Turkey (*Meleagris gallopavo*) – Two flocks of these large birds were seen along roads and in forest understory.

House sparrow (*Passer domesticus*) – Small groups of sparrows were seen feeding in small trees on the property.

House finch (*Carpodacus mexicanus*) – Small groups of finches were seen perched in trees and flying through the property.

Gray francolin (*Francolinus pondicerianus*) – A few francolins were seen along dirt roads and heard calling across the property.

Japanese white-eye (*Zosterops japonicus*) – A few of these small green birds were seen feeding on insects in trees and making their high-pitched chattering calls.

African silverbill (*Lonchura cantans*) –One flock of these tiny beige birds were seen in a tree making their gentle high-pitched calls.

Nutmeg mannikin (*Lonchura punctulata*) – One flock of these tiny brown birds was seen resting in a tree snag.

While not seen, this habitat might be periodically utilized by the pueo or Hawaiian owl (*Asio flammeus sanwichensis*) which is still fairly common on Lana'i. These native owls usually prefer open habitat a little more distant from human habitations. A few other non-native birds may also occasionally use this property. The habitat is not suitable for Lana'is native forest birds which have now almost completely disappeared from the island, nor is the habitat suitable for native seabirds such as the 'ua'u (*Pterodroma sandwichensis*) or the 'a'o (*Puffinus newelli*) which are known to nest in dense, wet, fern shrubland on the summit of the island. The nene or Hawaiian goose (*Branta sandvicensis*) is not known from Lana'i.

INSECTS

While insects in general were not tallied, a diversity of them were seen throughout the area, helping to fuel the bird activity observed. One native insect, Blackburn's sphinx moth (*Manduca blackburni*) has been put on the Endangered Species list (USFWS 2000) and this designation requires special focus to ascertain if it is present. None were found. This insects' native host plants are species of 'aiea (*Nothocestrum spp.*) and some non-native host plants are tobacco (*Nicotiana tabacum*) and tree tobacco (*Nicotiana glauca*). None of the host plant species were found on the property and no Blackburn's sphinx moths or their larvae were observed.

DISCUSSION AND RECOMMENDATIONS

The fauna survey documented a variety of mammals and birds, all of which were non-native. None of these are of any particular environmental concern. No special habitats were found on the property either. It is determined that the proposed project will not have a significant negative impact on the fauna resources on Lana'i.

Seabirds including the Endangered ua'u and the Threatened 'a'o were not found on this property and are highly unlikely to utilize such an area. Yet these birds are known to fly over these lowlands in the evenings to get to their burrows high in the mountains. Young birds which are fledgling during the fall months are particularly vulnerable to being confused by bright lights upon which they are prone to crash and be injured or killed. It is recommended that any outdoor lights in the proposed project be hooded to direct the light downward so the light is not visible from above.

ANIMAL SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within two groups: Mammals and Birds. For each species the following information is provided:

1. Common name

2. Scientific name

3. Bio-geographical status. The following symbols are used:
   endemic = native only to Hawaii; not naturally occurring anywhere else in the world.
   indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).
   non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.

4. Abundance of each species within the project area:
   abundant = many flocks or individuals seen throughout the area at all times of day.
   common = a few flocks or well scattered individuals throughout the area.
   uncommon = only one flock or several individuals seen within the project area.
   rare = only one or two seen within the project area.

COMMON NAME	SCIENTIFIC NAME	STATUS	ABUNDANCE
MAMMALS			
Axis deer	*Axis axis*	non-native	common
Horse	*Equus caballus*	non-native	rare
Mouse	*Mus domesticus*	non-native	rare
Cat	*Felis catus*	non-native	rare
BIRDS			
Zebra dove	*Geopelia striata*	non-native	uncommon
Common myna	*Acridotheres tristis*	non-native	uncommon
Spotted dove	*Streptopelia chinensis*	non-native	uncommon
Cattle egret	*Bublcus ibis*	non-native	uncommon
Turkey	*Meleagris gallopavo*	non-native	uncommon
House sparrow	*Passer domesticus*	non-native	uncommon
House finch	*Carpodacus mexicanus*	non-native	uncommon
Gray francolin	*Francolinus pondicerianus*	non-native	uncommon
Japanese white-eye	*Zosterops japonicus*	non-native	uncommon
African silverbill	*Lonchura cantans*	non-native	rare
Nutmeg mannikin	*Lonchura punctulata*	non-native	rare

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APPENDIX C.

Phase I Environmental Site Assessment

EQI
EnviroQuest INC.

Phase 1 Environmental Site Assessment

County of Maui
65 Acre Site in Lanai City
Lanai City, Lanai, Hawai'i 96763

Identified as
First Division Tax Map Key
4-9-002, parcel 058
Honolulu, Hawaii
Latitude (North) 20° 49' 31.4"
Longitude (West) 156° 55' 40.1"

Prepared For:

Pacific Architects, Inc
2020 South King Street
Honolulu, HI 96826

Prepared By:

EnviroQuest, Inc.
95-029 Hekaha Street, Suite 21
Aiea, HI 96701
808-486-5881

Project Number: 4006
Project Manager: Miles T. Nirei

October 2008

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ABBREVIATIONS AND ACRONYMS

ASTM	American Society for Testing and Materials
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
EDR	Environmental Data Resources Inc.
EPA	U.S. Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
HEER	Hazard Evaluation and Emergency Response Office
HDOH	State of Hawai`i Department of Health
HWS	Hazardous Waste Site
LUST	Leaking Underground Storage Tank
MSL	Mean sea level
NFRAP	No Further Remedial Action Planned
NFA	No Further Action
NPL	National Priority List
PCB	Polychlorinated biphenyl
Ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conversation and Recovery Information System
SHWB	Solid and Hazardous Waste Branch
SQG	Small Quantity Generator
TMK	Tax Map Key
TSD	Treatment, Storage and Disposal
UIC	Underground injection control
UST	Underground storage tank

EXECUTIVE SUMMARY

EnviroQuest, Inc. was retained by Pacific Architects, Inc. to perform a Phase I Environmental Site Assessment of the Tax Map Key 4-9-002, parcel 58, located near the corner of 5th Street and Kamoku Street (real assessment office registered as Awalua Ave), Lanai City, island of Lanai, County of Maui, Hawai'i.

This Phase I Environmental Site Assessment was performed in conformance with the scope and limitations of ASTM Standard E 1527-05, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" of the parcel located on the island of Lanai as stated as TMK 4-9-002, parcel 58. This assessment revealed no evidence of recognized environmental conditions in connection with the property.

1. INTRODUCTION

1.1 PURPOSE

EnviroQuest, Inc. was retained by Pacific Architects, Inc. to perform a Phase I Environmental Site Assessment of the Tax Map Key (TMK) 4-9-002, parcel 58 (65 acres) located approximately 200 feet east from the corner of 5th Street and Kamoku Street (real assessment office registered as Awalua Ave), Lanai City, island of Lanai, County of Maui, Hawai'i. The site location is shown in Figure 1 and a topographic map is shown in Figure 2.

This environmental site assessment was performed to establish recognized environmental conditions at the property and propose recommendations for additional investigation, if warranted. "Recognized environmental conditions" means the presence, or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water on the property (American Society for Testing and Materials [ASTM] 2005). This term is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies.

Hazardous substances are those substances defined under Section 101 of the Federal Comprehensive Environmental Response, Compensation, and Liability Act. They are listed under Title 40 of the Code of Federal Regulations (CFR) Part 302. They include hazardous substances and toxic pollutants regulated under the Clean Water Act, hazardous wastes regulated under the Resource Conservation and Recovery Act (RCRA), and hazardous air pollutants regulated under the Clean Air Act. Petroleum products include crude oil, gasoline, kerosene, diesel oil, jet fuel, fuel oil, lubricating oil, natural gas, liquefied natural gas, and synthetic gas usable for fuel.

This assessment was conducted in accordance with ASTM Standard E 1527-05, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (2005). The scope of work consisted of four major components:

1. Site Description
    - Location and Legal Description
    - Site and Vicinity Characteristics
    - Site Description
    - Physiography
    - Site Geology
2. Records Review
    - Federal and State Records
    - Local Records
    - Site History

3. Site Reconnaissance and Interviews
    - Site Reconnaissance
    - Interviews
4. Conclusions and Recommendations

1.2 LIMITATIONS AND EXCLUSIONS

We have performed our services for this project in accordance with our Agreement and in accordance with ASTM Standard E1527-05 for environmental site assessments; no guarantees are either expressed or implied.

The record search was limited to information available from public sources and, to a limited extent, records provided for review by the current property lessee or owner. This information changes continually and is frequently incomplete. Unless we have actual knowledge to the contrary, information obtained from interviews, or provided to us by third parties has been assumed to be correct and complete. We do not assume any liability for the misrepresentation of the information, or for items not visible, accessible, or present on the site at the time of the site visit.

Because of the uncertainty in identifying and characterizing conditions beneath the surface of the ground, no environmental investigation can show or prove the absence of hazardous substances at the site. Likewise, because environmental regulatory programs are constantly evolving and changing, statements about the acceptability of the site for human health and the environment are relative only to the regulatory program in place today. Future programs could change the way these conditions are viewed and could require additional action to address hazardous conditions at the site.

Work for this project was performed and this report was prepared in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. Opinions and judgments expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions. It is intended for the exclusive use of Pacific Architects, Inc. for specific application to the site. This report is not meant to represent a legal opinion. No other warranty, expressed or implied, is made. Any reliance on this report by third parties shall be at such party's sole risk.

EnviroQuest, Inc. relied on verbal information provided by the individuals indicated in this report, and EnviroQuest, Inc. can only relay this information and cannot be responsible for its accuracy or completeness. Any questions regarding our work and this report, the presentation of the information, and the interpretation of the data are welcome and should be referred to the project manager.

2. SITE DESCRIPTION

This section describes the physical characteristics of the site, including land use, topography, geology, and hydrogeology.

2.1 LOCATION AND ZONING

The subject property consists of a total of 115 acres, 65 acres of which EnviroQuest, Inc. was contracted to investigate. This parcel is located on the outskirts of the southwest corner of Lanai City on the island of Lanai (Figure 1). The parcel is identified as TMK 4-9-002, parcel 058 (Figure 2). Lanai City is located in the center of the island. The parcel is approximately 7 miles east of Kaumalapau Harbor (Pacific Ocean), which is the nearest body of water. The subject property is zoned for Agricultural use. The property is owned by the County of Maui per the Maui County Real Property Assessment Division (www.mauipropertytax.com)

Single family homes are located northeast and east of the property. Lanai Elementary, Middle, and High School and a scrap metal recycling plant are located south of the property.

2.2 SITE AND VICINITY CHARACTERISTICS AND TOPOGRAPHY

The topography of the surrounding area is relatively flat with low vegetation and bushes (Figure 2). The elevation of the parcel is approximately 1,562 feet above mean sea level (msl).

The surface area of the subject property is relatively flat with low level brush and ground vegetation. The natural vegetation is made up of kiawe, bristly foxtail, lantana, and Bermuda grass (see photograph log).

Nearly the entire population lives in Lanai City, the only town on the island. An airport is located within 5 miles of the town. Kaumalapau Harbor, a shallow-water harbor, is on the southwestern coast.

2.3 PHYSIOGRAPHY

The Hawaiian Islands lie at the northern margin of the tropics (21 degrees north latitude), but have a subtropical climate due to cool trade winds. These northeasterly trades prevail for much of the year, usually blowing from 10 to 15 knots. The average daily temperature varies between 64° F and 85° F in winter and between 75° F and 90° F in summer. The average annual rainfall for the Island of Lanai ranges between 20 and 60 inches. The leeward coast averages an annual rainfall is less than 20 inches and at Lana'ihale (elevation 3,370 ft) the average is as high as 60 inches per year.

The property encompasses an area of approximately 115 acres. This project contract was to assess 65 of the 115 acres. An additional 8 acres were requested to be added on during a preliminary meeting with all parties. There are no structures on this property.

2.4 SITE GEOLOGY AND HYDROGEOLOGY

The island of Lanai is the sixth largest island in the State of Hawaii. It is 18 miles long and 13 miles wide. The land area is 90,000 acres or 141 square miles. The island rises to 3,370 feet at the summit of Lana'ihale. The Central Plateau of Lanai is southwest of the summit at an elevation of 1,000 to 2,000 feet. The plateau was once the largest pineapple plantation in the world. Below the 1,200 foot elevation the soils are eroded and stony. At the north end of the island, at approximately 1,500 to 1,800 feet, there are broad areas of severely windblown soils. The north and east sides of Lanai are dissected by many deep gulches and are inaccessible in many places.

Lanai is formed by the eroded remnants of a single volcano. The geological structure of the island is dominated by the collapsed caldera in the Palawai Basin, which is 6 miles long by 1.5 to 3 miles wide; the southwest rift is about 3 miles long and 1.5 to 2 miles wide. The rest of the island is layered thin lava flows; occasionally a small volcanic cone is present.

Lanai was a simple shield volcano with a typical history of caldera collapse, cessation of eruptions, erosion, and subsidence. Extensive faulting was associated with the collapse of the caldera and the adjustment of the rift zones. Investigations have suggested that enormous landslides broke away from the south and southwest portion of the island.

Lanai is composed of a single parent rock consisting of primitive basalt and olivine basalt. Differentiation into more alkalic rock types did not follow initial volcanic activity, as was the case of other major islands of the Hawaiian Archipelago; nor did post-erosional volcanism occur, as it did on Kauai, Oahu, and Maui.

The surface and subsurface rocks of the island are permeable to infiltration from rainfall to the extent that surface runoff infrequently reaches the sea. No perennial streams exist on Lanai. Weak springs caused by local perching strata exist in gulches leeward of the crest but were never reliable as a water source.

The simple geology of Lanai is reflected in the occurrence of its water resources. Potential surface water supplies do not exist because of the preciousness of the rocks, whereas fresh to saline groundwater underlies the entire island. On the flanks of the volcanic dome, brackish basal groundwater with a water table no more than a few feet above sea level occurs.

The Leeward Aquifer System, which is part of the Central Aquifer Sector (System Identifier 5010102), underlies the property. The area aquifer is classified as a high level, unconfined dike aquifer that is currently used. The groundwater, used for drinking, is categorized as having fresh salinity and is considered irreplaceable. Groundwater has a high vulnerability for contamination.

The site is situated above the Underground Injection Control (UIC) line. The UIC line is used by the State to delineate groundwater into areas that are fully protected from areas that are managed. The groundwater beneath the property is fully protected.

2.5 Regulatory Agency Records and Report Review

EnviroQuest, Inc. reviewed publicly available federal, state, and local records to assess the potential presence of hazardous substances and petroleum at the site. Federal and state environmental databases were searched to identify operations on the subject property and vicinity properties regulated by the U.S. Environmental Protection Agency (EPA) and/or Hawaii Department of Health (HDOH). Section 5 contains a detailed discussion on environmental issues identified during record reviews.

Federal and State Records

A standardized database report was commissioned from Environmental Data Resources (contained in Appendix 1) which compiles information from the following federal and state databases:

- National Priorities List (NPL) and proposed NPL sites
- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS/NFRAP) sites
- Corrective Action Report for hazardous waste facilities (CORRACTS)

- Hazardous waste treatment, storage, and disposal facilities (TSD)
- Emergency response notification system for spills (ERNS)
- Large quantity and small quantity generators of hazardous waste (LG GEN/SM GEN)
- State landfills and other solid waste sites (SWLF)

This information was supplemented by a review of databases specific to Hawai`i, including:

- Underground Storage Tank (UST) sites registered with the State of Hawai`i
- Leaking Underground Storage Tank (LUST) sites listed by the State of Hawai`i
- Groundwater contamination maps for the State of Hawai`i (HDOH 1998)
- Release reports under the State Contingency Plan
- State Contingency Plan list of sites being addressed by the HDOH Hazard Evaluation and Emergency Response (HEER) office

In addition to identifying potential hazardous substance and petroleum release sites, the report included in Appendix 1 contains information about the physical characteristics of the site, including soil geology and floodplain information.

Based on information compiled from these sources, EnviroQuest, Inc. identified registered, permitted, or regulated sites within one-half mile of the site that involve management of hazardous substances or petroleum. There were no NPL or proposed NPL sites within one-half mile of the property. No solid or hazardous waste landfills, or facilities regulated under the Clean Air Act were identified.

2.5.1 Federal CERCLIS

CERCLIS is a Federal database maintaining national information on over 15,000 sites identified as hazardous or potentially hazardous, which may require action. These sites are currently being investigated or an investigation has been completed regarding the release of hazardous substances. The most serious of this list, as ranked by the hazardous ranking system, are eligible for listing onto the NPL. No CERCLA sites were identified within a one-mile radius of the property. CERCLA sites reclassified by the EPA as No Further Remedial Action Planned (NFRAP) were identified within one-mile of the parcel.

2.5.2 Federal RCRA

The Resource Conservation and Recovery (RCRA) Information System (RCRIS) is a national system used to track events and activities that fall under the jurisdiction of RCRA. There are three significant subsets to RCRIS:

- x RCRA treatment, storage, and disposal facilities (TSDs). Includes facilities that treat, store, dispose, or incinerate hazardous waste.
- x RCRA generators. Includes hazardous waste generators, which create more than 100 kilograms of hazardous waste per month or meet other RCRA requirements.
- x RCRA Corrective Action Sites (CORRACTS). Includes sites with reported corrective actions.

The database search identified no RCRA TSDs and no CORRACTS within one-mile of the properties. A CORRACTS facility is beyond the one-mile search distance under ASTM E1527-05 and is not expected to impact the properties.

There is no registered RCRA Small Quantity hazardous waste generators (SQG) located within one-half mile of the site. There are no registered waste generators within the search distance under ASTM E1527-05 of the property.

2.5.3 State Equivalent NPL and CERCLIS

Spills and releases of hazardous substances that occur in Hawaii are reported to the HDOH under the notification requirement in the Hawaii Environmental Response Law. Spills and releases that are not cleaned up or remediated under the oversight of HDOH emergency response personnel are evaluated for potential inclusion onto the SITELIST database. The sites on the SITELIST are considered to pose an environmental or health threat and are prioritized for further investigations and potential remediation. The sites on SITELIST are the State's equivalent of the EPA CERCLIS. There are no sites on SITELIST within a one-mile radius of the property.

2.5.4 State Leaking Underground Storage Tanks

The HDOH maintains a report on leaking underground storage tanks. The report is a comprehensive listing of reported LUSTs in Hawaii. The database search identified one LUST within one-half mile radius of the property. The LUST facility had releases that were confirmed with release responses initiated. The LUST facility on file is:

Oshiro Enterprises, Inc.
850 Fraser Ave.
Lanai City, Hawaii 96763

The leak reported to the Department of Health was from a UST in early 2000. Release response actions were taken and HDOH issued a "no further action" letter in January 2001.

2.5.5 State Underground Storage Tanks (UST)

Certain underground storage tanks (USTs) are required to be registered by federal or state regulations. For regulated USTs, notifications must be filed for existing USTs, USTs closed in place, and new USTs. The database search indicates fifteen (15) UST facilities within a quarter mile radius of the property. The UST facilities are mapped out in the colorized EDR report in Appendix 1. There are two (2) tanks that are permanently out of use today. The UST's were taken out of service June 24, 1993. Both USTs were 2,000 gallon steel units storing gasoline. The tanks were owned by:

Castle & Cooke
P.O. Box L
Lanai City, Hawaii 96763

None of the surrounding tank facilities pose a threat to the subject property.

2.5.6 State of Hawaii Department of Health Record Review

EnviroQuest requested HDOH HEER and Solid and Hazardous Waste Branch public files on September 20, 2008 for the subject site. Per personal communication with HDOH, there are no records on file regarding the subject property.

2.6 LOCAL RECORDS

Maui County Real Property Assessment Division records were reviewed to compile an ownership and lease history. Historic topographic maps, Historical Topographic and Sanborn Fire Insurance Company maps obtained from EDR were also examined.

A review of the Maui Real Property Assessment Division online records revealed the owner of the property is the County of Maui. The date of recording of the property was November 11, 1998.

As part of this investigation, a review of other resources, including personal communication, revealed that the previous owner was Castle & Cooke. The island has produced pineapple on 91% of island from 1922 to the last harvest in 1992.

3. SITE RECONNAISSANCE AND INTERVIEWS

3.1 SITE RECONNAISSANCE

Mr. Miles Nirei and Mr. David Leigh of EnviroQuest Inc. visited the site on September 10, 2008. A visual inspection was conducted of the property and surrounding area. Interviews were also conducted during the inspection. According to the meeting held on May 3 with all interested parties, it was stated that there was a survey conducted to determine the boundaries of the property. During the field investigation old survey tape was observed tied to brush however there were no marking on the tape. Mr. Nirei and Mr. Leigh surveyed the property by walking and riding across the property. Identifiable trails and off-trail locations were surveyed for evidence of debris or potential staining on the ground. Due to the landscape and the lack of boundary markings it's estimated that the area surveyed exceed 80 acres.

Lanai City resident, Ms. Kayla Eligado, was observed riding across the property on a quad trac recreational vehicle. Mr. Nirei requested the assistance of Ms. Eligado to survey the property utilizing her quad trac. With the assistance of Ms. Elgado, Mr. Nirei was able to ride across the property looking for any anomalies that could be an environmental concern. Observed was black plastic debris and Axis deer. According to personal interviews, the plastic was utilized throughout the plantation to mark plant location, retain fumigant, control weeds and raise soil temperature (Sipes 2000).

The visual investigation revealed nothing unusual that would indicate to this inspector that there are any major environmental concerns. There was no visible staining indicating a release of hazardous materials occurred nor were there any observed illegal dump sites on the property.

A scrap metal recycling facility, Maui Tri Isle, Inc., was observed approximately one-quarter of a mile southeast of the subject property. The facility segregates recyclable items for removal from the island. The facility does not pose an environmental concern to the subject property.

3.1.1 Current Activities

Currently the County of Maui owns the subject property. Axis deer roam the dormant property which is overgrown with vegetation.

3.1.2 Building Materials

There are no building structures on the property or evidence that any structures were ever on the property.

3.1.3 Hazardous Materials

No hazardous materials or abandoned storage containers are stored on property or is there visible evidence that any hazardous materials were stored on the property.

3.1.4 Transformers and Oil-Filled Electrical Equipment

There is no transformer type equipment on the property.

3.1.5 Solid Waste Disposal

No solid waste disposal was observed on the property.

3.2 INTERVIEWS

Personal interviews were conducted to gain a further understanding of the area and potential past practices of the area. Interviewed were Ms. Kayla Eligado, employed by the U.S.

Department of Homeland Security TSA Lanai Airport; Mr. Kepa Moly, Executive Director of the Lanai Culture & Heritage Center; and Mr. Andres Velasco, employee of Maui Tri Isle, Inc., all residents of Lanai City. Observations and opinions are incorporated into the site reconnaissance descriptions above and are attributed as appropriate.

This investigation was limited to a visual inspection, review of historical records and interviews of current pertinent personnel. There were no subsurface investigations or sampling conducted.

4. ENVIRONMENTAL CONCERNS AND RECOMMENDATIONS

This section identifies environmental concerns observed at the property along with recommendations for addressing those concerns.

After document review, personal interview and physical visual review of the subject property, there are no recognized environmental conditions.

5. CONCLUSIONS

The conclusions presented below are based on the site reconnaissance, interviews with site personnel, historical review, and records review conducted during this Phase 1 Environmental Assessment. The site consists of land that has relatively flat geography with various vegetations and no structure of any type.

- We have performed this Phase 1 Environmental Site Assessment in conformance with the scope and limitations of ASTM Standard E 1527-05, of 65 acres in Lanai City. This assessment has revealed no evidence of recognized environmental conditions in connection with the property

6. REFERENCES

American Society for Testing and Materials. 2000. Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process. ASTM Standard E 1527-00.

Juvik, Sonia P. and James O. Juvik, editors. 1998. Atlas of Hawai`i, Third Edition. Department of Geography, University of Hawai`i at Hilo. Honolulu, University of Hawai`i Press.

Mink, John F and L. Stephen Lau 1993. Aquifer Identification and Classification for Lanai, Groundwater Protection Strategy for Hawai'i. Technical Report No. 190. Water Resources Research Center, University of Hawaii at Manoa

Sipes, Brent S. 2000. Crop Profile for Pineapples in Hawaii. Department of Plant Pathology, University of Hawaii at Manoa.

Personal Communication:

Kayla Eligado, resident of Lanai City, TSA employee

Andres Velasco, resident of Lanai City, Tri Isle Inc. employee

Kepa Moly, resident of Lanai City, Executive Director, Lanai Culture & Heritage Center

Grace Simmons, Department of Health, Solid and Hazardous Waste Branch

7. SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

This Phase 1 Environmental Site Assessment was completed by EnviroQuest, Inc. Questions and comments on this report may be directed to the undersigned:

Miles T. Nirei, M.S.
Senior Environmental Scientist

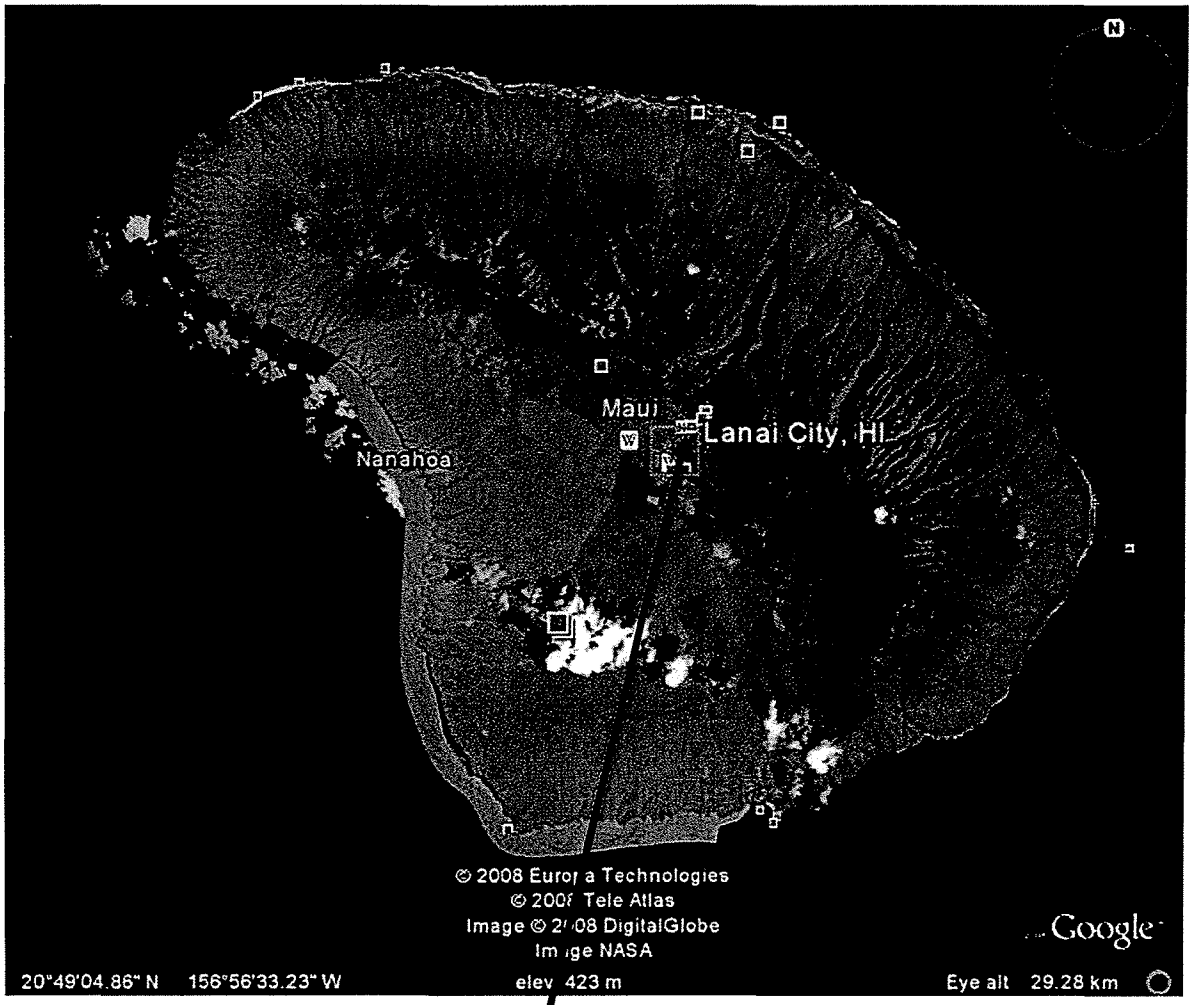
EnviroQuest, Inc.
95-029 Hekaha Street, Suite 21
Aiea, HI 96701

Telephone: (808) 486-5881
Facsimile: (808) 486-5889
Email: eqi@enviroquestinc.com

FIGURES

EQI
EnviroQuest INC

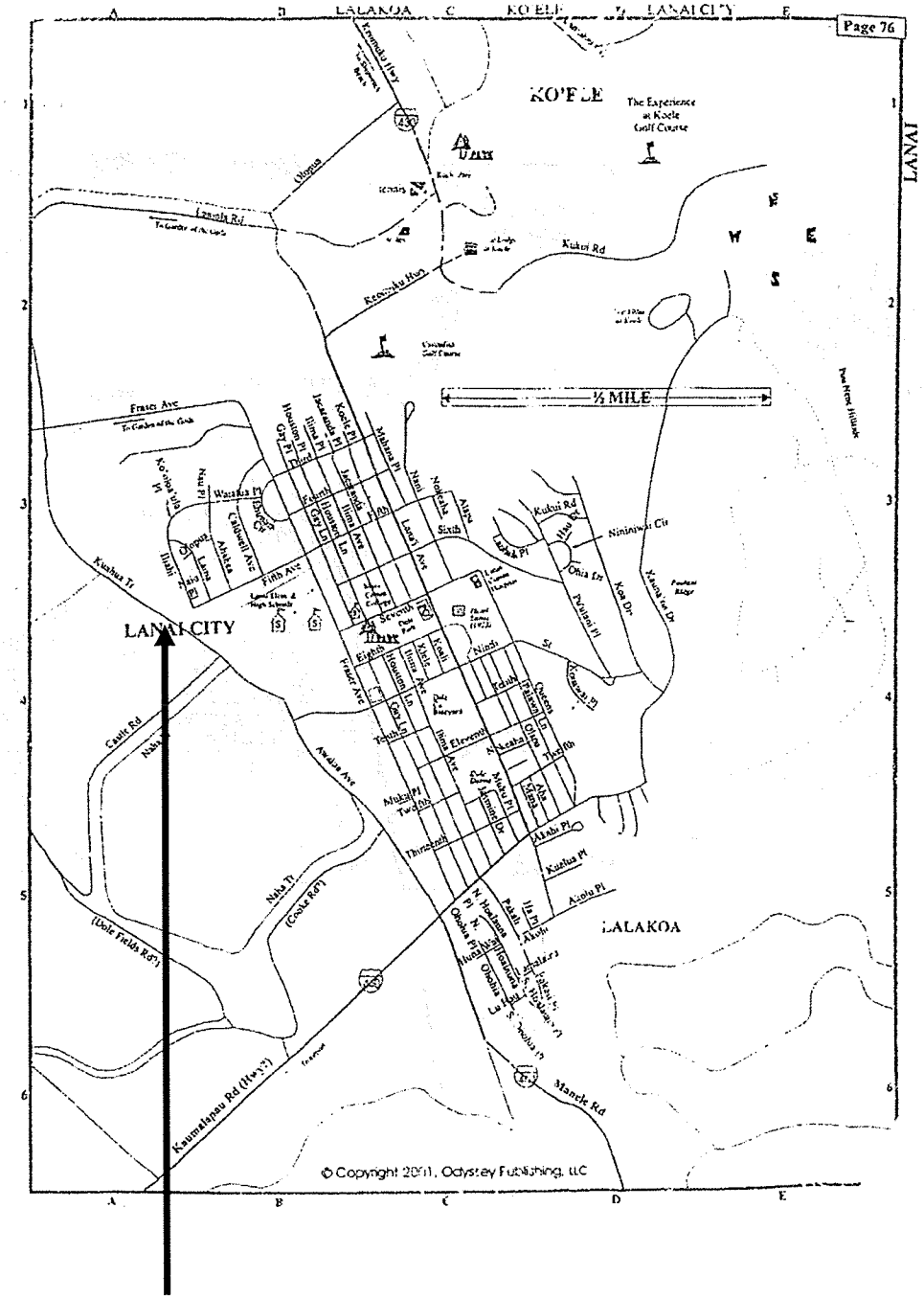
FIGURE 1
SITE LOCATION MAP



Project Site

EQI
EnviroQuest INC

FIGURE 2
TOPOGRAPHIC MAP



EQI
EnviroQuest INC

FIGURE 3

Site Layout

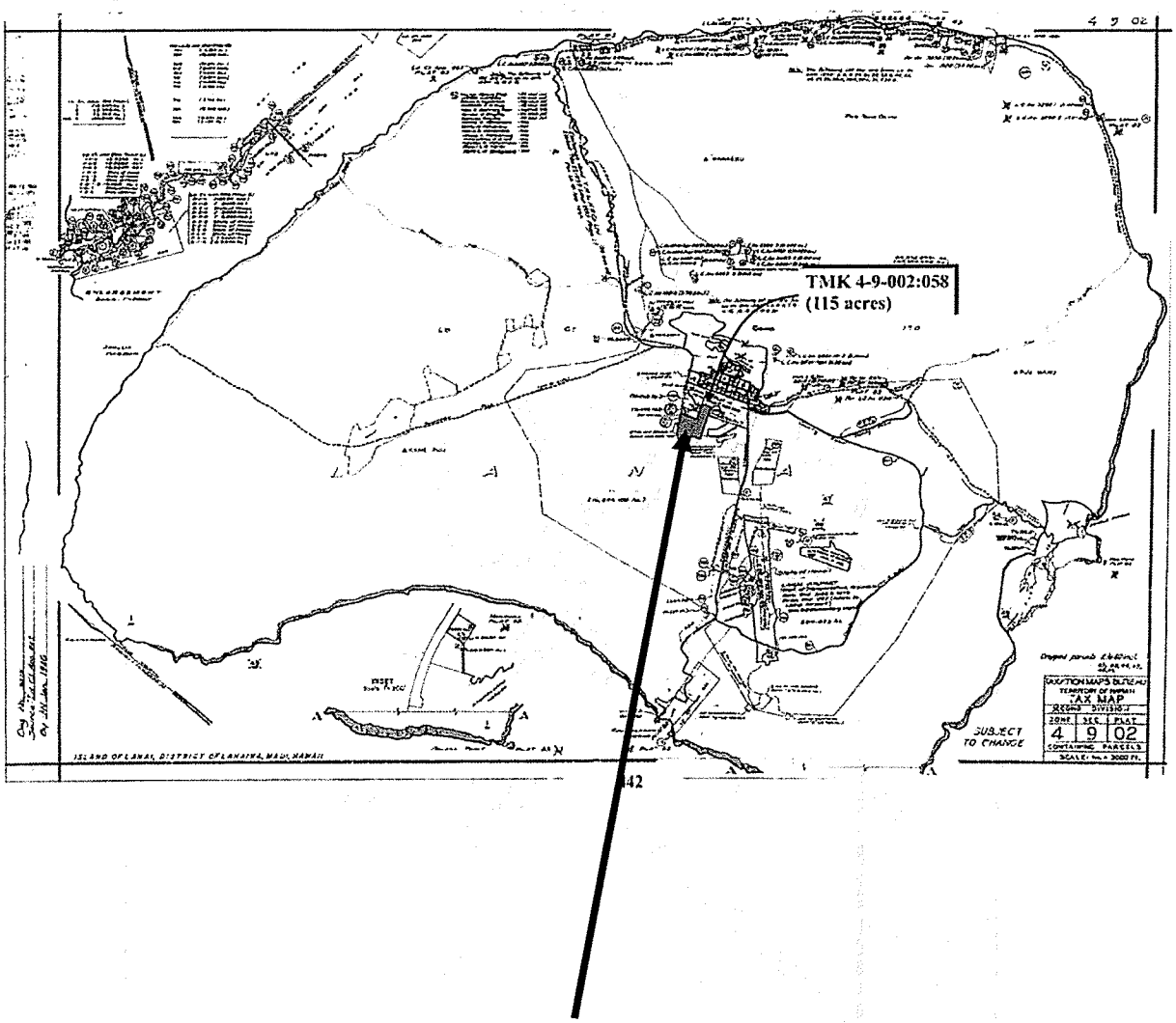


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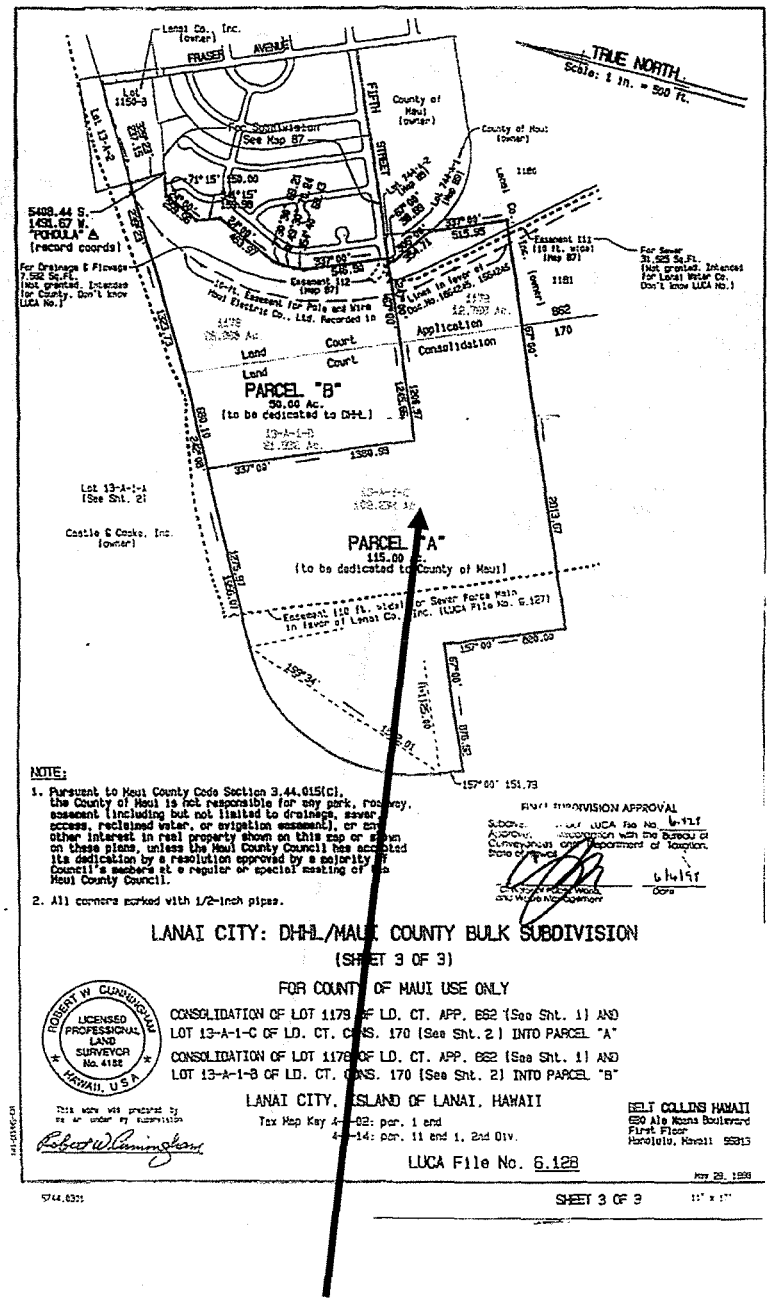
FIGURE 4

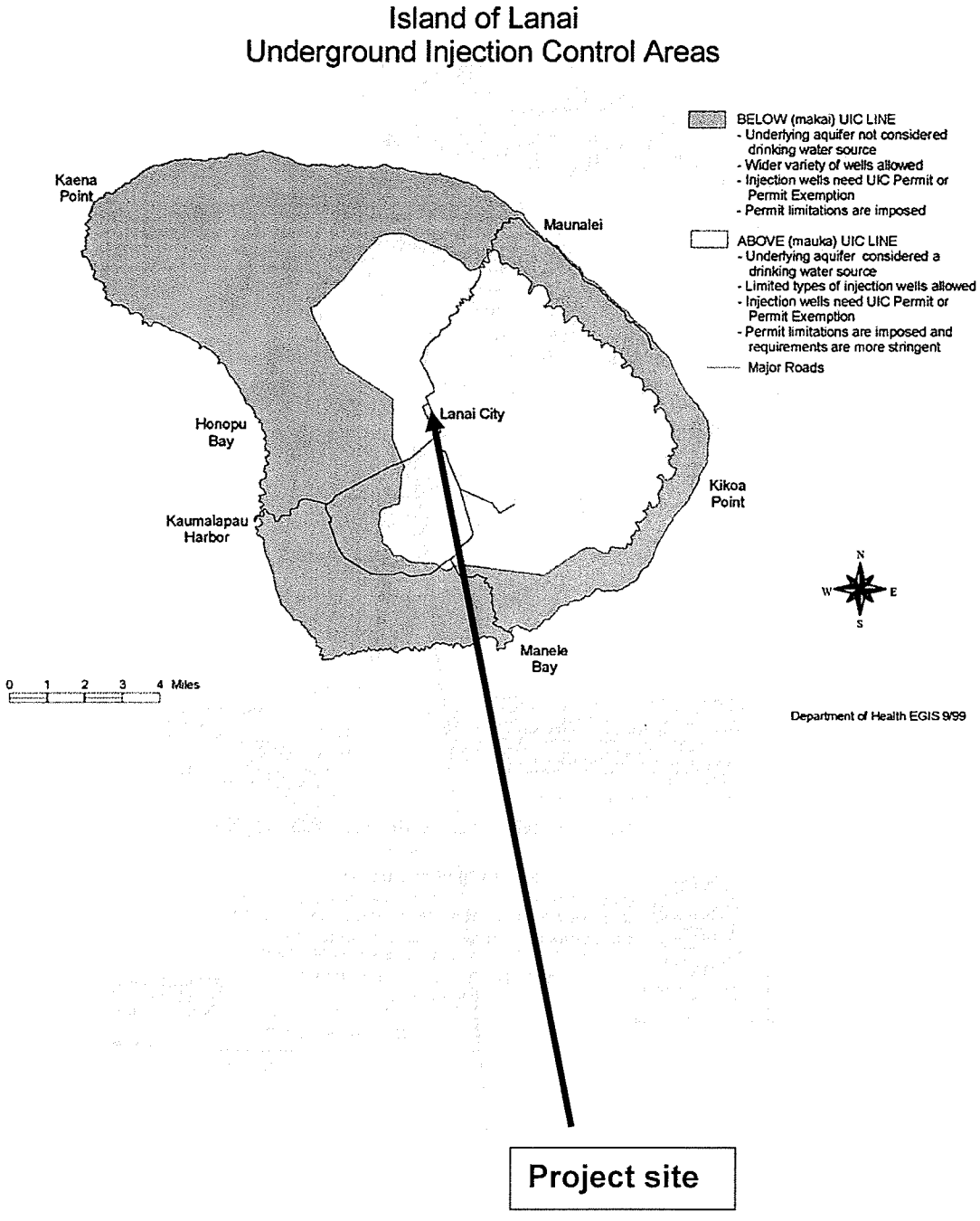
Parcel Map



Project Site

EQI
EnviroQuest
INC

FIGURE 5
UNDERGROUND INJECTION CONTROL AREAS MAP



EQI
EnviroQuest INC

FIGURE 6
REQUEST TO REVIEW GOVERNMENT DOCUMENTS

FAX: (808) 586-7509

Request to Access a Government Record

DATE: 9/21/08 Email Address: nivcim001@hawaii.rr.com
TO: DOH/EMD/Solid and Hazardous Waste Branch, 919 Ala Moana Blvd., Rm. 212
FROM: ENVIROQUEST
Name or Alias (Print)

Contact Information/Company Name (Print)
MILES NIKEI 631-9150
Phone# Fax #

Although you are not required to provide any personal information, you should provide enough information to allow the agency to contact you about this request. The processing of this request may be stopped if the agency is unable to contact you. Therefore, please provide any information that will allow the agency to contact you (name or alias, telephone or fax number, mailing address, e-mail, etc.).

I WOULD LIKE THE FOLLOWING GOVERNMENT RECORD:
Describe the government record as specifically as possible so that it can be located. Try to provide a record name, subject matter, date, location, purpose, or names of persons to whom the record refers, or other information that could help the agency identify the record.

CASTLE & COOKE
LANAI CITY
ANALUA AVE @ CORNER OF KAMOKU / 5TH ST

I WOULD LIKE: (please check one or more of the options below)
✓ To inspect the government record.
___ A copy of the government record: (Please check one of the options below). See the back of this page for information about fees that you may be required to pay for agency services to process your record request. Note: Copying and transmission charges may also apply to certain options.
___ Pick up at agency (date and time):_____
___ Mail
___ Fax (toll free and only if available)
___ Other, if available (please specify);

___ If the agency maintains the records in a form other than paper, please advise in which format you would prefer to have the record.
___ Electronic ___ Audio ___ Other (please specify):_____

___ Check here if you are attaching a request for waiver of fees in the public interest (see waiver information on back).

SEE BACK FOR IMPORTANT INFORMATION

OIP 1 (rev. 7/29/99)

EQI
EnviroQuest INC

FIGURE 6a
REQUEST TO REVIEW GOVERNMENT DOCUMENTS

REQUEST TO ACCESS A GOVERNMENT RECORD

DATE: 9/20/02

TO: Hazard Evaluation & Emergency Response Office (Fax: 586-7537)

FROM: ENVIROQUEST
Name or Alias

Contact Information
MILES NIKEI 631-9650

Although you are not required to provide any personal information, you should provide enough information to allow the agency to contact you about this request. The processing of this request may be stopped if the agency is unable to contact you. Therefore, please provide any information that will allow the agency to contact you (name or alias, telephone or fax number, mailing address, e-mail address, etc.).

I WOULD LIKE THE FOLLOWING GOVERNMENT RECORD:

Describe the government record as specifically as possible so that it can be located. Try to provide a record name, subject matter, date, location, purpose, or name of persons to whom the record refers, or other information that could help the agency identify the record. A complete and accurate description of the government record you request will prevent delays in locating the record. Attach a second page if needed.

CASTLE ; COOKE
LANAI CITY
ALUALUA AVE @ CORNER OF KAMAKA / 5TH ST.

I WOULD LIKE: (please check one or more of the options below)

☒ To inspect the government record.

☐ A copy of the government record: (Please check one of the options below.) See the back of this page for information about fees that you may be required to pay for agency services to process your record request. Note: Copying and transmission charges may also apply to certain options.

- ☐ Pick up at agency (date and time):_____
- ☐ Mail
- ☐ Fax (toll free and only if available)
- ☐ Other, if available (please specify):_____

☐ If the agency maintains the records in a form other than paper, please advise in which format you would prefer to have the record.

☐ Electronic ☐ Audio ☐ Other (please specify):_____

☐ Check this box if you are attaching a request for waiver of fees in the public interest (see waiver information on back).

SEE BACK FOR IMPORTANT INFORMATION

OFFICIAL USE ONLY:

Office Manager _____ Date _____

OIP 1 (rev. 7/29/99)

APPENDIX 1

EDR Radius Map Report

Project Number: NA
Lanai City
Awalua Ave
Lanai City, HI 96763

Inquiry Number: 2327818.2s
October 08, 2008

The EDR Radius Map™ Report with GeoCheck®

Prepared using the EDR FieldCheck® System

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of the environmental records was conducted by Environmental Data Resources, Inc. (EDR). ENVIROQUEST used the EDR FieldCheck System to review and/or revise the results of this search, based on independent data verification by ENVIROQUEST. The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

AWALUA AVE
LANAI CITY, HI 96763

COORDINATES

Latitude (North):	20.825380 - 20° 49' 31.4"
Longitude (West):	156.927810 - 156° 55' 40.1"
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	715648.4
UTM Y (Meters):	2304072.8
Elevation:	1562 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	20156-G8 ISLAND OF LANAI OE NW, HI
Most Recent Revision:	Not reported

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No sites were identified in following databases.

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
LIENS 2	CERCLA Lien Information
CORRACTS	Corrective Action Report
RCRA-TSDF	RCRA - Transporters, Storage and Disposal
RCRA-LQG	RCRA - Large Quantity Generators
RCRA-SQG	RCRA - Small Quantity Generators

EXECUTIVE SUMMARY

RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generator
RCRA-NonGen	RCRA - Non Generators
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
DOT OPS	Incident and Accident Data
US CDL	Clandestine Drug Labs
US BROWNFIELDS	A Listing of Brownfields Sites
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
LUCIS	Land Use Control Information System
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ODI	Open Dump Inventory
MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System
SCRD DRYCLEANERS	State Coalition for Redediation of Drycleaners Listing

STATE AND LOCAL RECORDS

SHWS	Sites List
SWF/LF	Permitted Landfills in the State of Hawaii
UST	Underground Storage Tank Database
SPILLS	Release Notifications
INST CONTROL	Sites with Institutional Controls
VCP	Voluntary Response Program Sites
DRYCLEANERS	Permitted Drycleaner Facility Listing
BROWNFIELDS	Brownfields Sites
AIRS	List of Permitted Facilities

TRIBAL RECORDS

INDIAN RESERV	Indian Reservations
INDIAN ODI	Report on the Status of Open Dumps on Indian Lands
INDIAN LUST	Leaking Underground Storage Tanks on Indian Land
INDIAN UST	Underground Storage Tanks on Indian Land
INDIAN VCP	Voluntary Cleanup Priority Listing

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STATE AND LOCAL RECORDS

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health's Active Leaking Underground Storage Tank Log Listing.

An online review and analysis by ENVIROQUEST of the LUST list,
as provided by EDR, and dated 06/30/2008 has revealed that there is 1 LUST site
within approximately 0.5 miles of the target property.

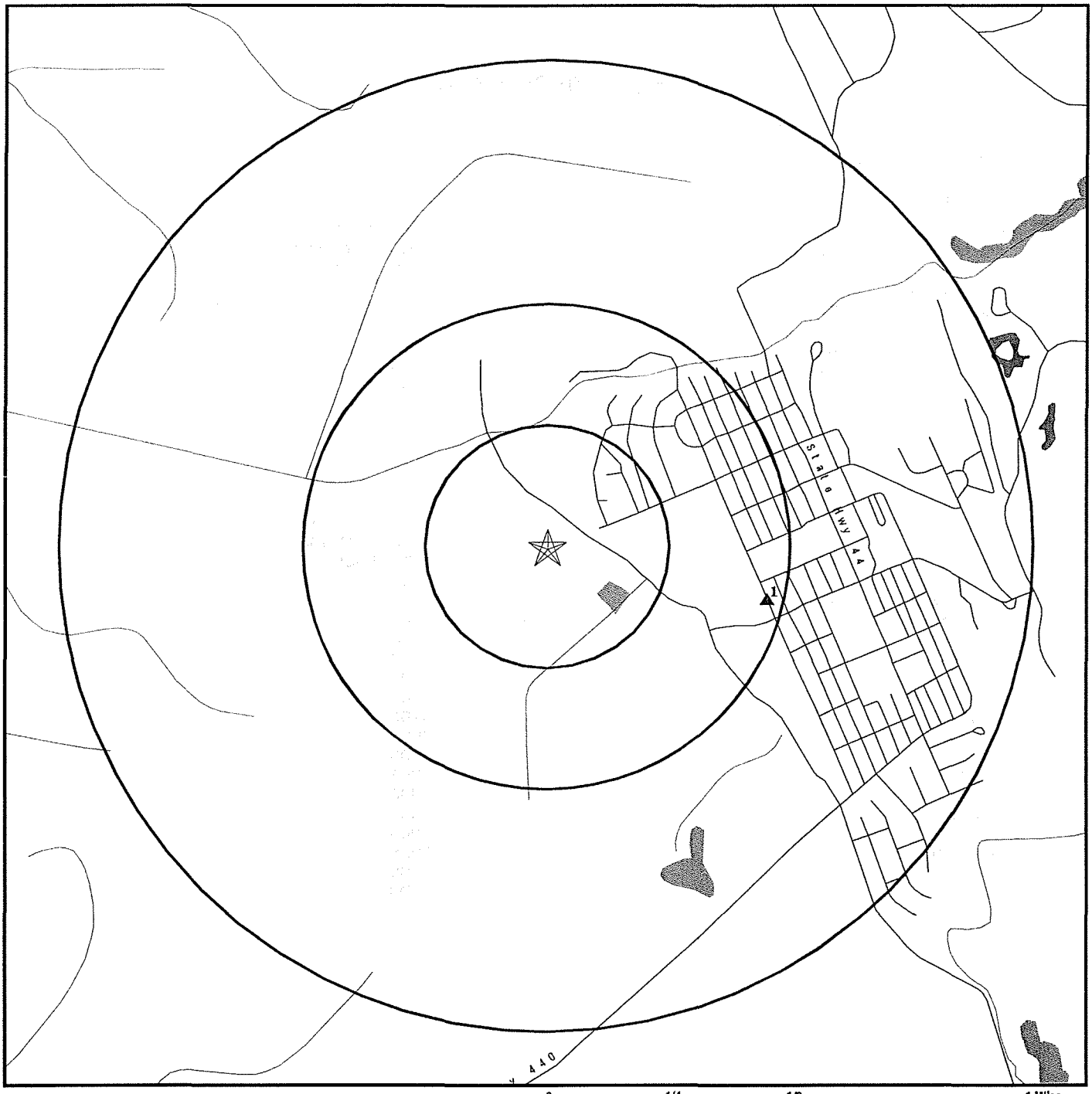
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OSHIRO ENTREPRISES, INC.	***850 FRASER AVE***	***ESE 1/4 - 1/2 (0.465 mi.)***	***1***	***6***
Facility Status: Site Cleanup Completed (NFA)				

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
LANAI ELEMENTARY AND HIGH	FTTS, HIST FTTS
CASTLE & COOKE FOODS-LANAI PLANTATION	FINDS, CERC-NFRAP, RCRA-TSDF, RCRA-NonGen
LANAI LANDFILL	SHWS
DOLE PLANTATION (PALAWAI & 5319 BASINS)	FINDS, INST CONTROL, SHWS
LANAI LDFL	CERC-NFRAP
LANAI DUMP SITE PALAWI BASIN	CERC-NFRAP
LANAI DDT STORAGE TANK AREA	CERC-NFRAP
LANAI DRUM SITE NO. 3	CERC-NFRAP
LANAI DRUM SITE NO. 2	CERC-NFRAP
LANAI DUMP SITE	CERC-NFRAP
LANAI DRUM SITE NO. 1	CERC-NFRAP
LANAI CHEMICAL MIXING AREA	CERC-NFRAP
LANAI LANDFILL	SWF/LF
FAA - LANAI	UST
LANAI CITY SERVICE	FINDS, RCRA-NonGen, UST
LANAI OIL COMPANY INCORPORATED	FINDS, RCRA-SQG
TRANSPORTATION SECURITY ADMINISTRATION	RCRA-CESQG
LANAI SANITARY LANDFILL	FINDS
DOLE PINEAPPLE PESTICIDE SITE, LANAI	FINDS
INDEPENDENCE OIL SPILL BETWEEN MOLOKAI & LANAI IN OCEAN	FINDS
LANAI CITY 2.0 MG STORAGE	FINDS
LANAI CITY LANDSCAPING	FINDS
LANAI LANDFILL	FINDS
LANAI OIL COMPANY INC	FINDS
LANAI WATER CO. INC	FINDS
LANAI WASTEWATER RECLAIMATION FACILITY	FINDS
LANAI YARD	FINDS
LANAI CITY	FINDS
LANAI RESIDENCE LOTS, PHASE 1	FINDS
LANAI AIRPORT (PMID LNY620123)	FINDS
LANAI CO., BASEYARD	FINDS
LANAI COMMUNITY HOSPITAL	FINDS
LANAI CENTRAL OFFICE	FINDS
FAA - LANAI	FINDS
LANAI HARBOR	SPILLS
LANAI OIL COMPANY INC	SPILLS
FOUR SEASONS RESORT LANAI	AIRS

OVERVIEW MAP - 2327818.2s

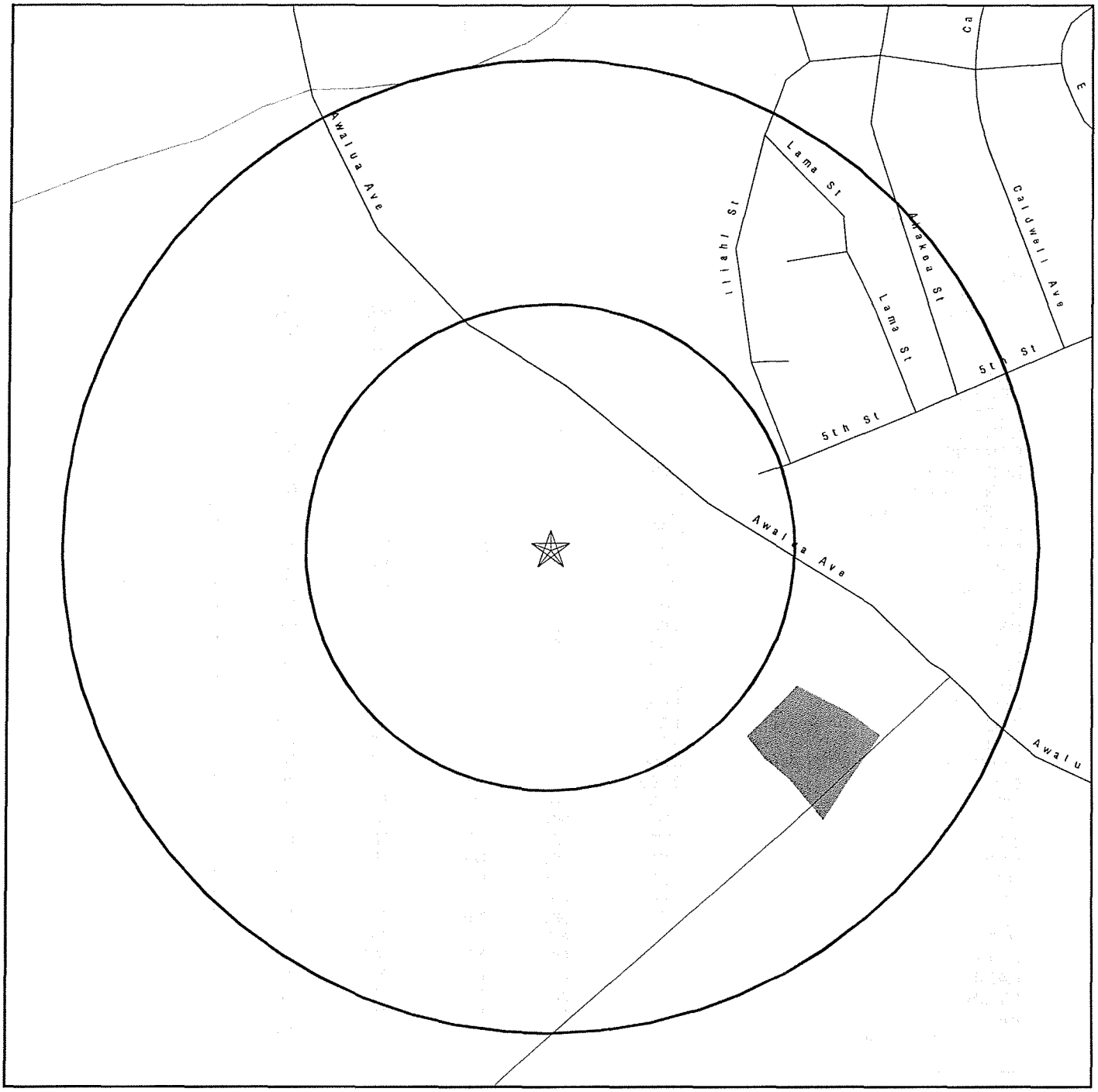


- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Lanai City ADDRESS: Awalua Ave Lanai City HI 96763 LAT/LONG: 20.8254 / 156.9278	CLIENT: Enviroquest CONTACT: Miles Nirei INQUIRY #: 2327818.2s DATE: October 08, 2008 2:27 pm

DETAIL MAP - 2327818.2s



0 1/16 1/8 1/4 Miles

- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Lanai City ADDRESS: Awalua Ave Lanai City HI 96763 LAT/LONG: 20.8254 / 156.9278	CLIENT: Enviroquest CONTACT: Miles Nirei INQUIRY #: 2327818.2s DATE: October 08, 2008 2:27 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
LIENS 2		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA-TSDF		0.500	0	0	0	NR	NR	0
RCRA-LQG		0.250	0	0	NR	NR	NR	0
RCRA-SQG		0.250	0	0	NR	NR	NR	0
RCRA-CESQG		0.250	0	0	NR	NR	NR	0
RCRA-NonGen		0.250	0	0	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
US CDL		TP	NR	NR	NR	NR	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
DEBRIS REGION 9		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
SCRD DRYCLEANERS		0.500	0	0	0	NR	NR	0
STATE AND LOCAL RECORDS								
SHWS		1.000	0	0	0	0	NR	0
SWF/LF		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	1	NR	NR	1
UST		0.250	0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SPILLS		TP	NR	NR	NR	NR	NR	0
INST CONTROL		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
BROWNFIELDS		0.500	0	0	0	NR	NR	0
AIRS		TP	NR	NR	NR	NR	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
INDIAN ODI		0.500	0	0	0	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
INDIAN VCP		0.500	0	0	0	NR	NR	0
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
ESE
1/4-1/2
0.465 mi.
2458 ft.

OSHIRO ENTREPRISES, INC.
850 FRASER AVE
LANAI CITY, HI 96763

LUST
UST

U003222163
N/A

Relative:
Higher

Actual:
1616 ft.

LUST:

Facility ID:	9-401388
Facility Status:	Site Cleanup Completed (NFA)
Facility Status Date:	19-Jan-01
Release ID:	900130
Project Officer:	Shunsheng Fu

UST:

Facility ID:	9-401388
Owner:	CASTLE & COOKE, INC
Owner Address:	P.O. BOX L
Ownder City,St,Zip:	Lanai City, 96763 96763
Tank ID:	R-1
Date Installed:	7/1/1952
Tank Status:	**Permanently Out of Use**
Date Closed:	6/24/1993
Tank Capacity:	2000
Substance:	Gasoline
Tank ID:	R-2
Date Installed:	7/1/1952
Tank Status:	**Permanently Out of Use**
Date Closed:	6/24/1993
Tank Capacity:	2000
Substance:	Gasoline

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LANAI	1008172758	LANAI SANITARY LANDFILL	EASTERLY SIDE HONOAPIILANI HWY	96763	FINDS
LANAI	S106818708	LANAI HARBOR	LANAI HARBOR		SPILLS
LANAI	1006820214	DOLE PINEAPPLE PESTICIDE SITE, LANAI	LANAI AVENUE	96763	FINDS
LANAI	1003879123	LANAI LDFL	LANAI	96763	CERC-NFRAP
LANAI	1000726484	LANAI LANDFILL	LANAI		SWF/LF
LANAI	1006820616	INDEPENDENCE OIL SPILL BETWEEN MOLOKAI & LANAI IN OCEAN	IN OCEAN	96763	FINDS
LANAI CITY	U001236618	FAA - LANAI	P.O. BOX 722	96763	UST
LANAI CITY	1009403160	LANAI CITY 2.0 MG STORAGE	1311 FRASER AVENUE	96763	FINDS
LANAI CITY	S108633277	FOUR SEASONS RESORT LANAI	1233 FRASER AVENUE		AIRS
LANAI CITY	1007283988	LANAI ELEMENTARY AND HIGH	FRASIER AVE	96763	FTTS, HIST FTTS
LANAI CITY	1008903015	LANAI CITY LANDSCAPING	3/10 MI FROM FREIGHT YARD ROAD	96763	FINDS
LANAI CITY	1011306747	LANAI LANDFILL	KAUMALAPAU HWY, 1827 KAUHU STREET,WAILUKU,96793	96763	FINDS
LANAI CITY	S108859757	LANAI OIL COMPANY INC	KAUMALAPAU HWY	96763	SPILLS
LANAI CITY	1007447440	TRANSPORTATION SECURITY ADMINISTRATION	KAUMALAPAU HWY	96763	RCRA-CESQG
LANAI CITY	1009802462	LANAI OIL COMPANY INC	KAUMALAPAU HWY	96763	FINDS
LANAI CITY	1006819455	LANAI WATER CO. INC	KAUMALAPAU HWY	96763	FINDS
LANAI CITY	1006819457	LANAI LANDFILL	KAUMALAPAU HWY	96763	SHWS
LANAI CITY	1006819456	LANAI WASTEWATER RECLAIMATION FACILITY	KAUMALAPAU HWY	96763	FINDS
LANAI CITY	1000146613	LANAI OIL COMPANY INCORPORATED	KAUMALAPAU HIGHWAY	96763	FINDS, RCRA-SQG
LANAI CITY	1006819443	LANAI YARD	KAUNALAPAU HWY	96763	FINDS
LANAI CITY	1008038490	LANAI CITY	LANAI CITY	96763	FINDS
LANAI CITY	1008002744	LANAI RESIDENCE LOTS, PHASE 1	LANAI AVE	96763	FINDS
LANAI CITY	1006841683	LANAI AIRPORT (PMID LNY620123)	LANAI AIRPORT	96763	FINDS
LANAI CITY	1006842639	LANAI CO., BASEYARD	949 LANAI AVE	96763	FINDS
LANAI CITY	1000146606	LANAI CITY SERVICE	1036 LANAI AVE	96763	FINDS, RCRA-NonGen, UST
LANAI CITY	1006820213	DOLE PLANTATION (PALAWAI & 5319 BASINS)	PALAWAI ST	96763	FINDS, INST CONTROL, SHWS
LANAI CITY	1000198027	CASTLE & COOKE FOODS-LANAI PLANTATION	PALAWAI & 5319 BASINS	96763	FINDS, CERC-NFRAP, RCRA-TSDF, RCRA-NonGen
LANAI CITY	1006843526	LANAI COMMUNITY HOSPITAL	697 SEVENTH AVE	96763	FINDS
LANAI CITY	1006819458	LANAI CENTRAL OFFICE	423 9TH ST	96763	FINDS
LANAI CITY	1006842723	FAA - LANAI	4 MI SW OF LANAI CITY	96763	FINDS
LANAI ISLAND	1003879697	LANAI DUMP SITE PALAWI BASIN	BOUNDED BY FIELDS NO. 5429, 5421, & 5413	96763	CERC-NFRAP
LANAI ISLAND	1003879692	LANAI DDT STORAGE TANK AREA	SE OF FIELD 5303/NORTHEND OF FIELD 5417	96763	CERC-NFRAP
LANAI ISLAND	1003879695	LANAI DRUM SITE NO. 3	NORTHWEST OF FIELD # 5319	96763	CERC-NFRAP
LANAI ISLAND	1003879694	LANAI DRUM SITE NO. 2	SOUTH OFF MIKI ROAD	96763	CERC-NFRAP
LANAI ISLAND	1003879696	LANAI DUMP SITE	SOUTEAST OF FIELD #5311	96763	CERC-NFRAP
LANAI ISLAND	1003879693	LANAI DRUM SITE NO. 1	SOUTHEND OF FIELD #53190	96763	CERC-NFRAP
LANAI ISLAND	1003879698	LANAI CHEMICAL MIXING AREA	SOUTHEND OF FIELD #5311 BASIN	96763	CERC-NFRAP

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 08/13/2008
Date Data Arrived at EDR: 08/27/2008
Date Made Active in Reports: 09/23/2008
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 07/28/2008
Next Scheduled EDR Contact: 10/27/2008
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/30/2008
Date Data Arrived at EDR: 05/06/2008
Date Made Active in Reports: 06/09/2008
Number of Days to Update: 34

Source: EPA
Telephone: N/A
Last EDR Contact: 08/27/2008
Next Scheduled EDR Contact: 10/27/2008
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 08/14/2008
Date Data Arrived at EDR: 08/27/2008
Date Made Active in Reports: 09/23/2008
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 07/28/2008
Next Scheduled EDR Contact: 10/27/2008
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/09/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 34

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/19/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/03/2007
Date Data Arrived at EDR: 12/06/2007
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 76

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/15/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 08/19/2008
Date Data Arrived at EDR: 08/29/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Varies

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/25/2008
Date Data Arrived at EDR: 06/30/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 56

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/02/2008
Next Scheduled EDR Contact: 12/01/2008
Data Release Frequency: Quarterly

RCRA-TSDF: RCRA - Transporters, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 08/20/2008
Date Data Arrived at EDR: 08/21/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 19

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/23/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Quarterly

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 08/20/2008
Date Data Arrived at EDR: 08/21/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 19

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/23/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 08/20/2008
Date Data Arrived at EDR: 08/21/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 19

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/23/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 08/20/2008
Date Data Arrived at EDR: 08/21/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 19

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/23/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Varies

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 08/20/2008
Date Data Arrived at EDR: 08/21/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 19

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/23/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/23/2008
Date Data Arrived at EDR: 07/29/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/29/2008
Next Scheduled EDR Contact: 12/29/2008
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/23/2008
Date Data Arrived at EDR: 07/29/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/30/2008
Next Scheduled EDR Contact: 09/29/2008
Data Release Frequency: Varies

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 01/23/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 54

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 07/25/2008
Next Scheduled EDR Contact: 10/20/2008
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 04/30/2008
Date Data Arrived at EDR: 07/15/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 41

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 07/15/2008
Next Scheduled EDR Contact: 10/13/2008
Data Release Frequency: Annually

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 05/14/2008
Date Data Arrived at EDR: 05/28/2008
Date Made Active in Reports: 08/08/2008
Number of Days to Update: 72

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/29/2008
Next Scheduled EDR Contact: 11/24/2008
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 12/28/2007
Number of Days to Update: 25

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/23/2008
Next Scheduled EDR Contact: 12/22/2008
Data Release Frequency: Quarterly

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 08/25/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 07/15/2008
Next Scheduled EDR Contact: 10/13/2008
Data Release Frequency: Semi-Annually

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 08/08/2008
Next Scheduled EDR Contact: 11/03/2008
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 09/05/2008
Date Made Active in Reports: 09/23/2008
Number of Days to Update: 18

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/05/2008
Next Scheduled EDR Contact: 12/29/2008
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 09/09/2008
Next Scheduled EDR Contact: 12/08/2008
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 04/25/2008
Date Data Arrived at EDR: 06/12/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 74

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/21/2008
Next Scheduled EDR Contact: 10/20/2008
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 06/18/2008
Date Data Arrived at EDR: 07/11/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 45

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/29/2008
Next Scheduled EDR Contact: 12/29/2008
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 07/13/2007
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/15/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 03/25/2008
Date Data Arrived at EDR: 04/17/2008
Date Made Active in Reports: 05/15/2008
Number of Days to Update: 28

Source: EPA, Region 9
Telephone: 415-972-3336
Last EDR Contact: 09/22/2008
Next Scheduled EDR Contact: 12/22/2008
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/28/2008
Date Data Arrived at EDR: 06/25/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 61

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/23/2008
Next Scheduled EDR Contact: 12/22/2008
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 09/19/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 08/11/2008
Next Scheduled EDR Contact: 10/13/2008
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/12/2008
Date Data Arrived at EDR: 07/18/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 38

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 09/15/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 07/12/2008
Date Data Arrived at EDR: 07/18/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 38

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 09/15/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/14/2008
Next Scheduled EDR Contact: 10/13/2008
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/31/2008
Date Data Arrived at EDR: 08/13/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/14/2008
Next Scheduled EDR Contact: 10/13/2008
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/04/2007
Date Data Arrived at EDR: 02/07/2008
Date Made Active in Reports: 03/17/2008
Number of Days to Update: 39

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 09/18/2008
Next Scheduled EDR Contact: 11/03/2008
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/08/2008
Date Data Arrived at EDR: 08/05/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 20

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/29/2008
Next Scheduled EDR Contact: 12/29/2008
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/29/2008
Date Data Arrived at EDR: 07/31/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/31/2008
Next Scheduled EDR Contact: 10/27/2008
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/09/2008
Date Made Active in Reports: 08/25/2008
Number of Days to Update: 47

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/29/2008
Next Scheduled EDR Contact: 12/29/2008
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/13/2007
Number of Days to Update: 38

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/12/2008
Next Scheduled EDR Contact: 12/08/2008
Data Release Frequency: Biennially

SCRD DRYCLEANERS: State Coalition for Redediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 09/08/2008
Date Data Arrived at EDR: 09/10/2008
Date Made Active in Reports: 09/23/2008
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/25/2008
Next Scheduled EDR Contact: 11/10/2008
Data Release Frequency: Varies

STATE AND LOCAL RECORDS

SHWS: Sites List

Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

Date of Government Version: 04/04/2008
Date Data Arrived at EDR: 06/18/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 34

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 09/19/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SWF/LF: Permitted Landfills in the State of Hawaii

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/19/2004
Date Data Arrived at EDR: 05/20/2004
Date Made Active in Reports: 06/22/2004
Number of Days to Update: 33

Source: Department of Health
Telephone: 808-586-4245
Last EDR Contact: 08/04/2008
Next Scheduled EDR Contact: 10/20/2008
Data Release Frequency: Varies

LUST: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 06/30/2008
Date Data Arrived at EDR: 07/02/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 20

Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 09/23/2008
Next Scheduled EDR Contact: 12/22/2008
Data Release Frequency: Semi-Annually

UST: Underground Storage Tank Database

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 06/30/2008
Date Data Arrived at EDR: 07/02/2008
Date Made Active in Reports: 07/24/2008
Number of Days to Update: 22

Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 09/23/2008
Next Scheduled EDR Contact: 12/22/2008
Data Release Frequency: Semi-Annually

SPILLS: Release Notifications

Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

Date of Government Version: 04/04/2008
Date Data Arrived at EDR: 06/18/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 34

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 09/19/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Varies

INST CONTROL: Sites with Institutional Controls

Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 04/04/2008
Date Data Arrived at EDR: 06/18/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 34

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 09/19/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Varies

VCP: Voluntary Response Program Sites

Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 04/04/2008
Date Data Arrived at EDR: 06/18/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 34

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 09/19/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Varies

DRYCLEANERS: Permitted Drycleaner Facility Listing
A listing of permitted drycleaner facilities in the state.

Date of Government Version: 03/28/2008
Date Data Arrived at EDR: 03/28/2008
Date Made Active in Reports: 04/24/2008
Number of Days to Update: 27

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 07/28/2008
Next Scheduled EDR Contact: 10/27/2008
Data Release Frequency: Varies

BROWNFIELDS: Brownfields Sites
With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 04/04/2008
Date Data Arrived at EDR: 06/18/2008
Date Made Active in Reports: 07/22/2008
Number of Days to Update: 34

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 09/19/2008
Next Scheduled EDR Contact: 12/15/2008
Data Release Frequency: Varies

AIRS: List of Permitted Facilities
A listing of permitted facilities in the state.

Date of Government Version: 03/28/2008
Date Data Arrived at EDR: 03/28/2008
Date Made Active in Reports: 04/24/2008
Number of Days to Update: 27

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 07/28/2008
Next Scheduled EDR Contact: 10/27/2008
Data Release Frequency: Varies

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 08/08/2008
Next Scheduled EDR Contact: 11/03/2008
Data Release Frequency: Semi-Annually

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/25/2008
Next Scheduled EDR Contact: 11/24/2008
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 08/22/2008
Date Data Arrived at EDR: 08/22/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 18

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 07/11/2008
Date Data Arrived at EDR: 07/11/2008
Date Made Active in Reports: 08/08/2008
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/21/2008
Date Data Arrived at EDR: 09/04/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 5

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/17/2008
Date Data Arrived at EDR: 03/27/2008
Date Made Active in Reports: 05/06/2008
Number of Days to Update: 40

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/05/2008
Date Data Arrived at EDR: 09/05/2008
Date Made Active in Reports: 09/23/2008
Number of Days to Update: 18

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 03/17/2008
Date Data Arrived at EDR: 03/27/2008
Date Made Active in Reports: 05/06/2008
Number of Days to Update: 40

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 03/12/2008
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 6

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
A listing of underground storage tank locations on Indian Land.

Date of Government Version: 03/12/2008
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 03/20/2008
Number of Days to Update: 6

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 03/17/2008
Date Data Arrived at EDR: 03/27/2008
Date Made Active in Reports: 05/06/2008
Number of Days to Update: 40

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 12/21/2007
Date Data Arrived at EDR: 12/21/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 34

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 09/05/2008
Date Data Arrived at EDR: 09/05/2008
Date Made Active in Reports: 09/23/2008
Number of Days to Update: 18

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/14/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 21

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 08/21/2008
Date Data Arrived at EDR: 09/04/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 5

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 07/11/2008
Date Data Arrived at EDR: 07/11/2008
Date Made Active in Reports: 08/08/2008
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
No description is available for this data

Date of Government Version: 08/22/2008
Date Data Arrived at EDR: 08/22/2008
Date Made Active in Reports: 09/09/2008
Number of Days to Update: 18

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/18/2008
Next Scheduled EDR Contact: 11/17/2008
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 04/02/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 07/21/2008
Next Scheduled EDR Contact: 10/20/2008
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/21/2008
Next Scheduled EDR Contact: 10/20/2008
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

LANAI CITY
AWALUA AVE
LANAI CITY, HI 96763

TARGET PROPERTY COORDINATES

Latitude (North):	20.82538 - 20° 49' 31.4"
Longitude (West):	156.92781 - 156° 55' 40.1"
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	715648.4
UTM Y (Meters):	2304072.8
Elevation:	1562 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	20156-G8 ISLAND OF LANAI OE NW, HI
Most Recent Revision:	Not reported

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

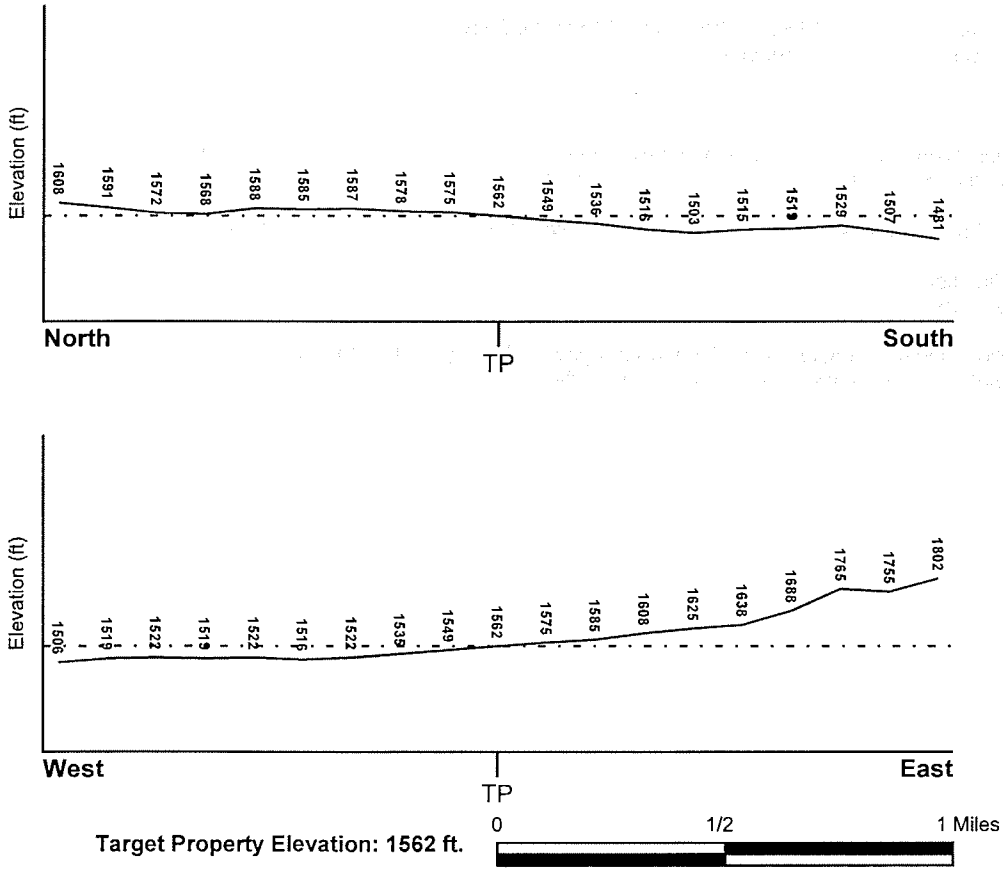
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
MAUI, HI	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

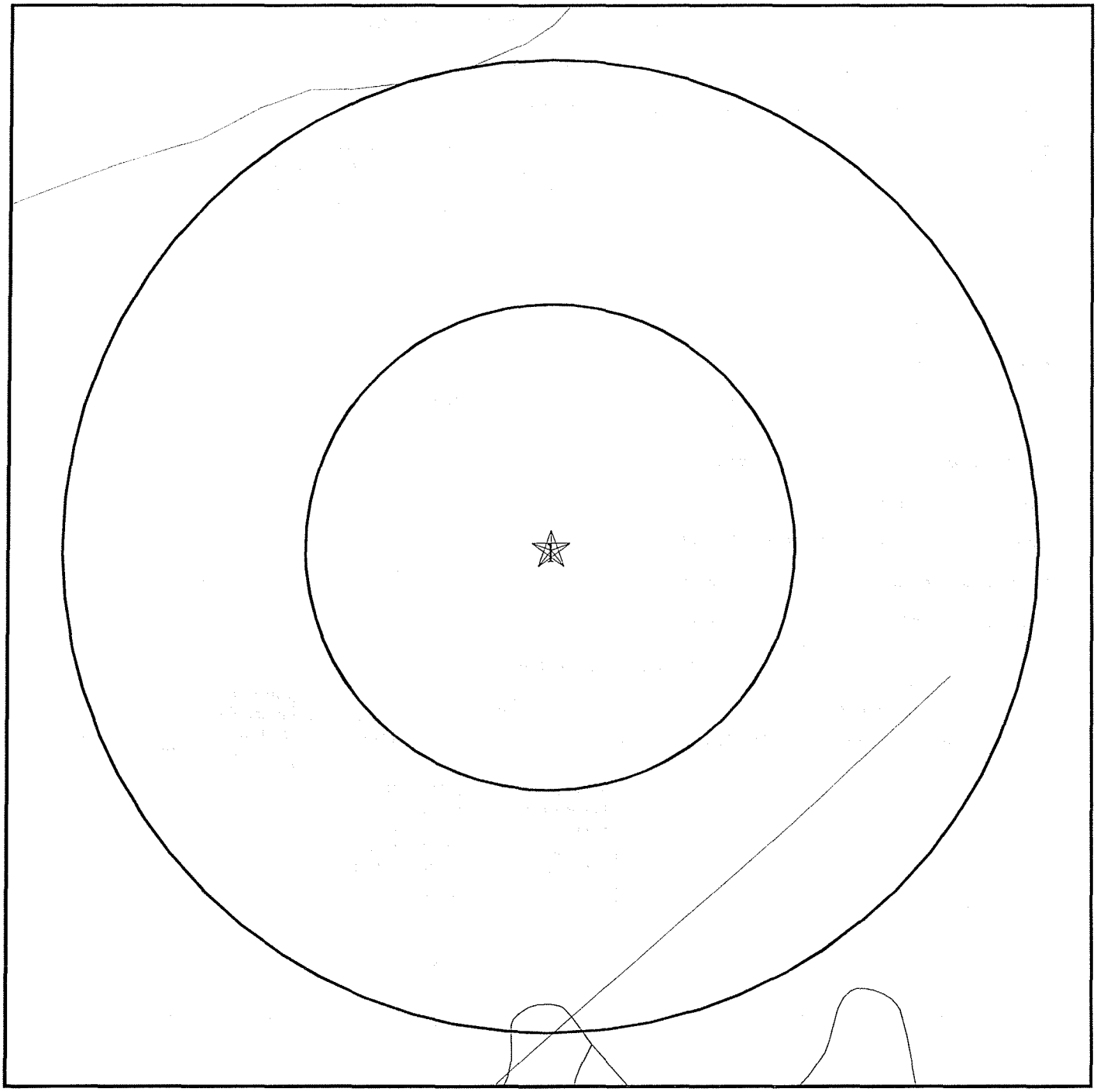
Era:	-
System:	-
Series:	-
Code:	N/A *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 2327818.2s



★ Target Property
SSURGO Soil
Water

SITE NAME: Lanai City	CLIENT: Enviroquest
ADDRESS: Awalua Ave	CONTACT: Miles Nirei
Lanai City HI 96763	INQUIRY #: 2327818.2s
LAT/LONG: 20.8254 / 156.9278	DATE: October 08, 2008 2:28 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Waihuna

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 183 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	1 inches	5 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1 Min: 0.01	Max: 7.3 Min: 5.6
2	53 inches	64 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1 Min: 0.01	Max: 7.3 Min: 5.6
3	0 inches	1 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1 Min: 0.01	Max: 7.3 Min: 5.6
4	11 inches	18 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1 Min: 0.01	Max: 7.3 Min: 5.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
5	5 inches	11 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1 Min: 0.01	Max: 7.3 Min: 5.6
6	40 inches	53 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1 Min: 0.01	Max: 7.3 Min: 5.6
7	25 inches	40 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1 Min: 0.01	Max: 7.3 Min: 5.6

Soil Map ID: 2

Soil Component Name: Lahaina

Soil Surface Texture: silty clay

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14 Min: 4.23	Max: 7.3 Min: 5.6
2	14 inches	31 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14 Min: 4.23	Max: 7.3 Min: 5.6
3	31 inches	59 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14 Min: 4.23	Max: 7.3 Min: 5.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	HI0000218	1/2 - 1 Mile ENE

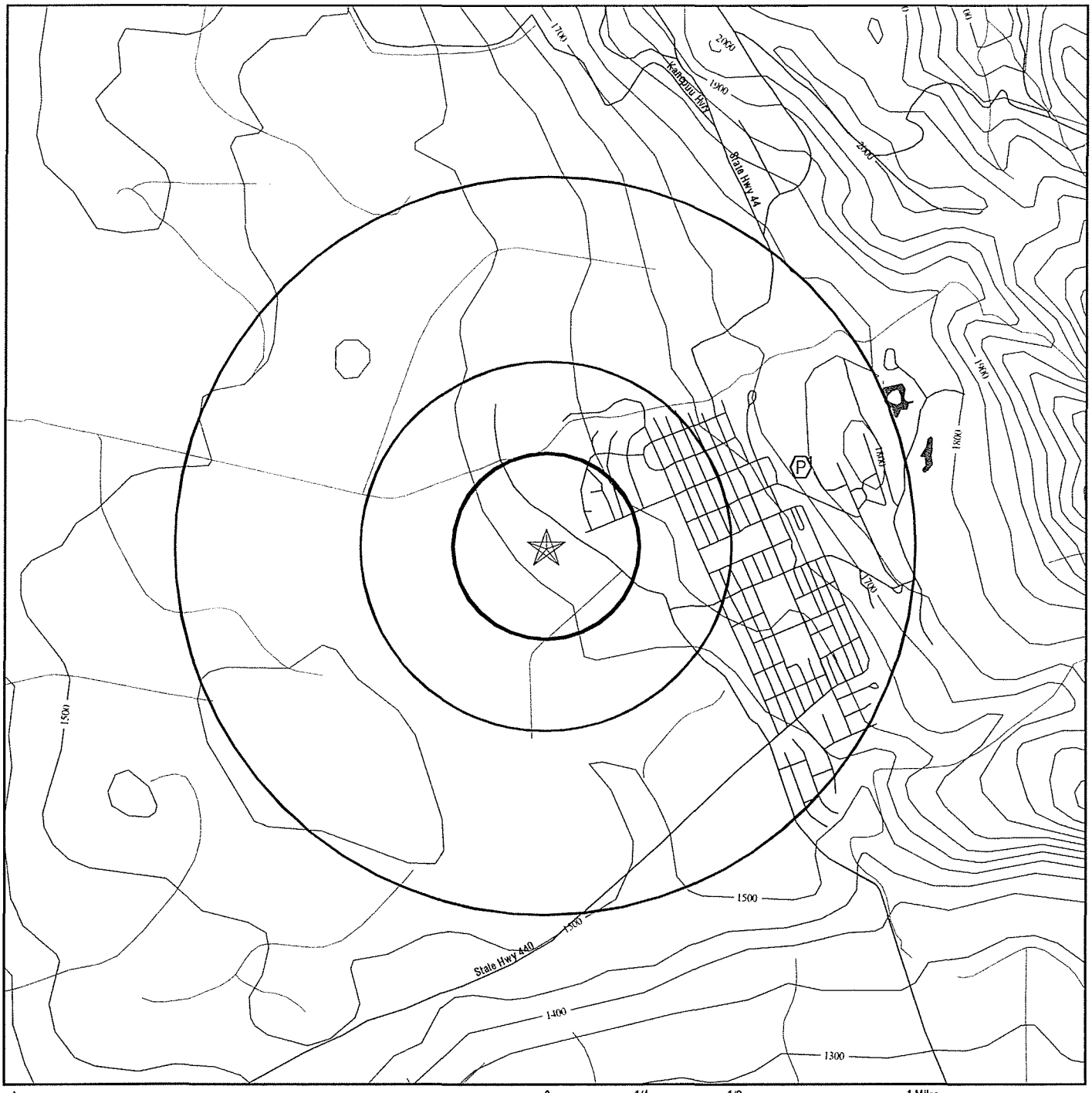
Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 2327818.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location

SITE NAME: Lanai City	CLIENT: Enviroquest
ADDRESS: Awalua Ave Lanai City HI 96763	CONTACT: Miles Nirei INQUIRY #: 2327818.2s
LAT/LONG: 20.8254 / 156.9278	DATE: October 08, 2008 2:28 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
1		
ENE	**FRDS PWS**	**HI0000218**
1/2 - 1 Mile		
Higher		

PWS ID:	HI0000218	PWS Status:	Not Reported
Date Initiated:	Not Reported	Date Deactivated:	Not Reported
PWS Name:	DWS HONOKOHAU HONOKOHAU, MAUI, HI 96761		
Addressee / Facility:	Laboratory MS. CARI CERIZO DEPARTMENT OF WATER SUPPLY 614 PALAPALA DRIVE KAHULUI, HI 96732		
Facility Latitude:	20 49 54	Facility Longitude:	156 55 12
City Served:	HONOKOHAU		
City Served:	HONOKAHAU		
Treatment Class:	Treated	Population:	54

PWS currently has or had major violation(s) or enforcement: YES

VIOLATIONS INFORMATION:

Violation ID:	9400123	Source ID:	002	PWS Phone:	Not Reported
Vio. beginning Date:	04/01/94	Vio. end Date:	04/30/94	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Repeat Minor (TCR)				
Contaminant:	COLIFORM (TCR)				
Vio. Awareness Date:	051094				

Violation ID:	9402006	Source ID:	002	PWS Phone:	Not Reported
Vio. beginning Date:	10/01/93	Vio. end Date:	10/31/93	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Treatment Technique (SWTR)				
Contaminant:	Not Reported				
Vio. Awareness Date:	Not Reported				

Violation ID:	9402007	Source ID:	002	PWS Phone:	Not Reported
Vio. beginning Date:	11/01/93	Vio. end Date:	11/30/93	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Treatment Technique (SWTR)				
Contaminant:	Not Reported				
Vio. Awareness Date:	Not Reported				

Violation ID:	9402008	Source ID:	002	PWS Phone:	Not Reported
Vio. beginning Date:	12/01/93	Vio. end Date:	12/31/93	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Treatment Technique (SWTR)				
Contaminant:	Not Reported				
Vio. Awareness Date:	Not Reported				

Violation ID:	9402009	Source ID:	002	PWS Phone:	Not Reported
Vio. beginning Date:	11/01/93	Vio. end Date:	11/30/93	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)				
Contaminant:	Not Reported				
Vio. Awareness Date:	Not Reported				

ENFORCEMENT INFORMATION:

System Name:	DWS HONOKOHAU		
Violation Type:	Monitoring, Repeat Minor (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-04-01 - 1994-04-30		
Violation ID:	9400123		
Enforcement Date:	1994-05-24	Enf. Action:	State Violation/Reminder Notice

System Name:	DWS HONOKOHAU		
Violation Type:	Monitoring, Repeat Minor (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-04-01 - 1994-04-30		
Violation ID:	9400123		
Enforcement Date:	1994-05-24	Enf. Action:	State Public Notif Requested

System Name:	DWS HONOKOHAU		
Violation Type:	Monitoring, Repeat Minor (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-04-01 - 1994-04-30		
Violation ID:	9400123		
Enforcement Date:	1994-05-18	Enf. Action:	State Public Notif Issued

System Name:	DWS HONOKOHAU		
Violation Type:	MCL, Average		
Contaminant:	Turbidity		
Compliance Period:	1994-07-01 - 1994-07-31		
Violation ID:	9400124		
Enforcement Date:	1994-08-24	Enf. Action:	State Violation/Reminder Notice

System Name:	DWS HONOKOHAU		
Violation Type:	MCL, Average		
Contaminant:	Turbidity		
Compliance Period:	1994-07-01 - 1994-07-31		
Violation ID:	9400124		
Enforcement Date:	1994-08-24	Enf. Action:	State Public Notif Requested

System Name:	DWS HONOKOHAU		
Violation Type:	MCL, Average		
Contaminant:	Turbidity		
Compliance Period:	1994-07-01 - 1994-07-31		
Violation ID:	9400124		
Enforcement Date:	1994-08-24	Enf. Action:	State Public Notif Issued

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

ENFORCEMENT INFORMATION:

System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-01-01 - 1994-01-31		
Violation ID:	9402010		
Enforcement Date:	1994-05-09	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-01-01 - 1994-01-31		
Violation ID:	9402010		
Enforcement Date:	1994-05-09	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-02-01 - 1994-02-28		
Violation ID:	9402011		
Enforcement Date:	1994-05-09	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-02-01 - 1994-02-28		
Violation ID:	9402011		
Enforcement Date:	1994-05-09	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-03-01 - 1994-03-31		
Violation ID:	9402012		
Enforcement Date:	1994-05-09	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-03-01 - 1994-03-31		
Violation ID:	9402012		
Enforcement Date:	1994-05-09	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-04-01 - 1994-04-30		
Violation ID:	9402013		
Enforcement Date:	1994-07-26	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-04-01 - 1994-04-30		
Violation ID:	9402013		
Enforcement Date:	1994-07-26	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-04-01 - 1994-04-30		
Violation ID:	9402013		
Enforcement Date:	1994-07-31	Enf. Action:	State Public Notif Issued

ENFORCEMENT INFORMATION:

System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-05-01 - 1994-05-31		
Violation ID:	9402014		
Enforcement Date:	1994-07-26	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-05-01 - 1994-05-31		
Violation ID:	9402014		
Enforcement Date:	1994-07-26	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-05-01 - 1994-05-31		
Violation ID:	9402014		
Enforcement Date:	1994-07-31	Enf. Action:	State Public Notif Issued
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-06-01 - 1994-06-30		
Violation ID:	9402015		
Enforcement Date:	1994-07-26	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-06-01 - 1994-06-30		
Violation ID:	9402015		
Enforcement Date:	1994-07-26	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-06-01 - 1994-06-30		
Violation ID:	9402015		
Enforcement Date:	1994-07-31	Enf. Action:	State Public Notif Issued
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-07-01 - 1994-07-31		
Violation ID:	9402016		
Enforcement Date:	1994-10-18	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-07-01 - 1994-07-31		
Violation ID:	9402016		
Enforcement Date:	1994-10-18	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-07-01 - 1994-07-31		
Violation ID:	9402016		
Enforcement Date:	1994-10-31	Enf. Action:	State Public Notif Issued

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

ENFORCEMENT INFORMATION:

System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-08-01 - 1994-08-31		
Violation ID:	9402017		
Enforcement Date:	1994-10-18	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-08-01 - 1994-08-31		
Violation ID:	9402017		
Enforcement Date:	1994-10-18	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-08-01 - 1994-08-31		
Violation ID:	9402017		
Enforcement Date:	1994-10-31	Enf. Action:	State Public Notif Issued
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-09-01 - 1994-09-30		
Violation ID:	9402018		
Enforcement Date:	1994-10-18	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-09-01 - 1994-09-30		
Violation ID:	9402018		
Enforcement Date:	1994-10-18	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-09-01 - 1994-09-30		
Violation ID:	9402018		
Enforcement Date:	1994-10-31	Enf. Action:	State Public Notif Issued
System Name:	DWS HONOKOHAU		
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)		
Contaminant:	SWTR		
Compliance Period:	1994-08-01 - 1994-08-31		
Violation ID:	9402019		
Enforcement Date:	1994-10-18	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)		
Contaminant:	SWTR		
Compliance Period:	1994-08-01 - 1994-08-31		
Violation ID:	9402019		
Enforcement Date:	1994-10-18	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)		
Contaminant:	SWTR		
Compliance Period:	1994-08-01 - 1994-08-31		
Violation ID:	9402019		
Enforcement Date:	1994-10-31	Enf. Action:	State Public Notif Issued

ENFORCEMENT INFORMATION:

System Name:	DWS HONOKOHAU		
Violation Type:	MCL, Acute (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9500125		
Enforcement Date:	1994-11-25	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	MCL, Acute (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9500125		
Enforcement Date:	1994-11-25	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	MCL, Acute (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9500125		
Enforcement Date:	1994-12-11	Enf. Action:	State Public Notif Issued
System Name:	DWS HONOKOHAU		
Violation Type:	MCL, Monthly (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9500126		
Enforcement Date:	1994-11-25	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	MCL, Monthly (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9500126		
Enforcement Date:	1994-11-25	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	MCL, Monthly (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9500126		
Enforcement Date:	1994-12-11	Enf. Action:	State Public Notif Issued
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-10-01 - 1994-10-31		
Violation ID:	9502020		
Enforcement Date:	1995-01-18	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-10-01 - 1994-10-31		
Violation ID:	9502020		
Enforcement Date:	1995-01-18	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-10-01 - 1994-10-31		
Violation ID:	9502020		
Enforcement Date:	1995-01-31	Enf. Action:	State Public Notif Issued

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ENFORCEMENT INFORMATION:

System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9502021		
Enforcement Date:	1995-01-18	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9502021		
Enforcement Date:	1995-01-18	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9502021		
Enforcement Date:	1995-01-31	Enf. Action:	State Public Notif Issued
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-12-01 - 1994-12-31		
Violation ID:	9502022		
Enforcement Date:	1995-01-18	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-12-01 - 1994-12-31		
Violation ID:	9502022		
Enforcement Date:	1995-01-18	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1994-12-01 - 1994-12-31		
Violation ID:	9502022		
Enforcement Date:	1995-01-31	Enf. Action:	State Public Notif Issued
System Name:	DWS HONOKOHAU		
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)		
Contaminant:	SWTR		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9502023		
Enforcement Date:	1995-01-18	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)		
Contaminant:	SWTR		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9502023		
Enforcement Date:	1995-01-18	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Monitoring, Routine/Repeat (SWTR-Filter)		
Contaminant:	SWTR		
Compliance Period:	1994-11-01 - 1994-11-30		
Violation ID:	9502023		
Enforcement Date:	1995-01-31	Enf. Action:	State Public Notif Issued

ENFORCEMENT INFORMATION:

System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-01-01 - 1995-01-31		
Violation ID:	9502024		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-02-01 - 1995-02-28		
Violation ID:	9502025		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-03-01 - 1995-03-31		
Violation ID:	9502026		
Enforcement Date:	1995-04-20	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-03-01 - 1995-03-31		
Violation ID:	9502026		
Enforcement Date:	1995-04-20	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-03-01 - 1995-03-31		
Violation ID:	9502026		
Enforcement Date:	1995-04-30	Enf. Action:	State Public Notif Issued
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-04-01 - 1995-04-30		
Violation ID:	9502027		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-05-01 - 1995-05-31		
Violation ID:	9502028		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-06-01 - 1995-06-30		
Violation ID:	9502029		
Enforcement Date:	1995-07-14	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-06-01 - 1995-06-30		
Violation ID:	9502029		
Enforcement Date:	1995-07-14	Enf. Action:	State Public Notif Requested

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

ENFORCEMENT INFORMATION:

System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-06-01 - 1995-06-30		
Violation ID:	9502029		
Enforcement Date:	1995-07-28	Enf. Action:	State Public Notif Issued
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-07-01 - 1995-07-31		
Violation ID:	9502030		
Enforcement Date:	1995-10-17	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-07-01 - 1995-07-31		
Violation ID:	9502030		
Enforcement Date:	1995-10-17	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-08-01 - 1995-08-31		
Violation ID:	9502031		
Enforcement Date:	1995-10-17	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-08-01 - 1995-08-31		
Violation ID:	9502031		
Enforcement Date:	1995-10-17	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-09-01 - 1995-09-30		
Violation ID:	9502032		
Enforcement Date:	1995-10-17	Enf. Action:	State Violation/Reminder Notice
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-09-01 - 1995-09-30		
Violation ID:	9502032		
Enforcement Date:	1995-10-17	Enf. Action:	State Public Notif Requested
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-10-01 - 1995-10-31		
Violation ID:	9602033		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-11-01 - 1995-11-30		
Violation ID:	9602034		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported

ENFORCEMENT INFORMATION:

System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1995-12-01 - 1995-12-31		
Violation ID:	9602035		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1998-01-01 - 1998-01-31		
Violation ID:	98002060		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1998-02-01 - 1998-02-28		
Violation ID:	98002061		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1998-03-01 - 1998-03-31		
Violation ID:	98002062		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	DWS HONOKOHAU		
Violation Type:	Treatment Technique (SWTR)		
Contaminant:	SWTR		
Compliance Period:	1998-04-01 - 1998-04-30		
Violation ID:	98002063		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Well Index Database
Source: Department of Land and Natural Resources
Telephone: 808-587-0214
CWRM maintains a Well Index Database to track specific information pertaining to the construction and installation of production wells in Hawaii

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

Lanai City
Awalua Ave
Lanai City, HI 96763

Inquiry Number: 2327818.4
September 26, 2008

The EDR Historical Topographic Map Report

EDR® Environmental Data Resources Inc

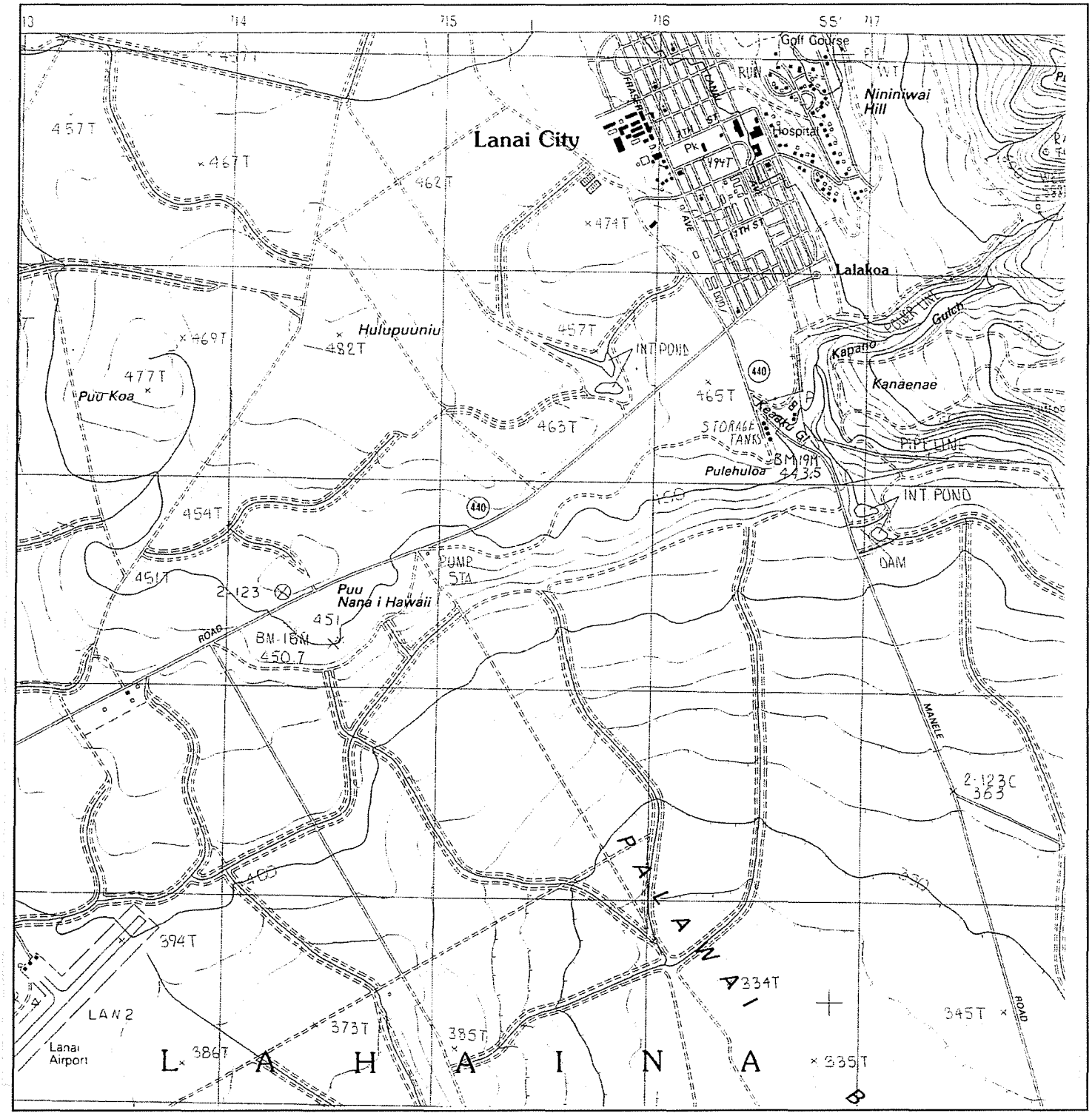
440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

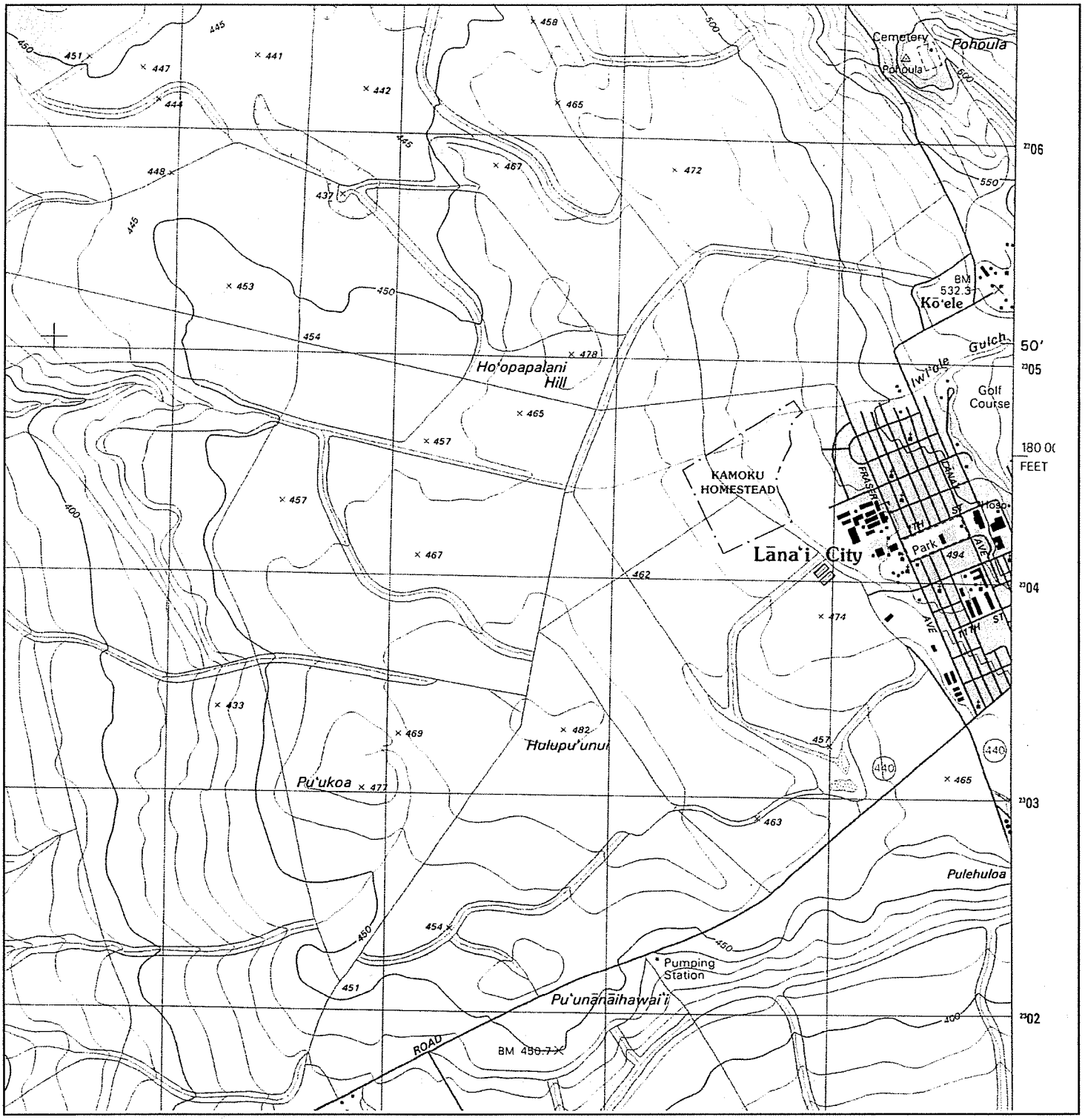
Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Historical Topographic Map



N	TARGET QUAD NAME: Lanai South, HI MAP YEAR: 1984 SERIES: 7.5 SCALE: 1:25,000	SITE NAME: Lanai City ADDRESS: Awalua Ave Lanai City, HI 96763 LAT/LONG: 20.8254 / 156.928	CLIENT: Enviroquest CONTACT: Miles Nirei INQUIRY#: 2327818.4 RESEARCH DATE: 09/26/2008

Historical Topographic Map



N	TARGET QUAD NAME: Lanai City, HI MAP YEAR: 1992 SERIES: 7.5 SCALE: 1:24,000	SITE NAME: Lanai City ADDRESS: Awalua Ave Lanai City, HI 96763 LAT/LONG: 20.8254 / 156.928	CLIENT: Enviroquest CONTACT: Miles Nirei INQUIRY#: 2327818.4 RESEARCH DATE: 09/26/2008

Lanai City
Awalua Ave
Lanai City, HI 96763

Inquiry Number: 2327818.3
September 26, 2008

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

9/26/08

Site Name:
Lanai City
Awalua Ave
Lanai City, HI 96763

EDR Inquiry # 2327818.3

Client Name:
Enviroquest
98-029 Hekaha Street
Aiea, HI 96701

Contact: Miles Nirei

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Enviroquest were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Lanai City
Address: Awalua Ave
City, State, Zip: Lanai City, HI 96763
Cross Street:
P.O. # NA
Project: NA
Certification # 89E8-4886-9818

Sanborn® Library search results
Certification # 89E8-4886-9818

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

Total Maps: 0

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APPENDIX 2

Photograph

Facing east over the property.

Cross streets north of property.

Single family housing east of the property.

Dirt road through the property.

Looking south from the property.

Typical shrubs, brush and grass on the property.
Note surveyors ribbon.

EQI
EnviroQuest INC.

PHOTOGRAPHIC LOG
65 Acre Site in Lanai City
Lanai City, Lanai, Hawaii

West over the property from the single family residential lot.

Northwest over the property from the single family residential lot.

Typical of vegetation found throughout the property.

Typical scrub found throughout the property.

Various vehicle trails throughout the property.

Facing east towards Lanai City, single family residential structures.

EQI EnviroQuest INC.

PHOTOGRAPHIC LOG
65 Acre Site in Lanai City
Lanai City, Lanai, Hawaii

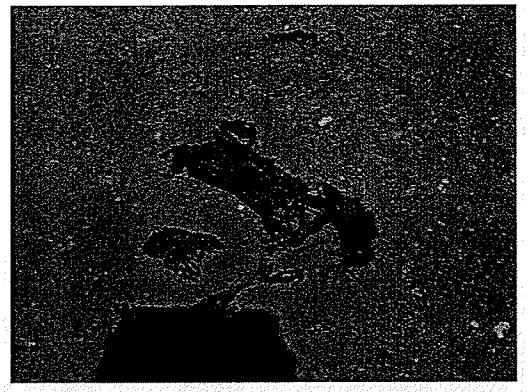
Vegetation variation. Notice clay color topsoil.

Animal or foot trail throughout the property.

Piles of branches and plant debris.

Black plastic found throughout the property and all around Lanai. Plastic used in the pineapple fields.

Black plastic found throughout the property.



Black plastic.

EQI EnviroQuest INC.

PHOTOGRAPHIC LOG
65 Acre Site in Lanai City
Lanai City, Lanai, Hawaii

Pile of debris located east of property on Awalua Ave.

Metal recycle pile south of the property. Run by Tri Isle Inc.

Debris pile from Tri Isle Inc. operation south of the property.

Tri Isle Inc operational building. On Awalua Ave south of the property.

APPENDIX D.

Archaeological Inventory Survey

An Archaeological Inventory Survey Report for the Proposed Lāna'i City Affordable Housing Project Kamoku Ahpua'a, Lāhainā District, Lāna'i Island

TMK (2) 4-9-002:058 and portions of (2) 4-9-014:001, 009, 011

FINAL

Prepared for
Munekiyo & Hiraga, Inc.
County of Maui

Prepared by
Tanya L. Lee-Greig, M.A.
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai'i, Inc.
Wailuku, Hawai'i
(Job Code: KAMOKU 5)

November 2009

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November 16, 2009

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LOG NO: 2009.4362
DOC NO: 0911PC28
Archaeology

SUBJECT: **Chapter 6E-8 Historic Preservation Review – REVISED Archaeological Inventory Survey for the Proposed Lana'i City Affordable Housing Project**
Kamoku Ahupua'a, Lahaina (Lana'i) District, Island of Lana'i
TMK: (2) 4-9-002:058 and portions of (2) 4-9-014:001, 009, 011

Thank you for the opportunity to review this revised report, which our staff received in PDF format on November 13 (Lee-Greig and Hammatt 2009): *An Archaeological Inventory Survey Report for the Proposed Lana'i City Affordable Housing Project*...Cultural Surveys Hawai'i, Inc.

The report was first reviewed by SHPD staff on October 9 of 2009 (SHPD LOG NO: 2009.2990; DOC NO: 0910PC16), resulting in three requested revisions.

The survey area as described in the report consists of the entirety of TMK (2) 4-9-002:058 (73 acres/29.2 hectare) and a 20 acre (8 hectare) access corridor comprised of portions of TMK (2) 4-9-014:001, 009 and 011. Fieldwork, undertaken on April 22 and 23 and May 6 of 2009, was comprised of a 100% pedestrian survey and included the excavation of five 10 meter long x 1 meter wide backhoe trenches. One new site, now on record as SIHP #50-40-98-6649 [post-Contact period culvert headwall] was identified. Two additional post-Contact period structures, a portion of the former Ko'ele School Complex, identified outside the project area corridor were noted, but not assessed for site significance or included in mitigation recommendations.

The background section acceptably establishes the *ahupua'a* settlement pattern and predicts the likely site pattern in the project area, with historical information provided to summarize pre and post-Contact period land use, and a summary of previous archaeological work conducted to provide a baseline for current work.

The report now contains the required information as specified in HAR §13-276-5 regarding report documentation of inventory level field work completed in general and is acceptable.

We agree that SIHP #50-50-98-6649 is significant under Criterion D of the Hawai'i and National Registers of Historic Places for its ability to yield information important to history or prehistory and enough such information was collected during the survey that no further historic preservation work specific to the site itself is necessary.

We also agree that precautionary archaeological monitoring during all ground altering disturbance associated with the proposed project is warranted, due to the limited visibility of the ground surface and limited exploratory subsurface testing undertaken during the field survey. Please note that the recommendation for monitoring will require the submission of a formal monitoring plan for SHPD review and acceptance in order for mitigation recommendations for the proposed project to be satisfied.

Now that the archaeological inventory survey report has been accepted pursuant to HAR §13-276, please send one hardcopy, clearly marked **FINAL** *(the revised electronic copy does not need to be sent again)* to the attention of "**SHPD Library**" at the Kapolei SHPD office.

Aloha,

Nancy A. McMahon

Nancy McMahon, Deputy SHPO/State Archaeologist
State Historic Preservation Division

c: Jeff Hunt, Director, Dept. of Planning, FAX (808) 270-7634
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Management Summary

Reference	An Archaeological Inventory Survey Report for the Proposed Lāna'i City Affordable Housing Project Kamoku Ahpua'a, Lāhainā District, Lāna'i Island TMK: (2) 4-9-002:058 and portions of (2) 4-9-014:001, 009, and 011 (Lee-Greig and Hammatt 2009)
Date	November 2009 (FINAL)
Project Number (s)	CSH Job Code: KAMOKU 5
Investigation Permit Number	CSH completed the inventory survey fieldwork under state archaeological permit No. 08-14 issued by the State Historic Preservation Division (SHPD), per Hawai'i Administrative Rules (HAR) Chapter 13-13-282.
Project Location	Lāna'i Island, Lāhainā District, Kamoku Ahupua'a, TMK (2) 4-9-002:058 and portions of (2) 4-9-014:001, 009, and 011, as depicted on the South Lāna'i USGS 7.5-minute topographic quadrangle (1998)
Land Jurisdiction	Government: County of Maui Private: Castle & Cooke Resorts, LLC.
Agencies	Department of Land and Natural Resources/State Historic Preservation Division (DLNR/SHPD)
Project Description	The County of Maui is proposing to convert 73 acres of former pineapple lands into an affordable housing project that will preliminarily consist of approximately 12 acres of multi-family dwellings and 29 acres of single-family dwellings. In addition to the residential area, eight acres are proposed for public-quasi-public use, while three acres will be used for park development and a drainage retention basin. Access to the proposed development is anticipated to extend off of both Fifth Street and Ninth Street through currently undeveloped property.
Project Acreage (Hectares)	**Affordable Housing and Multi-Purpose Parcel**: 73 acres (approximately 29.5 hectares) **Access Corridors**: The acreage for the Fifth Street access route is included in the calculation above. Access off of Ninth Street consists of an approximate 250-foot wide corridor extending from the southwest terminus of Ninth Street that tapers to a 150-foot wide corridor along the proposed Lāna'i High and Elementary School Expansion Parcel. In all, the acreage encompassed by the Ninth Street access corridor consists of approximately 20 acres (approximately 8 hectares).
Area of Potential Effect (APE) and Survey Acreage	Based on available information, the proposed residential development and corridor construction will not impose adverse visual, auditory or other environmental impact to any historic properties, including standing architecture, located on lands adjacent to the project area. Accordingly, the project's APE extends no further than the proposed 73-acre footprint of the affordable housing development and 20-acre footprint of the access corridor. The entire approximate 93-acre (37-hectares) APE was surveyed as a part of this investigation.

<table>
<tr><td>Historic Preservation Regulatory Context</td><td>At the request of Munekiyo & Hiraga, Inc. on behalf of Maui County, CSH undertook this archaeological inventory survey to comply with the historic preservation review process (Hawai'i Revised Statutes [HRS] Chapter 6E-42 and HAR Chapter 13-284) for the proposed project. This inventory survey investigation was designed and carried out to fulfill the state requirements for archaeological inventory survey per HAR Chapter 13-13-276.</td></tr>
<tr><td>Fieldwork Effort</td><td>The pedestrian survey of the 93 acres was accomplished on April 22nd and 23rd, 2009, while the subsurface testing of the Ninth Street Corridor was completed on May 6th, 2009. The archaeological pedestrian survey crew consisted of Hallett Hammatt, Ph.D.; Tanya Lee-Greig, M.A.; Michael Willman B.A.; and archaeological assistants Kaulana Kaho'ohalahala and Warren Osako of Lāna'i. Subsurface testing was accomplished by Hallett Hammatt, Ph.D.; Tanya Lee-Greig, M.A.; and archaeological assistants Warren Osako, Kaulana Kaho'ohalahala, and Kawena Maly of Lāna'i. A total of two and a half working days were required to complete the fieldwork for the archaeological inventory survey of this parcel.</td></tr>
<tr><td>Number of Historic Properties Identified</td><td>One historic property, SIHP 50-40-98-6649, was identified within the project APE. Additionally, two historic properties, CSH-2 and CSH-3, were identified outside and directly adjacent to the current project area.</td></tr>
<tr><td>Historic Properties Recommended Eligible to the Hawai'i Register of Historic Places (Hawai'i Register)</td><td><table><tr><th>SIHP (50-40-98-)</th><th>Site Type</th><th>Site Function</th><th>Age</th><th>Significance Criteria</th></tr><tr><td>6649</td><td>Culvert headwall</td><td>Water control</td><td>Historic</td><td>D</td></tr></table>Because CSH-2 and CSH-3 are located outside of the current project area, they are not evaluated for significance in this report.</td></tr>
<tr><td>Historic Properties Recommended Ineligible to the Hawai'i Register</td><td>None</td></tr>
</table>

Effect Recommendation	Under Hawai'i state historic preservation legislation, the only two possible effect determinations for a given project under historic preservation review are "no historic properties affected" and "effect, with proposed mitigation commitments" (HAR Chapter 13-284-7). In the circumstance of the current project area, one historic property was documented within the current project area that cannot be avoided by the proposed residential and roadway development. This historic property is considered significant for informational content. The current inventory survey investigation has adequately recorded the information available from this property, through location documentation, written descriptions, and photographs. Because the information that gives this historic property significance has already been recorded and additional historic preservation mitigation would not add to the body of information concerning this historic property, CSH recommends a project specific effect determination of "no historic properties affected." This is believed to be appropriate, despite the potential removal of this feature by the proposed project as the information that makes this historic property significant has been adequately recorded.
Mitigation Recommendation	Based on the above evaluation of effect, CSH recommends no further historic preservation work for SIHP 50-40-98-6649 (see also Section 7.2 Mitigation Recommendations). While the pedestrian survey did not identify any significant surface historic properties during the course of this study and limited subsurface testing of the eastern portion of the Ninth Street access corridor resulted in negative findings, it should be noted that poor ground visibility throughout the majority of the project area made the identification of low density surface artifact scatters difficult to recognize and pre-empted an intensive subsurface testing program. Community consultation has revealed that formal indigenous artifacts, although out of context, have been found within former pineapple fields following tilling after harvest (see also Section 5) thus presenting some possibility for encountering historically significant materials both on the surface and in a subsurface context. Therefore, it is recommended that precautionary archaeological monitoring of the initial grubbing and grading activities associated with the proposed project be implemented as a means to thoroughly evaluate the current project area for historic properties. Continuation and/or termination of the monitoring program following early preparation of the project site should be re-evaluated with SHPD based on the initial monitoring findings.

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Section 1 Introduction

1.1 Project Background

The County of Maui is proposing to convert 73-acres of former pineapple lands into an affordable housing project that will preliminarily consist of approximately 14.46 acres of multi-family dwellings (173 housing units) and 27.5 acres of single family dwellings (239 housing units). In addition to the residential units, the master plan calls for a 4.94 acre area set aside for public-quasi-public use, as well as two (2) park sites consisting of 2.83 acres and 2.08 acres and a 4.0 acre drainage detention pond. Access to the proposed development is anticipated to extend off of both Fifth Street and from Ninth Street through currently undeveloped property.

At the request of Munekiyo & Hiraga, Inc., on behalf of the County of Maui, Cultural Surveys Hawai'i, Inc. (CSH) conducted an archaeological inventory survey of an approximate 73 acres that includes both the parcel intended for affordable housing development and the Fifth Street extension from the Department of Hawaiian Home Lands subdivision in to the proposed project site, hereafter referred to as the "affordable housing parcel". In addition to the affordable housing parcel, an approximate 20-acre corridor extending off of Ninth Street was surveyed as an additional access route.

Based on available information, the proposed affordable housing development and intended access routes will not impose adverse visual, auditory or other environmental impact to any significant historic properties, including standing architecture, located in lands adjacent to the project area. Accordingly, the area of potential effect (APE) for this study extends no further than the proposed 73-acre footprint of the affordable housing parcel and 20-acre footprint of the Ninth Street access corridor. The entire approximate 93-acre (37-hectares) APE, hereafter referred to as the current project area was surveyed as a part of this investigation.

The current project area is located in the *ahupua'a* of Kamoku, Lāhainā District, Lāna'i Island (TMK [2] 4-9-002:058 and portions of [2] 4-9-014:001, 009, 011) (Figure 1, Figure 2, and Figure 3). More specifically, the affordable housing parcel is located to the southwest of the 50-acre Department of Hawaiian Home Lands (DHHL) parcel and surrounded by undeveloped, fallow pineapple fields while the Ninth Street access corridor extends off of the southern end of Ninth Street and across fallow pineapple fields.

The archaeological fieldwork for this study was conducted under state archaeological permit number 08-14 issued by Hawai'i State Historic Preservation Division (SHPD), per Hawai'i Administrative Rules (HAR) Chapter 13-282. This archaeological inventory survey report was prepared to fulfill the proposed project's historic preservation requirements in accordance with Hawai'i Administrative Rules (HAR) Chapters 13-275-5(A) and 13-276 and details the survey methods of the archaeological investigation and subsequent results.

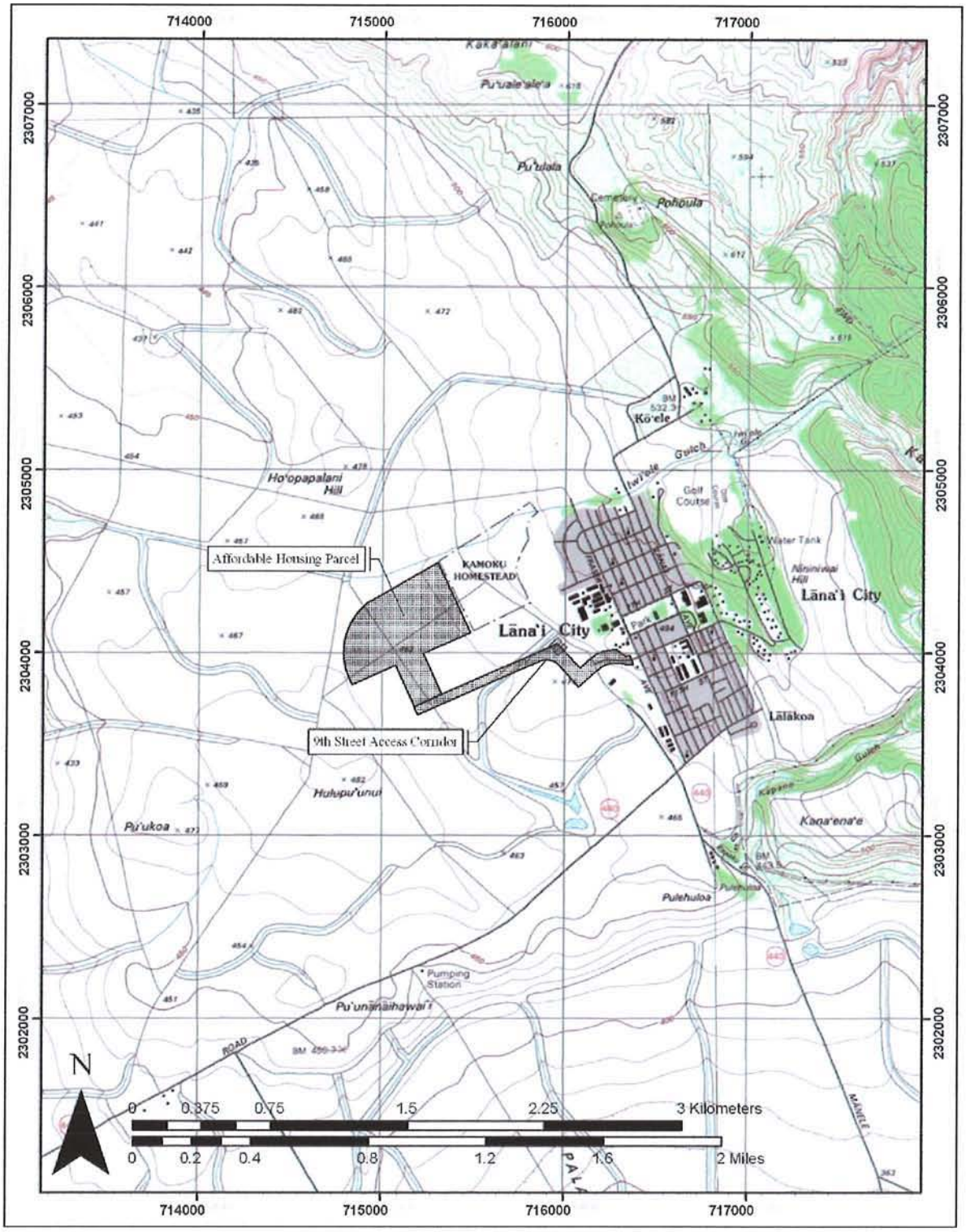

Figure 1. A portion of the 1998 South Lāna'i United States Geological Survey (U.S.G.S.) 7.5 minute topographic quadrangle showing the location of the current project area (shaded in black)

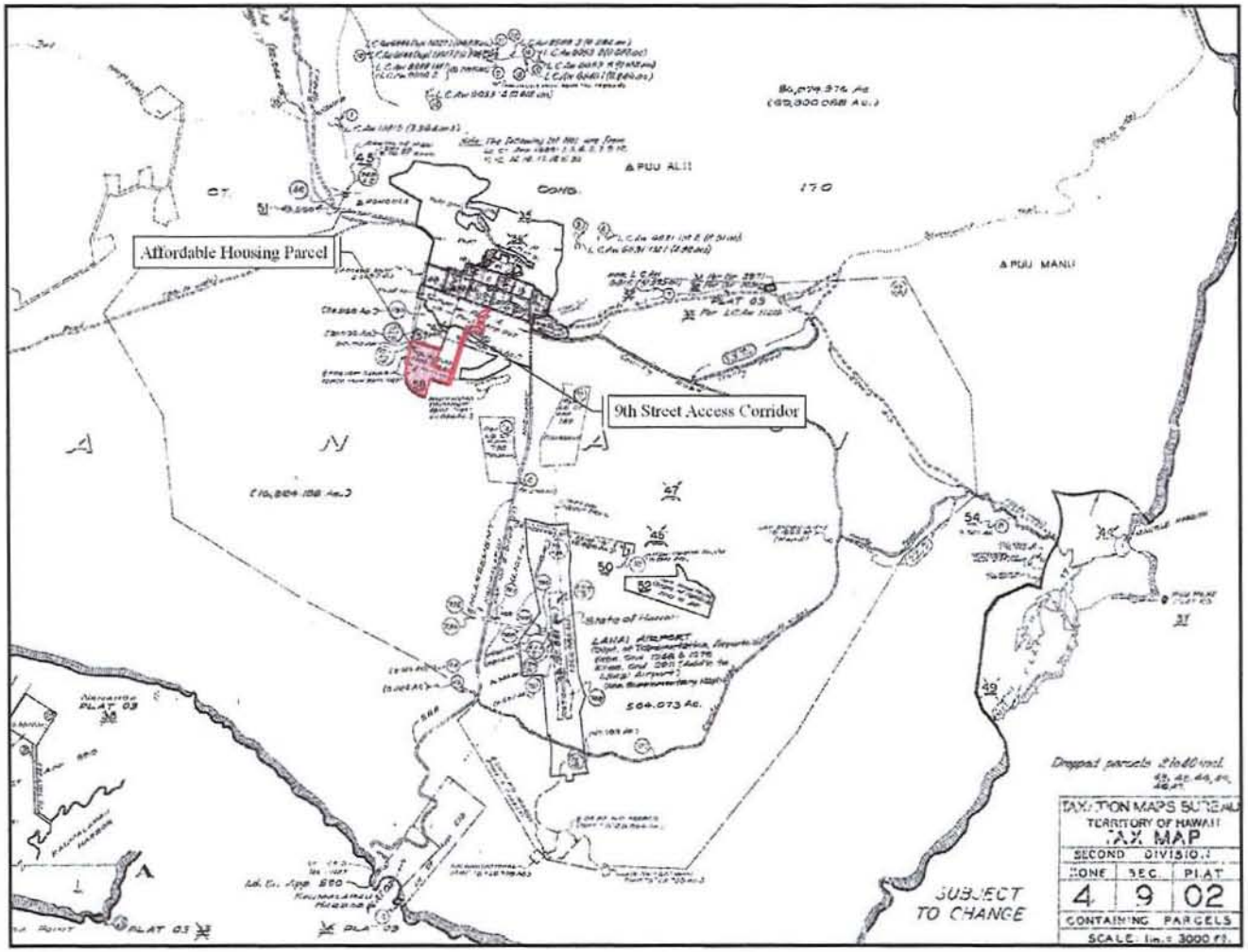

Figure 2. A portion of TMK 4-09-02 showing location of project area (shaded in red).

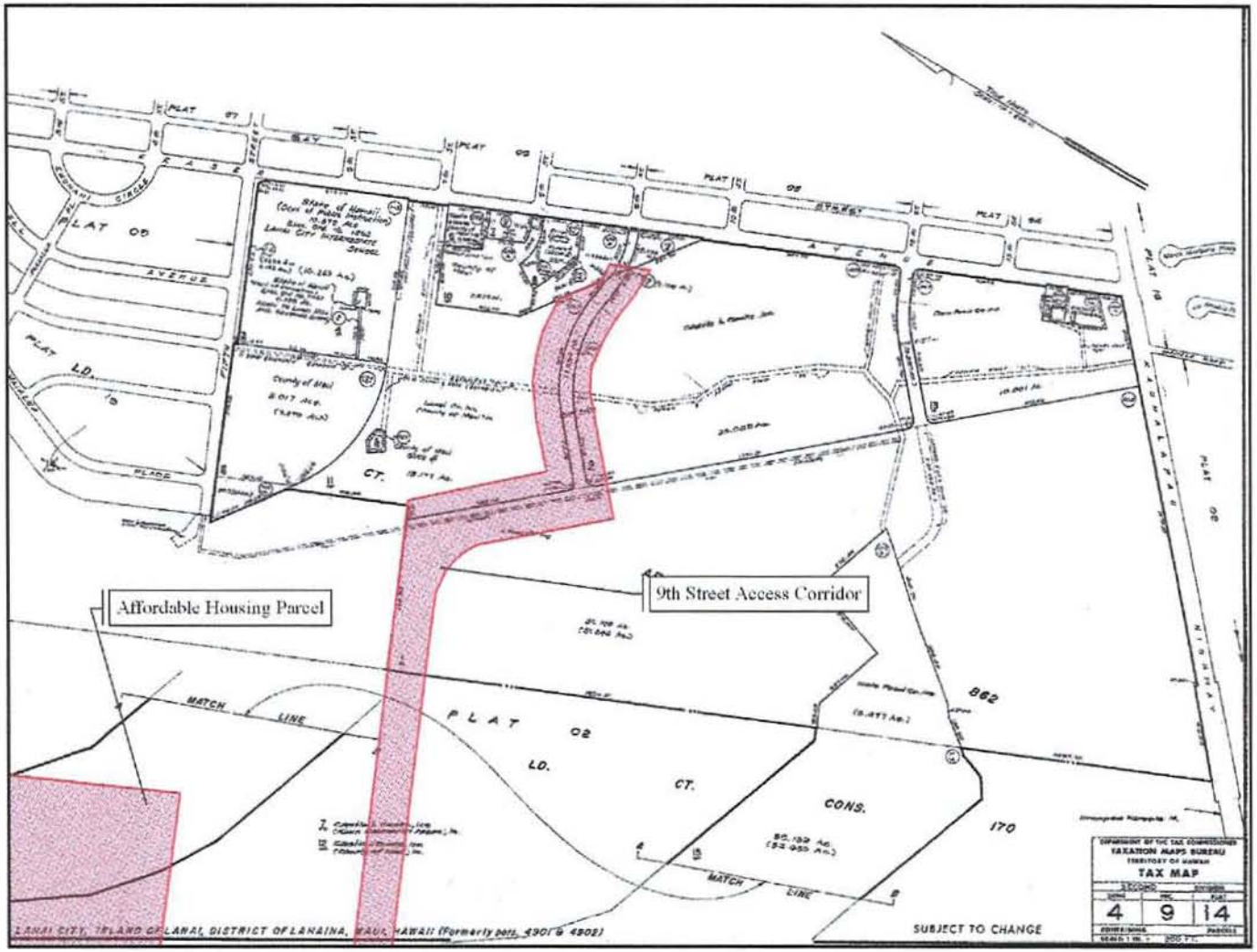

Figure 3. A portion of TMK 4-09-14 showing location of project area (shaded in red).

1.2 Scope of Work

The following archaeological inventory survey scope of work was proposed to satisfy state and county historic preservation review requirements:

1. A complete ground survey of the entire project area for the purpose of historic property identification and documentation. Any identified historic properties would be located, described, and mapped with evaluation of function, interrelationships, and significance. Documentation would include photographs and scale drawings of selected historic properties. Any identified historic properties would be assigned State Inventory of Historic Properties numbers by the State (SIHP) and located using a GPS and/or GIS Software;
2. Subsurface testing, if necessary, would be focused on locating and evaluating subsurface deposits, such as buried cultural layers and/or deposits with significant paleo-environmental data, which could not be located by surface pedestrian inspection. If appropriate samples from these excavations were found, they would be analyzed for chronological and paleo-environmental information;
3. Research on historic and archaeological background, including search of historic maps, written records, and Land Commission Award documents. This research would focus on the specific area with general background on the traditional Hawaiian land divisions, *ahupua'a* and *moku*, emphasizing settlement patterns;
4. Preparation of a survey report that would include the following:
    a. A topographic map of the survey area showing all historic properties;
    b. Description of all identified historic properties with selected photographs, scale drawings, and discussions of function;
    c. Historical and archaeological background sections summarizing pre-contact and historic era land use as they relate to the project area's historic properties;
    d. A summary of historic property categories and their significance in an archaeological and historic context; and
    e. Recommendations based on all information generated that will specify what steps should be taken to mitigate impact of development on the project area's significant historic properties - such as data recovery (excavation) and preservation of specific areas.

1.3 Environmental Setting

1.3.1 Natural Environment

The project area is situated within the upper plateau region of Lāna'i island, just to the west of Lāna'i City. Elevation ranges between 460 to 480 feet above mean sea level (amsl) where the temperature ranges between 60° and 80° F. The sediments of the area are of the Waihuna and Lahaina soil series. These series consists of well drained and moderately well drained soils on alluvial fans and in depressions in the former and upland environments in the latter. More specifically, the sediments within the project area are Waihuna clay (WoA), Lahaina silty clay

with three to seven percent slopes (LaB), Lahaina silty clay with zero to three percent slopes (LaA), and Lahaina silty clay with seven to 15 percent slopes (LaC) (Figure 4). WoA soils, the most extensive soil in the series and within the current project area is represented by a surface layer that is about 34 cm thick and underlain by relatively soft, weathered pebbles and stones. This soil is strongly acid in the surface layer due to pineapple cultivation (Foote et al. 1972:129).

LaB soils are found on smooth uplands where cobblestones are common on the surface, permeability is moderate, runoff is slow, and the erosion hazard is slight (Foote et al. 1972:78). A representative profile shows that the first 15 inches consist of a reddish-brown, silty clay followed by a 45 inch thick subsoil of dusky-red and dark reddish brown subangular block silty clay and silty clay loam overlying soft, weathered basic igneous rock (Foote et al. 1972:78). LaB soils were used primarily for sugarcane and pineapple with small acreage used for truck crops, pasture, and home sites (Foote et al. 1972:79).

While the soil profiles of LaA soils and LaC soils are similar to that of LaB soils (Foote et al. 1972:79), LaA soils have a slow runoff with a no more than slight erosion hazard (Foote et al. 1972:79) and LaC soils have a medium runoff rate with a moderate erosion hazard (Foote et al. 1972:79). Both soil types were primarily used for sugarcane and pineapple with small acreages used for truck crops, pasture, and wildlife habitat (Foote et al. 1972:79).

With the entire island lying in the rain shadow of Mauna E'eka (the West Maui Mountains) on Maui and winds across Lāna'i Island dominated by consistent northeasterly trades, the overall environment of the island as a whole is one of drier leeward environment. The average annual rainfall in the area ranges from 25-35 inches (699-800 mm) with the heaviest rains in January and the lightest in June. This growing environment currently supports a vegetation community where the dominant plant species within the previously cultivated pineapple field consist of a dense growth of Lantana (*Lantana camara*) and low-growing or "scrubby" Christmas Berry (*Schinus terebinthifolius*) trees. Also present within the project area are small stands of Ironwood Trees (*Casuarina equisetifolia*) Guinea grass, Balloon plant (*Asclepias physocarpus*), 'Uhaloa (*Waltheria indica uhaloa*), Milk Thistle (*Silybum marianum*), and sourgrass (*Digitaria inslularis*).

1.3.2 Built Environment

Overall development surrounding the project area is nominal as the majority of the study area is surrounded by fallow pineapple fields. The primary feature of the built environment near the affordable housing parcel consists entirely of the Hawaiian Homestead turn-key lots to the northeast and Lanai High and Elementary School to the east, while the upper portion of the Ninth Street Access route borders Lāna'i City off of Fraser Avenue and extends into former pineapple fields to the south and west.

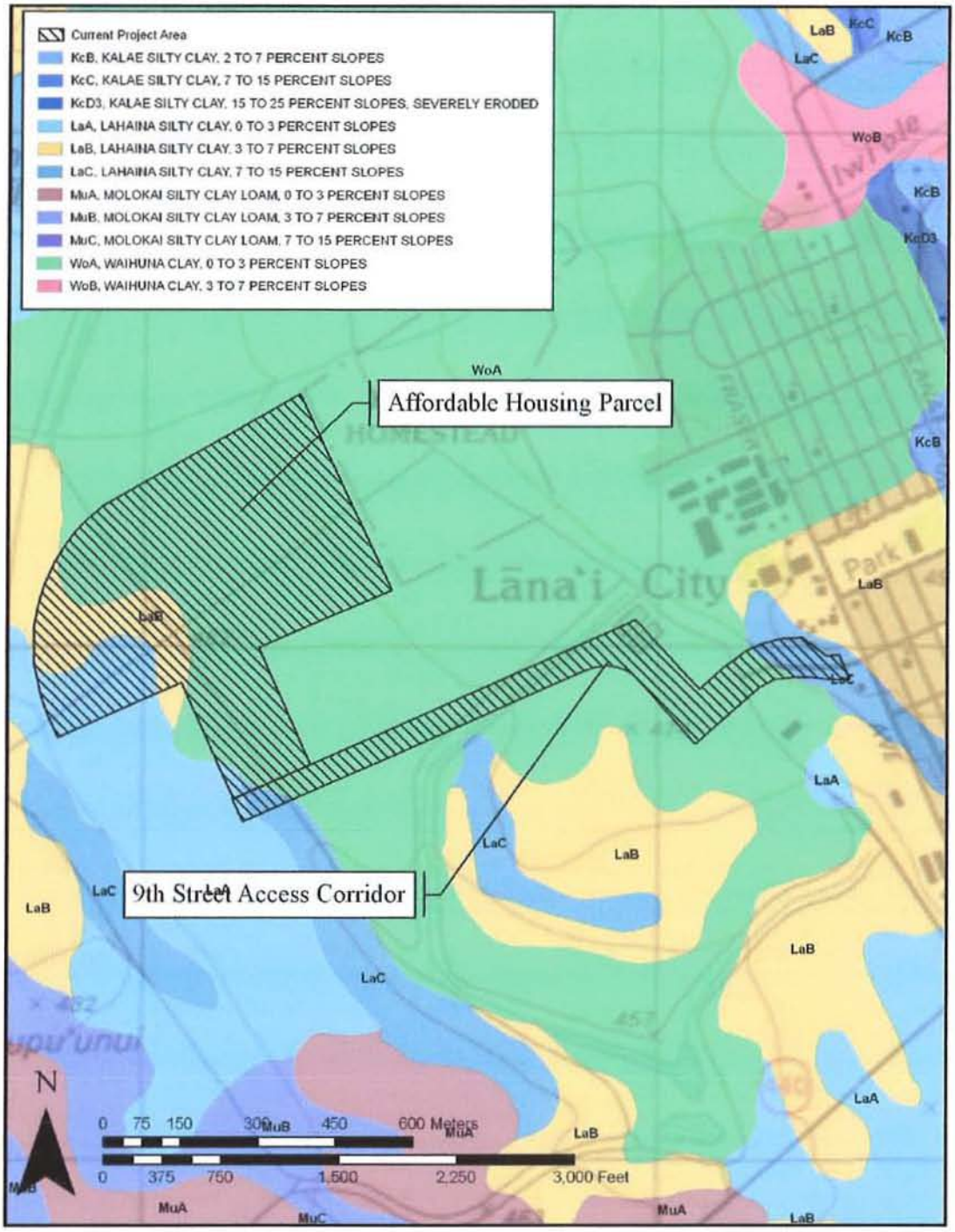

Figure 4. A portion of the Soil Survey Map for the Island of Lāna'i showing the location of the current project area (delineated in black diagonal cross hatching) (U.S. Department of Agriculture 2001).

Section 2 Methods

2.1 Field Methods

2.1.1 Pedestrian Survey

A complete ground survey of the entire project area was undertaken for the purpose of historic property identification and documentation. The following methods were used to complete the pedestrian inspection of the current project area:

1. The boundary of the project area was identified and maintained during the course of the pedestrian survey using two Garmin GPSMap 60CSx handheld GPS units, one on either side of the survey line, with the project area data uploaded and visible on the map screen;
2. The pedestrian inspection of the study area was accomplished through systematic sweeps of the affordable housing parcel (TMK [2] 4-9-002:058) with five archaeologists spaced at 15-20 meter intervals, and of the Ninth Street access corridor (portions of TMKs [2] 4-9-014:001, 009, and 01) with four archaeologists spaced at 15-20 meter intervals;
3. Pedestrian sweeps of the affordable housing parcel were oriented northeast to southwest (240° - 60°) while sweeps of the access corridor followed the corridor configuration.
4. Identified historic properties were located with the Garmin GPSMap 60CSx handheld GPS unit and described with an evaluation of function, interrelationships, and significance. Documentation included photographs and overall measurements of the historic property within the APE accompanied by verbal descriptions.
5. As all of the historic properties identified during the course of this work consisted of historic era engineering and architectural features, site boundaries were determined by the structural limits.

2.1.2 Subsurface Testing

Mechanical subsurface testing was conducted of a portion of the Ninth Street Access corridor that had not undergone previous cultivation, approximately 3-acres, and accessible for the backhoe as well a small portion of accessible lands that were previously cultivated in pineapple for comparative purposes. In total, the subsurface testing program consisted of the mechanical excavation of five trenches averaging 30 ft (feet) or 10 m (meters) long by one meter wide, using a one and one-half foot, or approximately one-half meter, wide backhoe bucket. The following methods were used to document each backhoe trench:

1. The soil stratigraphy of each trench was drawn to scale and photographed;
2. The sediment layers of each trench were described using standard USDA soil description terminology which included Munsell color, texture, consistency, structure, plasticity, cementation, origin of sediments, descriptions of any inclusions such as

cultural material and/or roots and rootlets, lower boundary distinctiveness and topography, and other general observations;

3. The location and orientation of each backhoe trench was recorded using the Garmin 60 GPS Map 60CSx hand held GPS unit.

2.2 Document Review and GIS Methods

Document review included a search for, and examination of, archival sources, historic maps, traditional practices assessments, and previous archaeological reports from the SHPD and CSH libraries, as well as various online resources and digital reproductions of primary sources made available through the Lāna'i Culture and Heritage Center Website and courtesy of Castle & Cooke Resorts LLC. These resources were accessed in order to understand the background history of the lands surrounding current project area and formulate a predictive model of the types of historic properties that may be encountered during this investigation.

Historic maps were georeferenced in relation to Lanai Island TMK shapefile (County of Maui 2009) and the 1998 South Lāna'i United States Geological Survey (U.S.G.S.) 7.5 minute topographic quadrangle using known points and ArcView 9.1. The project area boundary depicted on historic maps included as a part of this report should be considered approximate and used for reference information only.

Coordinate data collected with the Garmin GPS Map 60CSx GPS unit was downloaded using DNRGarmin (Version 5.03.002) (Minnesota Department of Natural Resources 2001) and exported to the ESRI Shapefile format UTM Coordinate System, Zone 4 North, NAD 1983 (Hawaii) Datum. All topographic maps presented herein were created using ArcView 9.1 and TOPO! ©2003 National Geographic Maps, All Rights Reserved.

Section 3 Background Research

The division of Lāna'i's lands into political districts may have occurred under the direction of the chiefs of Maui, as Lāna'i historically appeared to be "subject or tributary to Maui" during the times of Kamalalawalu (about 1550-1600 AD) (Fornander 1919 Part I: 206-8). The island was apportioned into the following thirteen *ahupua'a* land divisions that were established during traditional times: Ka'ā, Kamoku, Kalulu, Kaunolū, Keāliakapu, Keāliaaupuni, Pālāwai, Kāma'o, Ka'ohai, Pawili, Maunalei, Mahana, and Paoma'i. Unlike *ahupua'a* divisions of the other seven major islands of the Hawaiian chain, three of the thirteen *ahupua'a* divisions on Lāna'i Island have the unique characteristic of traversing across the island from one coastline to the other (Hawai'i Department of Survey 1903:66; Figure 5). The current project area is located along the upper plateau of Kamoku Ahupua'a within the *mokupuni* of Lāna'i (Moffat and Fitzpatrick 1995:23).

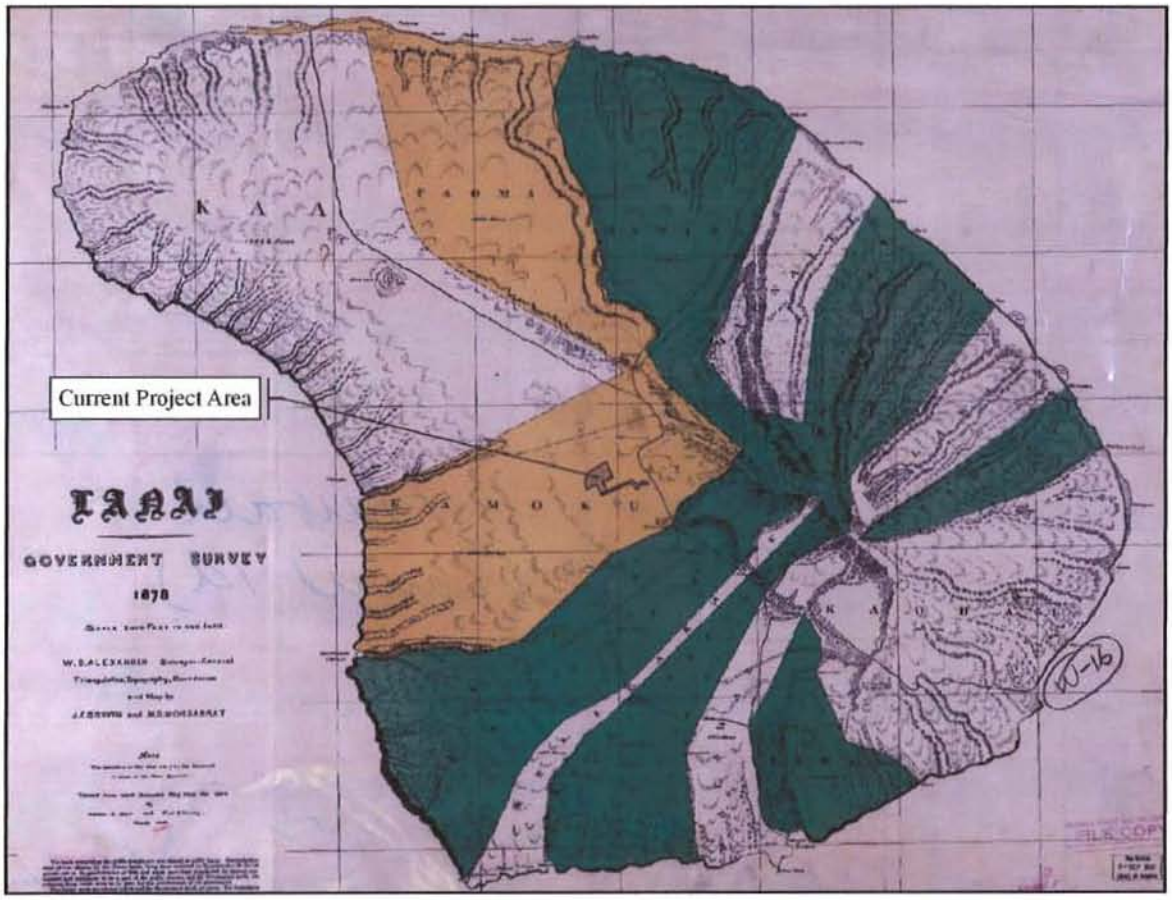

Figure 5. The J. F. Brown and M. D. Monsarrat map (1878) showing Kamoku Ahupua'a as a traditional land division of the island of Lāna'i (crown land in yellow, government lands in green).

The *ahupua'a* of Kamoku is representative of the traditional *ahupua'a* formation from ocean to mountain and includes 8,291 acres of the western portion of Lāna'i from the shoreline upslope to the base of the high northwest to southeast trending ridge crest of the island. The following

description of Kamoku Ahupua'a was presented to the U.S. Government in Part 3 of the *Hawaiian Investigation* to the U.S. Senate Committee on Pacific Islands and Porto Rico [sic] (1903:1340):

> The ahupua'a of Kamoku on this island is a large and valuable tract extending from the sea to the top of the mountain ridge where a good supply of drinking water from a spring is obtained not far from the Gibson homestead. The government road crosses the land a short distance below the homestead. From this point commences a beautiful stretch of country extending for miles around. The soil is very rich and is capable of producing large crops of corn and potatoes.

3.1 Traditional and Historical Background

The most comprehensive summary of traditional accounts pertaining to the "formation of Lāna'i, first habitation, general traditions, early history and place names" appears in Kenneth P. Emory's *The Island of Lāna'i: A Survey of Native Culture* (1924). Emory suggests through "genealogies and traditions" that Lāna'i "began to be populated by important numbers about 1400 A.D." (Emory 1924:123). Based on the number of house sites he observed and approximately five persons per household (Figure 6), Emory estimated the pre-1778 population of the island at 3,150 (1924:122). The traditional life style focused on subsistence farming and fishing within the context of the *ahupua'a* or traditional land unit that extended from the coastal reaches to the upland resources.

3.1.1 Mythological and Traditional Accounts

3.1.1.1 The Story of the 'Ōhelo

The "Story of the *'Ōhelo*", as translated from the original Hawaiian by Abraham Fornander (1919), describes the origin of the sacred offering of *'ōhelo* to the goddess Pele, and the importance of Lāna'i Island in the telling of the story. According to Fornander, the many sisters of Pele followed her east from Tahiti across the Pacific Ocean. As Malulani, Kaohelo, Hi'iaka, and Pele arrived at the Hawaiian Islands, Malulani choose Lāna'i to dwell on, while Pele, Kaohelo, and her younger sisters traveled on to the island of Hawai'i.

Kaohelo had a son named Kiha, who was given instructions by Kaohelo as she neared death where she should be buried. "Take my body to the very navel of your grandmother, right on top of Kīlauea; then bury me there." This her son did. The flesh of Kaohelo became the creeping vine and her bones became the bush-plant of the *'ōhelo*. Her head was treasured by Pele as the smoldering fire of Kīlauea. The remainder of her body brought volcanic fire to Haleakalā on Maui, Keālia on Oahu, and also to Kaua'i.

When Malulani, living on Lāna'i, heard of the death of their youngest sister, she went to Hawai'i to retrieve her body, but found that small pieces of her body were strewn across the landscape sprouting into vines and bushes of the *'ōhelo*. She gathered as much of her sister's remains as she could, but upon returning to Lāna'i, was surprised to find the pieces of Kaohelo's body had been strung as leis and worn as adornment. Saddened by this, Malulani died.

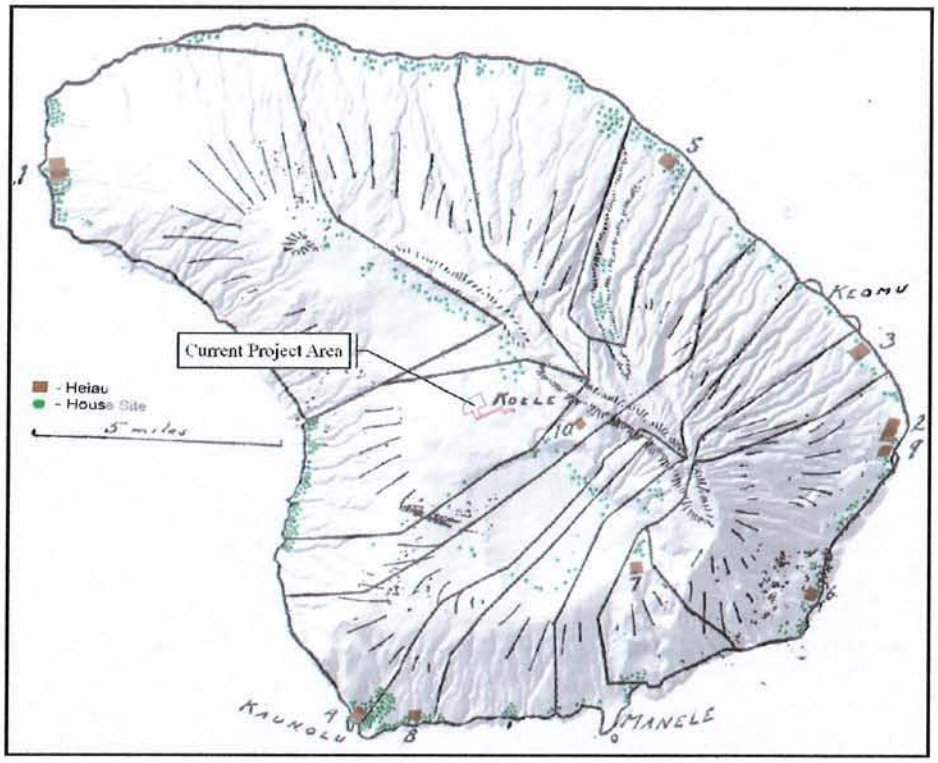

Figure 6. Map of Lāna'i showing *ahupua'a* and the distribution of house sites and *heiau* known to Kenneth Emory in 1921 in relation to the current project area (green dots represent visible house sites, rectangles correspond to *heiau* locations, and the numeric reference ranks the *heiau* [brown rectangles] according to size). (Emory 1924:49)

Hi'iaka then came to Lāna'i to recover the body of Malulani, whereupon small bundles containing her remains were scattered across the island of Hawai'i, causing small hills and islets to remain to this day. In this way, the island of Lāna'i is part of the legend of how the *'ōhelo* came to be spread across the islands of Hawai'i, and why the *'ōhelo* is the special sacred offering to Pele (Fornander 1919, V, III: 576-580).

3.1.1.2 The Ghosts of Lāna'i

The northern coastal place name of Laewahie refers to the point on Lāna'i where Kaululā'au built a signal fire to the people of Lahaina. Fornander (1918:542) recorded the story of Kaka'alaneo, the chief of all of West Maui. His son, Kaululā'au, grew up as a boy involved in great mischief. Because he uprooted the sacred breadfruit grove of Lahaina, his father had no choice but to banish his son to the uninhabited island of Lāna'i. At that time, Lāna'i was the abode of ghosts, and Kaululā'au was sent there to be killed by them. Tabrah (1976) notes the many tricks the ghosts tried to use to murder Kaululā'au, and her account identifies Naha, located in the *ahupua'a* of Kaohai, as the location of the signal fire to the people of Lahaina after he had defeated all of the ghosts of the island (the literal translation of Kaohai is "firebrand.") Kalākaua (1888:212, 230) records the legend of Kaululā'au conquering the ghosts of Lāna'i in two separate stories, one of which details his fight with the *Mo'oaleo*, a lizard god of the island