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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 5, 2011

Ref. No.: 10HD-156
Author: LD-WTM

MEMORANDUM

TO: Gary L. Hooser, Director
Office of Environmental Quality Control

FROM: William J. Aila, Jr., Chairperson *WJA*
Board of Land and Natural Resources

SUBJECT: Findings of No Significant Impact (FONSI) to the Environment for a Direct Lease to Boteilho Hawaii Enterprises, Inc., for Dairy Purposes, Opihipau-Hukiaa, Kokoiki, North Kohala, Hawaii, Tax Map Key: 3rd/ 5-5-003: 4, 5 & 6, 5-5-005: 1, and 5-5-006: 2, 3, 4 & 15.

The Department of Land and Natural Resources, Land Division, has reviewed the comments received during the 30-day public review period and the applicant's responses to these comments for the above referenced environmental assessment. Accordingly, we have determined that this project will not have a significant environmental effect and have issued a FONSI determination. Please publish this notice in your next scheduled publication of the Environmental Notice.

We have enclosed a completed OEQC Bulletin Publication Form, a copy of the Final Environmental Assessment with a CD containing the pdf files.

If you have any questions, please feel free to contact Wesley Matsunaga at the Hawaii District Land Office at (808) 974-6203. Thank you.

Enclosures

cc: Land Board Member
Central Files
District Files

FINAL ENVIRONMENTAL ASSESSMENT

**BOTEILHO LEASE OF STATE LAND
FOR DAIRY PURPOSES**

TMKs: (3rd) 5-5-003:004, 005 & 006; 5-5-005:001;
and 5-5-006:002, 003, 004 & 015
North Kohala District, Hawai'i Island, State of Hawai'i

April 2011

Prepared for:

State of Hawai'i
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai'i 96809

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and 5-5-006:002, 003, 004 & 015
North Kohala District, Hawai'i Island, State of Hawai'i

APPLICANT:

Boteilho Hawaii Enterprises
P.O. Box 190
Hawi, Hawai'i 96719

APPROVING AGENCY:

Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai'i 96809

CONSULTANT:

Geometrician Associates LLC
P.O. Box 396
Hilo, Hawai'i 96721

CLASS OF ACTION:

Use of State Lands

This document is prepared pursuant to:
The Hawai'i Environmental Policy Act,
Chapter 343, Hawai'i Revised Statutes (HRS), and
Title 11, Chapter 200, Hawai'i Department of Health Administrative Rules (HAR)

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SUMMARY OF THE PROPOSED ACTION, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Boteilho Hawaii Enterprises proposes to lease eight state properties totaling approximately 880 acres for continued use as a dairy. The company is owned by *kama'aina* dairy farmer Ed Boteilho, Jr., who operates Clover Leaf Dairy, one of the three remaining dairies in the State. The dairy has been in operation at this location since 1985 and on the island since 1962. It currently has 800 cows, with about 650 giving milk at any given time.

Although the dairy currently leases and fully utilizes all of the subject properties, Boteilho Hawaii Enterprises seeks to rationalize the terms and purposes of the lease to make the dairy more efficient and allow prudent acquisition of new equipment. The current leases are set to expire at various dates in 2019 and 2020. The new lease would have a common thirty-year term. All dairying uses would be allowed for the entire lease. No relocation of the main part of the dairy would occur and no major new facilities would be built. The main advantage would be to allow the growing and chopping of forage in areas where only pasture uses are currently allowed. At the present time, according to the Department of Agriculture, more than 80 percent of Hawai'i's milk comes from California. Depending on the weather, it can take more than a week to arrive in Hawai'i. This milk gets pasteurized before leaving the port and once again prior to being bottled in Hawai'i. Clover Leaf Dairy trucks its milk each day for processing to Meadow Gold Dairy, which is located 97 miles away in Hilo, from which State residents can have access to fresh local milk. State agriculture officials are concerned that the loss of local dairies could leave the State's milk supply in a precarious position.

The dairy has been in operation in this location since 1985, and no sensitive biological or archaeological resources are present and there are no traditional cultural uses on the agriculturally zoned property. Agricultural impacts are properly handled on the dairy, and continuing the dairy is compatible with uses on surrounding lands.

PART 1: PROPOSED ACTION, LOCATION AND ENVIRONMENTAL ASSESSMENT PROCESS

1.1 Proposed Action, Location and Property Ownership

Boteilho Hawaii Enterprises proposes to lease eight state properties comprising approximately 880 acres for continued use as a dairy operation (Figures 1-4). The company is owned by *kama'aina* dairy farmer Ed Boteilho, Jr., who with his family and about a dozen employees operates Clover Leaf Dairy, one of the three remaining dairies in the State. The dairy has been in operation at this location since 1985 and on the island since 1962. It currently has 800 cows, with about 650 giving milk at any given time.

Although the dairy currently leases and fully utilizes all of the subject properties, Boteilho Hawaii Enterprises seeks to rationalize the terms and purposes of the lease to make the dairy more efficient and allow prudent acquisition of new equipment. Specifically, the Proposed Action is for the State of Hawai'i, Board of Land and Natural Resources (BLNR) to issue a new direct lease for all of the properties currently under lease to Boteilho Hawaii Enterprises (see Appendix 2 for BLNR Approval of Direct Lease in Principle). The current leases (General Leases Nos. S-5572, S-5574 and S-4950) are set to expire at various dates in 2019 and 2020. The new lease would have a common thirty-year term from the date of approval by the BLNR. All dairying uses would be allowed for the entire lease. No relocation of the main part of the dairy would occur and no major new facilities would be built. The main advantage would be to allow the growing and chopping of forage in areas where only pasture uses are currently allowed. This change to the lease terms is necessary to efficiently feed the cows, which in addition to grazing require supplement by Guinea grass, tinaroo, and desmodium. These mixed forage plants sprout as "volunteers" in Kohala pastures, are grown naturally by simply spreading manure and providing irrigation, and then are chopped for the cows.

At the present time, according to the Department of Agriculture (DoA), more than 80 percent of Hawai'i's milk comes from California. Depending on the weather, it can take more than a week to arrive in Hawai'i. This milk gets pasteurized before leaving the port and once again prior to being bottled in Hawai'i. Clover Leaf Dairy trucks its milk each day for processing to Meadow Gold Dairy, which is located 97 miles away in Hilo, from which State residents can have access to fresh local milk. The DoA reported that eight Hawai'i dairies have closed down since 1999, including the last one on O'ahu in 2008. As recently as 1980, Hawai'i's dairy industry supplied the State with all its milk, but the industry has since been impacted by the high price and shipping costs of feed as well as competition from cheaper mainland milk. Dairy cow herds and State milk production have declined each year. State agriculture officials are concerned that the loss of local dairies could leave the State's milk supply in a precarious position should there be a natural disaster or an interruption in transportation such as a dock strike (*West Hawaii Today* 1/27/08; *Honolulu Star-Advertiser* 8/27/10).

1.2 Environmental Assessment Process

This Environmental Assessment (EA) process is being conducted in accordance with Chapter 343 of the Hawai'i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawai'i Administrative Rules (HAR), is the basis for the environmental impact process in the State of Hawai'i. According to Chapter 343, an EA is prepared to determine impacts associated with an action, to develop mitigation measures for adverse impacts, and to determine whether any of the impacts are significant according to thirteen specific criteria.

Part 4 of this document states the finding (anticipated in the Draft EA) that no significant impacts are expected to occur; Part 5 lists each criterion and presents the findings made by applicant in consultation with and with the approval of the approving agency, the Hawai'i State Department of Land and Natural Resources (DLNR). In the EA process, if the approving agency determines after considering comments to the Draft EA that no significant impacts would likely occur, then the agency issues a Finding of No Significant Impact (FONSI), and the action is permitted to occur. If the agency concludes that significant impacts are expected to occur as a result of the proposed action, then an Environmental Impact Statement (EIS) is prepared.

As stated above, the Proposed Action is for the State of Hawai'i, Board of Land and Natural Resources to issue a new direct lease for all of the properties currently under lease to Boteilho Hawaii Enterprises for continued use as a dairy operation for a term of 30 years. The only marked difference in the lease is to allow all dairy uses on all lease properties. The scope of this EA covers the direct lease and the specific planned operational changes, which would mainly be the growing and chopping of forage in areas where only pasture uses are currently allowed. Other activities would include routine maintenance and minor upgrades of the dairy's facilities and new, minor internal access, irrigation and structural improvements. It is acknowledged that in the future the dairy, under this or another owner, may consider expanded operations not currently contemplated and thus not capable of analysis in this EA. If such major changes occur, compliance with Chapter 343 HRS would need to be re-evaluated.

1.3 Public Involvement and Agency Coordination

The following agencies and organizations were consulted in development of the environmental assessment:

Federal:

Federal Aviation Administration
Ala Kahakai National Historic Trail

State:

State Historic Preservation Division
Department of Health
Department of Transportation
Office of Hawaiian Affairs
Department of Agriculture

County:

Planning Department
Department of Public Works
Police Department
County Council

Other:

North Kohala Community Development Plan Action Committee
Kona-Kohala Chamber of Commerce
Sierra Club
Kamehameha Schools
Hualua Land LLC
E Mau Na Ala Hele
Other nearby property owners

Copies of communications received during early consultation are contained in Appendix 1a. Appendix 1b contains written comments on the Draft EA and the responses to these comments. Various places in the EA have been modified to reflect input received in the comment letters; additional or modified non-procedural text is denoted by double underlines, as in this paragraph.

PART 2: ALTERNATIVES

2.1 Action Alternatives

The action under consideration is the lease of State lands for continued use as a dairy operation, which will be called the *Proposed Action* in this document.

2.2 No Action

Under the No Action Alternative, a new lease would not be issued for the dairy operation and Clover Leaf Dairy, one of only three remaining in the state, would not benefit from increased efficiency or an extension of the lease timeframe, which would allow for additional construction and maintenance of infrastructure. This alternative would put the dairy operation at increased operational risk which could result in reduced supply of fresh local milk for Hawai'i residents and a reduction in the State's diversified agriculture.

2.3 Alternate Site

Clover Leaf Dairy is already operating on the leased lands. An alternate site could likely be found and utilized but would require construction of a new dairy and relocation, which would be an untenable expense to a business already operating under a relatively thin margin because of existing market conditions.

PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

The properties proposed for continued lease by Boteilho Hawaii Enterprises to operate Clover Leaf Dairy are referred to throughout this EA as the *project site* or the *dairy lease lands*. The term *project area* is used to describe the general environs in this part of North Kohala.

The project site consists of eight parcels of State land comprising 879.549 acres. TMKs 5-5-003:004, 005 and 006 are located *mauka* of State Route 270, also known as the Akoni-Pule Highway, in the *ahupua'a* of Opihipau and Hukia'a (see Appendix 3 for maps). Combined they total 207.82 acres. TMKs 5-5-006:002, 003, 004, and 015 are located directly *makai* of the previous TMKs and of the Akoni-Pule Highway in the same *ahupua'a* and comprise a total of 597.406 acres. Parcel 5 is a right-of-way that the State has chosen to reserve from the lands available for lease. TMK 5-5-005:001 is a 74.323-acre parcel located approximately 0.6 miles to the east of the *makai* parcels and is in the Kokoiki Ahupua'a.

Adjacent land use consists of residential, agricultural, transportation and energy production activities. The *makai* portion of the dairy lease lands in Plat 5-5-006 is adjacent to Upolu Point Road, a one-lane, paved roadway that provides access to Upolu Airport. Also, TMKs 5-5-006:004 and 015 are adjacent to Upolu Airport, which is under the control of the State Department of Transportation. The *makai* portion of the project site is also located adjacent to the Hawi Renewable Development electricity-generating wind farm, which is located on the eastern side of the Upolu Point road. The wind farm consists of 16 wind generators that measure roughly 200 feet tall and generate a total of 10.5 megawatts (<http://hawaii.gov/dbedt/info/energy/renewable/wind>). At the far *makai* end, an unpaved road crosses the leased lands near the shoreline and provides access to Mo'okini Heiau, a private home and sites used by the public for coastal recreation. All dairy uses are *mauka* of this road and shoreline area.

3.1 Physical Environment

3.1.1 Geology, Soils and Geologic Hazards

Environmental Setting

Geologically, the project site is located on old lava flows of the Pololu Basalt Series from Kohala Volcano erupted roughly 250,000 years ago, with flow surfaces possibly locally mantled by unmapped aeolian and tephra-fall deposits (Wolfe and Morris 1996).

The *mauka* portion of the project site (above the Akoni Pule Highway) is covered predominately by soils classified by the U.S. Natural Resources Conservation Service

(formerly Soil Conservation Service) as Kohala Silty Clay on slopes of 12 to 20 percent (KhD), with some areas consisting of Kohala Silty Clay on 3 to 12 percent slopes (KhC) and Kohala Silty Clay on slopes up to 3 percent (KhA). All are well-drained soils, with runoff slow to medium and a slight to moderate erosion hazard. All are slightly acid in the surface layer, slightly acid and neutral in the subsoil, and neutral in the substratum. They typically consist of up to 14 inches of silty clay covering a layer of silty clay loam up to 25 inches deep overlying what is usually 'a'a lava bedrock, and are typically used for pasture and occasionally irrigated sugarcane (U.S. Soil Conservation Service 1973).

The soil on the *makai* portion (located below the Akoni-Pule Highway) consists of areas of Kohala Silty Clay on varying slopes, except for the area closest to the ocean which contains soil consisting of Hawi Silty Clay. The Hawi Series soils are also well-drained, with medium permeability and runoff and a moderate erosion hazard. The surface layer, which is typically up to 15 inches thick, is slightly acid with a neutral subsoil. Like the Kohala Series, these soils are typically used for pasture and irrigated sugarcane.

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. Volcanic hazard as assessed by the United States Geological Survey in this area of North Kohala is zone 9 on a scale of ascending risk from 9 to 1 (Heliker 1990:23). The low hazard risk is based on the fact that Kohala Volcano, the oldest volcano on the island, has not erupted for 60,000 years and is possibly extinct. As such, there is negligible risk of lava inundation over relatively short time scales in the project area.

In terms of seismic risk, the entire Island of Hawai'i is rated Zone 4 Seismic Hazard (*Uniform Building Code, 1997 Edition*, Figure 16-2). Zone 4 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built, as the 6.7-magnitude quake of October 15, 2006, demonstrated. The project site does not appear to be subject to subsidence, landslides or other forms of mass wasting.

Impacts and Mitigation Measures

In general the geology and soils are suitable for a dairy, and geologic hazards impose no constraints on continuing dairy operations. Dam safety issues are covered below.

3.1.2 Drainage, Water Features and Water Quality

Existing Environment

The project site has no perennial surface water bodies except for an artificial earthen reservoir and the Kohala Ditch, which provide irrigation water to Clover Leaf Dairy and other farm and ranch operations in Kohala. No known areas of local (non-stream related) flooding are present in the project area. The Federal Emergency Management Agency's

Flood Insurance Rate Maps (FIRM) for the project site (1551660100C and 1551660050C, both 9/16/1988) show that the project site is mostly within Flood Zone X, outside of the 500-year floodplain. There is thus relatively low hazard from the principal sources of flooding in the area, although local sources can still cause flooding. The coastal fringe of the *makai*-most lease property, TMK 5-5-006:004, which is outside the area of active dairy uses, is within the coastal flooding area, Zone VE. Maps printed by the Pacific Tsunami Warning Center and the Hawai‘i County Civil Defense Agency show a small shoreline portion of this same property that should be evacuated during a tsunami warning (<http://www5.hawaii.gov/tsunami/maps.asp>).

The Kohala Ditch is a 20-mile long network of irrigation flumes and ditches that was completed in 1905. Built to serve the sugar plantations that operated in Kohala for over a century, it was damaged in the 2006 earthquake but was repaired in 2008 to provide stock water for ranches and irrigation for farms. The Kohala Ditch is the source of water for the one active earthen dam present on the property, Hawi No. 3 Reservoir, which was built for irrigation and is owned by the State of Hawai‘i and Kamehameha Schools (KS). The reservoir straddles State and KS properties (see water feature within southernmost portion of highlighted lease area in Appendix 3, Figure 1 for location; see also Figure 4e for photograph). Hawi No. 3 Reservoir has a length of 1,600 feet and is 26 feet in height. It was originally built to hold a maximum of 42 million galls. (<http://www.hidlnr.org/eng/dam/pdf/factSheets/hawaii/HA-0050-Hawi3.pdf>).

In response to a heightened need to ensure the safety of dams in the State of Hawai‘i after the Kaloko Dam disaster of 2006 on Kaua‘i, the State of Hawai‘i Legislature enacted Act 262, the Hawaii Dam and Reservoir Safety Act of 2007. It mandated the BLNR to provide for the inspection and regulation of construction, enlargement, repair, alteration, maintenance, operation, and removal of dams or reservoirs to protect the health, safety, and welfare of the citizens of the State by reducing the risk of failure of the dams or reservoirs. The Engineering Division of DLNR conducted a Phase I Assessment for all dams through its Dam Safety Section. Hawi Reservoir No. 3 was one of 13 dams on the island of Hawai‘i that was inventoried, inspected and assessed. In 2007 and 2008 the State of Hawai‘i Legislature, as amended by Act 158 of the 2008 State of Hawai‘i Legislature, appropriated \$14,530,000 for the Dam Assessments, Maintenance and Remediation Improvement, Statewide.

Part of this \$14,530,000 funding is to remediate the Hawi No.3 Reservoir. The State of Hawai‘i contracted a consultant to design three alternatives for consideration by the owners of the reservoir: removal, full remediation, and storage reduction. Upon careful review of operational needs and budgetary constraints, the owners decided on storage reduction and agreed to cost-share in the construction remediation project. On May 13, 2010, the BLNR unanimously approved a motion to authorize the Chairperson of the BLNR to negotiate the terms and conditions and sign a Memorandum of Agreement with KS. The project will reduce the size of the reservoir to less than half of its current

capacity, which will still be acceptable for the irrigation requirements of its downstream users, including Clover Leaf Dairy. The operational reduction project will accomplish the following improvements:

1. Lowering of the spillway providing suitable storage capacity and to safely pass the probable maximum flood flow, as required by the State's Dam Safety Program;
2. Installation of an outlet valve, elevation gage and telemetry;
3. Replacement of a 30-inch pipe culvert under the access road and the concrete structures at its downstream end;
4. Repair of the outlet channel, spreader apron, and inflow feeder channel from the Kohala Ditch to the 30-inch culvert;
5. Clearance and grubbing of eroded areas and removal of any remaining trees and regarding the embankment slopes; and
6. Installation of erosion and sediment control measures.

The project is expected to take over a year to complete. In the interim, the reservoir owners will provide Clover Leaf Dairy with a bypass flow for the 24-inch irrigation line.

In terms of water quality, the dairy utilizes a number of Best Management Practices that have been developed by Mr. Boteilho independently and/or as part of Conservation Plans approved by the U.S. Natural Resources Conservation Service. These include:

- Use of primarily manure, with limited chemical fertilizers, for fertilization in forage areas.
- Management of manure application in forage area to avoid groundwater and soil contamination through a variety of application, irrigation, compaction avoidance, and nutrient testing practices.
- Use of natural forage plants adapted to the climate for forage production.
- No herbicide application.
- Treatment of cow wash water at dairy barn through a manure recovery area and biotreatment of residual water in a wetlands lagoon (see Appendix 3, Figures 4f-h for photos).
- Overflow basins for the lagoon treatment area.
- Fencing of pasture *mauka* of shoreline area and location of dairy more than one-half mile from shoreline to minimize impacts to nearshore waters.

Impacts and Mitigation Measures

The Proposed Action, which involves the continuation of existing activity, will not adversely affect drainage or expose lives or property to risk. No impacts to stream banks or stream waters will occur, as none are present.

The dairy requires continued agricultural water for forage irrigation, wash water, and other purposes. Various parties within the State and district have shown a commitment to maintain the Kohala Ditch and Hawi No. 3 Reservoir for irrigation for the dairy and other operations, and the dairy is reasonably assured of a continuing supply of irrigation water for the foreseeable future. The reservoir has been assessed by the State of Hawai‘i and is being modified in cooperation with Kamehameha Schools to ensure both safety and continued use. DLNR will continue to monitor the reservoir for safety and integrity, and the continued lease of lands for dairy purposes should not expose the public to hazard.

The Best Management Practices under which the dairy currently operates and will continue to minimize sedimentation, erosion and agricultural runoff.

3.1.3 Flora, Fauna and Ecosystems

Existing Environment

The natural vegetation of this part of North Kohala was most likely lowland mesic and dry forest with a particularly rich range of species, along with drier strand vegetation near the shoreline (Gagne and Cuddihy 1990). These original communities, however, were destroyed or heavily degraded by traditional Hawaiian cultivation, sugar cane plantations, cattle grazing, and clearing for small farms and residences. The vegetation in and around the dairy lease lands is now either managed vegetation (i.e., crops, pasture or landscaped grounds) or adventive “communities” of various alien weeds (see Appendix 3, Figures 4a-j for photos).

Most areas on the dairy lease lands are pastures and forage production areas entirely devoted to grass and forage crops, including Guinea grass (*Panicum maximum*), green panic grass (*Panicum maximum* var. *trichoglume*), kikuyu grass (*Pennisetum clandestinum*), tinaroo (*Neonotonia wightii*) and *Desmodium* spp. Interspersed are many groves, hedgerows, and individual shrubs or trees such as *koa haole* (*Leucaena leucocephala*), ironwood (*Casuarina equisetifolia*), Formosan koa (*Acacia confusa*), black wattle (*Acacia mearnsii*), guava (*Psidium guajava*), Christmas berry (*Schinus terebinthifolius*) and java plum (*Syzygium cumunii*). Many dozens of weedy species too numerous to mention and without conservation concern are also present. Fireweed (*Senecio madagascariensis*), a pasture pest that plagues most areas of Hawai‘i, is present but under control in areas where forage can be grown. Native plants are not widespread; the only plant observed during a high-level reconnaissance of the leased parcels outside the shoreline area was the common roadside herb ‘*uhaloa* (*Waltheria indica*).

A very small portion of the property, roughly 1,200 feet in length, fronts the shoreline. As stated earlier, an unpaved road crosses the leased lands near the shoreline and provides access to Mo‘okini Heiau, a private home and sites used by the public for coastal

recreation, and all dairy uses are *mauka* of this road and shoreline area. Reconnaissance of the shoreline area (see Appendix 3, Figure 4j) showed it to be steep and bouldery with little vegetation. This area and the road fronting it were dominated by a variety of weeds such as goosefoot (*Chenopodium murale*), Australian saltbush (*Atriplex semibaccata*), sow thistle (*Sonchus oleraceus*), pigweed (*Portulaca oleracea*), Bermuda grass (*Cynodon dactylon*), swollen fingergrass (*Chloris barbata*) and buffel grass (*Cenchrus ciliaris*). A few common shoreline natives were also present, including *pa'ū o Hi'iaka* (*Jacquemontia ovalifolia*) and *ilima* (*Sida fallax*).

A large variety of alien birds makes up the avifauna of this area. Common Mynahs (*Acridotheres tristis*), Black Francolins (*Francolinus francolinus*), House Finches (*Carpodacus mexicanus*), Japanese White-eyes (*Zosterops japonicus*), Cattle Egrets (*Bubulcus ibis*) and Rock Doves (*Columba livia*) were observed as abundant during reconnaissance. Common migratory or resident shorebirds and seabirds likely utilize the shoreline at the far *makai* edge of the leased properties. Surveys of birds by P. Bruner on six days during the months of April, July and October 1997 for the Upolu Airport Final Environmental Assessment (HDOT-A 1999) noted four native and 13 introduced birds. Most of the natives observed or inferred to be present were migratory or resident seabirds, including Brown Noddy (*Anous stolidus pileatus*), Black Noddy (*Anous minutus melanogenys*), White-tailed Tropicbird (*Phaethon lepturus dorotheae*), Golden Plover (*Pluvialis fulva*) and Ruddy Turnstone (*Arenaria interpres*). Bruner also observed a Short-eared Owl (*Asio flammeus sandwichensis*), which is fairly common in grasslands of the leeward side of the Big Island.

As the project site is already a dairy, the most common mammal is the domestic cow. Wild and feral cats and dogs as well as mice, mongooses and various species of rats, probably all visit the site occasionally. The endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), which is widespread if not numerous on the island of Hawai'i, undoubtedly flies over and perhaps forages on the site.

Although not observed, several threatened or endangered birds may be present in this part of Kohala and may overfly or occasionally utilize resources here, including the endangered Hawaiian Hawk (*Buteo solitarius*), the endangered Hawaiian Petrel (*Pterodroma sandwichensis*), and the threatened Newell's Shearwater (*Puffinus auricularis newelli*). The Hawaiian Hawk would not find the mostly grassy area dominated by alien plants particularly suitable habitat, although it might forage in the area for rodents or birds. According to the U.S. Natural Resources Conservation Service (USNRCS), which consulted with the U.S. Fish and Wildlife Service during preparation of conservation plans for the property, the endangered Hawaiian Coot ('*Alae ke'oke'o*; *Fulica alae*) and the endangered Hawaiian Duck (*Koloa Maoli*; *Anas wyvilliana*) may utilize the reservoir at times. These agencies expressed no concern with the presence of these species on a dairy farm, with the USNRCS noting that the reservoir was kept clean and working to provide habitat for these species.

Impacts and Mitigation Measures

Because of the lack of native ecosystems, or threatened or endangered species that utilize the site and could be at risk from dairy operations, the Proposed Action of continuing dairy operations on the project site is not likely to have adverse impacts to biological resources. No impacts to Hawaiian Hawks, Hawaiian Coots, Hawaiian Ducks or Hawaiian hoary bats would be expected. Seabirds can be harmed by unshielded lighting, which can disorient fledglings as they make their way to sea. No unshielded lighting is present or planned.

3.1.4 Noise and Scenic Resources

Environmental Setting

Noise levels at the dairy vary from low to moderate, depending primarily on the proximity to the wind farm and current wind conditions. There is minor noise from agricultural activities and vehicle traffic on the nearby highway. Aircraft landings occur only infrequently at Upolu Airport. Currently, no highly sensitive noise receptors such as schools or parks are present within a half-mile of the dairy.

The dairy has impressive upslope views of Kohala Volcano and downslope views of the coastline and ocean (see Appendix 3, Figures 4a-b). The Hawai'i County General Plan contains Goals, Policies and Standards intended to preserve areas of natural beauty and scenic vistas from encroachment. The plan lists Upolu Point (TMK 5-5-007:007), along with the coastal viewplane from the Akoni Pule Highway (various TMKs), as significant for their scenic character. The Hawi Renewable Development electricity-generating wind farm is located adjacent to the *makai* portion of the dairy lease lands, on the eastern side of the Upolu Point road. The wind farm consists of 16 wind generators that measure roughly 200 feet tall. These represent the primary manmade element in the viewplane from Akoni Pule Highway in this area. From all adjacent viewpoints, the dairy presents a pleasing scene of grazing cows in pastures and green forage areas.

Impacts and Mitigation Measures

The Proposed Action of continuing dairy operations would not measurably affect noise levels or scenic sites recognized in the Hawai'i County General Plan.

3.1.5 Climate and Air Quality

Existing Meteorology and Air Quality

The climate in the area is mild and dry. According to the National Oceanic and Atmospheric Administration, the average annual rainfall at Upolu Airport is 32.63 inches, and the average annual temperature ranges from 82.6 to 68.8 degrees, with an average (mean) temperature of 75.87 degrees. September is the warmest month with an average maximum temperature of 85.8 degrees and February is the coolest with an average minimum temperature of 66.2 degrees (Hawai'i Climate Summaries, NOAA Western Regional Climate Center, <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?hiupol>). Rainfall is somewhat higher in the *mauka* portion of the project site.

As evidenced by the fact that a commercial wind farm is located adjacent, the Upolu area experiences strong and steady tradewinds from the east to northeast. Data from the Upolu Airport Final EA (Hawai'i State DOT-A 1999) noted that winds were trades 98 percent of the time, averaging 12.4 miles per hour. The tradewinds of North Kohala contribute to excellent air quality by generally dispersing human-derived pollutants as well as volcano-induced vog, which are volcanic emissions of sulfur dioxide that convert into particulate sulfate and produce a haze.

Impacts and Mitigation Measures

The weather and climate are generally suitable for dairy operations as long as irrigation water is available. In areas with bare surfaces, which occur during very dry periods near the dairy buildings, strong winds may generate dust for short periods of times. Dairy management includes practices to minimize the area of bare surfaces. As no changes in land use are proposed, the Proposed Action is not expected to produce any permanent substantial impacts on air quality beyond those already produced by the ongoing dairy operation.

3.1.6 Hazardous Substances, Toxic Waste and Hazardous Conditions

Environmental Setting, Impacts and Mitigation Measures

No systematic assessment of the dairy lease lands has been conducted to determine if hazardous materials, toxic waste or other hazardous conditions may have been present on the site. The documented history of use of the site and its surroundings as confirmed by visual surveys, including the existing dairy operations that have been ongoing on the site since 1985, did not reveal any structures, equipment, or storage containers that indicate hazardous material use. Therefore, based upon prior and present use of the project site, no hazardous substances, toxic wastes, or hazardous conditions are expected to be present on the site.

3.2 Socioeconomic and Cultural

The North Kohala District is an ethnically and economically diverse community (see Table 1) that was home to about 6,000 residents in 2000. The area was projected in the 2005 Hawai'i County General Plan to have about 8,000 residents by 2010 (2010 U.S. Census of Population counts by district are not yet available as of this writing). North Kohala has seen significant growth over the past 25 years from an influx of retirees and continuing development of resort complexes in the neighboring South Kohala District (Hawai'i County General Plan, 2005). Entrepreneurial activities, including health and wellness and eco-tourism enterprises, have also contributed to the growth. Tourism is an important source of income and employment in the district. Many residents commute to visitor industry jobs in South Kohala and local businesses benefit from visitors touring the area in rental cars. Agriculture is also an important part of the economy.

Table 1. Selected Socioeconomic Characteristics

CHARACTERISTIC	Hawai'i Island	North Kohala
Total Population	148,677	6,038
Percent White	31.5	32.8
Percent Asian	26.7	24.6
Percent Hawaiian or Pacific Islander	9.7	9.5
Percent Two or More Races	28.4	31.1
Median Age (Years)	38.6	38.2
Percent Under 18 Years	26.1	24.4
Percent 65 Years and Over	13.5	13.4
Percent Households with Children	37.5	33.0
Average Household Size	2.75	2.97
Percent Housing Vacant	15.5	8.9
Median Household Income	\$39,805	\$47,733
Percent Below Poverty Level	15.7	12.1

Source: U.S. Bureau of the Census. May 2001. *Profiles of General Demographic Characteristics, 2000 Census of Population and Housing, Hawai'i*. (U.S. Census Bureau Web Page).

The Proposed Action project will not involve any effects on population or other socioeconomic factors. The principal socioeconomic considerations center on land use

compatibility, cultural/historical resources and agricultural impacts. These are addressed in the three subsections below.

3.2.1 Land Use Compatibility

Adjacent Residences

As the aerial photo in Appendix 3, Figure 3 shows, although the dairy is fairly isolated from residential uses, there are at least a dozen homes within 1,000 feet of the leased properties (two of the homes are for dairy-associated residences). Recent large-lot subdivisions have made it possible that additional homes will be built within 1,000 feet. Farms, ranches, and dairies are seen by some as potentially incompatible with residential uses. In Chapter 165, HRS, the “Hawaii Right to Farm Act”, the Hawai‘i State Legislature found that

“...when nonagricultural land uses extend into agricultural areas, farming operations often become the subject of nuisance lawsuits that may result in the premature removal of lands from agricultural use and may discourage future investments in agriculture. The legislature also finds that under the Hawaii State Planning Act, it is a declared policy of this State to ‘foster attitudes and activities conducive to maintaining agriculture as a major sector of Hawaii’s economy.’ Accordingly, it is the purpose of this chapter to reduce the loss to the State of its agricultural resources by limiting the circumstances under which farming operations may be deemed to be a nuisance.” (§165-1)

In §165-2, the Act States:

“ ‘Farming operation’ means a commercial agricultural, silvicultural, or aquacultural facility or pursuit conducted, in whole or in part, including the care and production of livestock and livestock products, poultry and poultry products, apiary products, and plant and animal production for nonfood uses; the planting, cultivating, harvesting, and processing of crops; and the farming or ranching of any plant or animal species in a controlled salt, brackish, or freshwater environment. ‘Farming operation’ also includes but shall not be limited to:

- (1) Marketed produce at roadside stands or farm markets;
- (2) Noises, odors, dust, and fumes emanating from a commercial agricultural or an aquacultural facility or pursuit;
- (3) Operation of machinery and irrigation pumps;
- (4) Ground and aerial seeding and spraying;
- (5) The application of chemical fertilizers, conditioners, insecticides, pesticides, and herbicides; and
- (6) The employment and use of labor.”

In §165-2, the right to farm is explicitly stated:

“No court, official, public servant, or public employee shall declare any farming operation a nuisance for any reason if the farming operation has been conducted in a manner consistent with generally accepted agricultural and management practices. There shall be a rebuttable presumption that a farming operation does not constitute a nuisance.”

As discussed in Section 3.6.2, the dairy lease lands are in the State Land Use Agricultural District and within County Agriculture zoning districts, and the dairy appears to be completely conformant with all designations related to land use. The operation of the dairy by Mr. Boteilho has been conducted with generally accepted agricultural and management practices. Although, like most farming operations, there may be occasional impacts of dust, odors, and other issues, the large property size, constant tradewinds and appropriate practices have limited the frequency and severity of such impacts. The dairy is generally known as a good neighbor, with surrounding residents understanding the importance of the operation and Mr. Boteilho’s right to farm, and there are no known outstanding issues related to compatibility with existing homes. As new residents move into this part of Kohala from inside and outside the State of Hawai‘i, they may sometimes need to be made aware of Hawai‘i’s laws protecting farming and the State’s agricultural goals.

Public Shoreline Recreation

In telephone conversations responding to early consultation, Debbie Chang of the trail advocacy group E Mau Na Ala Hele and Rick Gmerkin of the National Park Service, Ala Kahakai National Historic Trail, affirmed the need to continue to allow lateral transit along the unpaved access road that crosses the property near the shoreline. This road currently serves as a shoreline trail and may someday become a segment of the Ala Kahakai National Historic Trail.

The Proposed Action will not affect shoreline access in any way. Mr. Boteilho has operated the dairy for 25 years without shoreline access problems and is committed to continuing such access.

Airport Operations

A portion of the project site, TMKs 5-5-006:004 and 015, is adjacent to Upolu Airport, which is under the control of the State Department of Transportation. Upolu Airport is a General Utility Airport accommodating single-engine and small twin-engine aircraft with a single runway 3,800 feet in length. The airport is used for operations such as air taxi, general aviation and military use, although there is no control tower, aircraft rescue or

fire fighting, and no cargo facilities. The airport includes a terminal building containing a bathroom but no general aviation facilities except for two tie-downs at the west side of the aircraft parking apron. The airport originated as the private “Suiter Field” in the 1920s, and by 1929 Inter-Island Airways was flying passengers, and later, providing vital mail service. Upolu Airport was used by the U.S. Navy during World War II. Inter-Island Airlines became Hawaiian Airlines and flew into Upolu until the 1960s (Schweitzer 2003). Scheduled commuter service has not been provided at Upolu Airport since 1986 (<http://hawaii.gov/hawaiiaviation/hawaii-airfields-airports/hawaii/upolu-airport/>).

In relation to the compatibility with other aspects of airport operations, the Federal Aviation Administration (FAA) was consulted on December 15, 2010. To date, no response has been received from the FAA, which will be sent a copy of the Draft EA in order to have a further opportunity to comment. Considering the fact that the dairy has operated for 25 years without any known issues related to airport operations, continuation of the use as-is is not expected to cause adverse impacts. Mr. Boteilho is aware of the need to coordinate with the FAA for any new multi-story structures or lighted facilities, none of which are planned as part of the Proposed Action.

3.2.2 Cultural and Archaeological Resources

Cultural and Historical Background

The project site is located in the *ahupua‘a* of Opihipau, Hukia‘a and Kokoiki in the district of North Kohala. The area is probably best known as the birthplace of Kamehameha I and for Mo‘okini Heiau. Located near the shoreline approximately 4,000 feet to the west of the dairy, both are State monuments maintained by the State. In the late 1970s, they were named isolated additions to Lapakahi State Historical Park, which is located approximately six miles southwest of the project site (Neller 1986). Mo‘okini Heiau is also listed on both the Hawai‘i and National registers of historic places.

According to the model developed by Kirch (1985), the Settlement or Colonization period of Hawai‘i occurred between A.D. 300-600, with colonists possibly from the southern Marquesas Islands. Early Hawaiian farmers developed new subsistence strategies during this period, adapting familiar patterns and traditional tools for use in their new environment. Order was kept through adherence to their ancient and ingrained philosophy of life and through the principle of genealogical seniority. According to Fornander (1969), Hawaiians brought from their homeland a variety of Polynesian customs including the major gods of Kane, Ku and Lono; the *kapu* system of law and order; *pu‘uhonua* or places of refuge or asylum; the *‘aumakua* concept of a family or ancestral spirit and the concept of *mana*.

The Development Period, which lasted from A.D. 600-1100, brought changes that included an evolution of traditional tools as well as some distinctly Hawaiian inventions. The evolution of the adze was an example of the former, while the latter included the two-piece fishhook and the octopus-lure breadloaf sinker. Another invention was the *lei niho palaoa*, an item worn by those of high rank which represented a trend toward greater status differentiation.

The Expansion Period from A.D. 1100 to 1650 saw an increase in social stratification and major socioeconomic changes. It also was a time of expansive settling, with the development of the most favorable windward areas as well as more marginal areas on the island's leeward side. This was the time of the greatest population growth as large irrigated field systems were developed and expanded into more arid areas. *Loko* or fishpond aquaculture also flourished during this period (Kirch 1985).

The Expansion Period also saw a second major migration to Hawai'i, this time from Tahiti in the Society Islands. According to Kamakau (1976), Pa'ao, a *kahuna* or spiritual practitioner, settled in the islands during the 13th century. Kamakau wrote that Pa'ao first settled in Puna where he founded a heiau at Waha'ula before relocating to Kohala where he established the Mo'okini Heiau (1991). Both Mo'okini and Waha'ula are of the *luakini* type of *heiau*, where human sacrifices were believed to have occurred.

According to Stokes (1919), Mo'okini Heiau was said to have been built from stones brought from Pololu Valley. It was believed that the stones were passed hand-to-hand by men standing in a line spanning the 15-mile distance from the valley. According to an interview published in the *Hilo Tribune Herald* (Jan. 15, 1955), Heloke Mo'okini stated that Pa'ao had come to his grandmother and told her that she would have a son and to name him Mo'okini after the man who oversaw the *heiau*. Heloke Mo'okini served as high priest and *kahu* until his death and his successor was Kahuna Nui Leimomi Mo'okini Lum (Mo'okini Luakini 1982).

The concept of the *ahupua'a* was established in Hawai'i during the 15th century, adding a new component to what was already a well-stratified society (Kirch 1985). *Ahupua'a* were usually wedge or pie-shaped, encompassing all of the eco-zones from the mountains to the sea and extending several hundred yards beyond the shoreline, assuring a diverse subsistence resource base (Hommon 1986). This land unit became the equivalent of a local community with its own social, economic and political significance.

Ahupua'a were ruled by *ali'i 'ai ahupua'a* or lesser chiefs and managed by a *konohiki*. *Ali'i* and *maka'ainana*, or commoners, were not confined to the boundaries of *ahupua'a* as resources were shared when a need was identified. *Ahupua'a* were further divided into smaller sections such as *'ili*, *mo'o'aina*, *pauku'aina*, *kihapai*, *koele*, *hakuone* and *kuakua* (Hommon 1986, Pogue 1978). The chiefs of these land units have their allegiance to a

territorial chief or *mo'i* (often translated as king). The building of *heiau* flourished during this period as religion took on a more complex role in the sociopolitical climate of territorial competition. Monumental architecture such as *heiau* “played a key role as visual markers of chiefly dominance” (Kirch 1990).

An increase in war marked the Proto-Historic Period (A.D. 1650-1795), both locally and between islands. Some of that warfare involved neighboring South Kohala and the Kawaihae area (located approximately 15 miles southwest of the project site). Shortly before this period, around 1600, Maui chief Kamalalawalu sent spies to areas that included Kawaihae to gauge their population and how many warriors it would take to conquer the areas. According to one account:

The spies sent by Kama-lala-walu went to Hawaii and landed at Kawaihae in the evening. Ka-uhi-o-ka-lani ran about that same evening and returned before the canoes were dismantled and placed in the house. The keepers of the gods at Mailekini were servants of Kama, and so they concealed the canoes of the spies...(Kamakau 1992:56).

However, during the spies’ visit to Kohala, which according to Kamakau was a “thickly-populated land,” they found many empty houses because most of the men were in upland areas taking part in sports competitions. Kamalalawalu’s forces first defeated the residents they found in the northern part of Kohala but when they arrived at Kawaihae they again found empty houses because their residents were attending services at Mailekini Heiau in Waimea. The grassy plains of Waimea soon became the setting for a battle between the Maui warriors and the forces of chiefs from Kohala, Waimea, Kona, Puna and Ka’u. The combined Hawai’i Island forces slew Kamalalawalu and many of his chiefs and warriors, with the remainder making their way back to Maui.

North Kohala is also known as the birthplace of Kamehameha I, who was born sometime between A.D. 1736 and 1758 in the *ahupua'a* of Kokoiki, near the Mo’okini Heiau, during the reign of Kalaniopu’u (Kamakau 1992). It has been said that when he was born, an army was assembling on the leeward Kohala coast, preparing for an attack on Maui, and his birth occurred on a night filled with rain, thunder and lightning (Kamakau 1964, Tomonari-Tuggle 1988). Also at that time, Maui chief Kekaulike was involved in a battle with Alapa’i of Kona. During the conflict, Kekaulike’s men cut down trees in Kona and, according to Kamakau, all of the coconut trees in Kawaihae. According to Kamakau, he also “slaughtered the country people of Kohala” before seizing their possessions and returning to Maui, where he soon became ill and surrendered his power to Kamehamehanui.

This period was one of continual war. Ke’eaumoku set up a fort at Pololu and Honokane where he was attacked by Kalaniopu’u, and then relocated to Maui. Kalaniopu’u also

conquered East Maui, defeating Kamehamehanui, who was Kekaulike's successor and also Kalaiopu'u's wife's brother. Kalaniopu'u appointed one of his chiefs, Puna, to be governor of Hana and Kipahulu. When Kamehamehanui died of illness in 1766, he was succeeded as Maui's king by Kahekili. At about that time, Ke'eaumoku took Kamehamehanui's widow, Namahana, who was Kamehameha's cousin, as his wife. Their daughter, Ka'ahumanu, who would eventually become the favorite wife of Kamehameha I, was born in a cave at the base of Pu'u Kau'iki near Hana, Maui, in 1768 (Kamakau 1992).

In 1775, Kalaniopu'u and his forces from Hana overran the neighboring Kaupo district and raided Molokai, Lanai, Kaho'olawe and parts of West Maui. Kamehameha's efforts at the battle of Kalaeoka'ilio near Kaupo earned him recognition as a great warrior and the name of Pai'ea (meaning hard-shelled crab) from Maui chiefs and warriors. Ka'ahumanu and her parents left Maui for Hawai'i Island during the battles between Kalaniopu'u and Kahekili (Kamakau 1992).

Hawai'i's history took a sharp turn on January 18, 1778 with the arrival of British Capt. James Cook in the islands. On a return trip to Hawai'i 10 months later, with the Maui turmoil still raging, Kamehameha visited Cook aboard his ship the *Resolution* off the east coast of Maui and helped Cook navigate his way to Hawai'i Island (Kamakau 1992). Cook exchanged gifts with Kalaniopu'u at Kealakekua Bay the following January, and Cook left Hawai'i in February. However, Cook's ship then sustained damage to a mast in a severe storm off Kohala and returned to Kealakekua, setting the stage for his death on the shores of the bay (Kuykendall and Day 1976). In 1779, Captain Cook explored the North Kohala area and reported:

As far as the eye could reach, seemed fruitful and well inhabited ... [three and four miles inland, plantations of taro and potatoes and wauke] neatly set out in rows. The walls that separate them are made of the loose burnt stone, which are got in clearing the ground; and being entirely concealed by sugar-canecan planted close on each side, make the most beautiful fences that can be conceived ... [The exploring party stopped six or seven miles from the sea] To the left a continuous range of villages, interspersed with groves of coconut trees spreading along the sea-shore; a thick wood behind this; and to the right, an extent of ground laid out in regular and well-cultivated plantations ... as they passed, they did not observe a single foot of ground, that was capable of improvement, left unplanted (Handy and Handy 1972).

The following year, in 1780, Kalaniopu'u designated his son, Kiwalao, to be his successor, and granted Kamehameha guardianship of the war god Kuka'ilimoku. When it appeared Kiwalao was not honoring his land claims, Kamehameha usurped Kiwalao's

authority with a sacrificial ritual and retreated to his district of Kohala where he farmed the land, growing taro and sweet potatoes (Handy and Handy 1972). Civil war broke out when Kalaniopu‘u died in 1782 and Kiwalao was killed. The wars between Maui and Hawai‘i Island would continue until 1795 (Kuykendall and Day 1976; Handy and Handy 1972, King 1990).

Two American vessels visited Hawaiian waters in 1790. The crew of one of the ships, the *Eleanor*, massacred more than 100 Hawaiians at Olowalu on Maui before leaving crewmember John Young on land. The other vessel, the *Fair American*, was captured off the western coast of Hawai‘i and its entire crew – with the exception of Isaac Davis – was killed. Kamehameha did not take part but kept the *Fair American* as part of his fleet. Young eventually made his way to Hawai‘i Island where he became governor, living at Kawaihae.

By 1796, Kamehameha had conquered every island kingdom except Kauai, but it wasn’t until 1810, after Kaumuali‘i of Kauai pledged his allegiance to Kamehameha, that all of the Hawaiian Islands were unified under a single ruler (Kuykendall and Day 1976).

Kawaihae in South Kohala eventually became one of the royal centers of the island at which Kamehameha resided, and one where he could make use of trade with foreign ships to acquire guns and ammunition. It was also the site of Pu‘ukoholā Heiau, dedicated to the war god Kuka‘ilimoku, which Kamehameha built on the advice of a soothsayer. Subjects came from across Kamehameha’s lands by the thousands to help him build the heiau (Kuykendall 1938). When it was completed in 1791, Kamehameha sent for Keoua, ruler of Ka‘u, who was then killed and placed within the heiau, thus cementing Kamehameha’s rule over Hawai‘i Island.

During this period there was a continuation of the trend toward intensification of agriculture, *ali‘i*-controlled aquaculture, settling of upland areas and development of traditional oral history. The Ku cult, *luakini heiau* and *kapu* system were at their peaks, but the influence of western civilization was being felt in the introduction of trade for profit and a market-system economy (Kirch 1985, Kent 1983). By 1810, the sandalwood trade established by Europeans and Americans twenty years earlier was flourishing. That contributed to the breakdown of the traditional subsistence system, as farmers and fishermen were required to toil at logging which resulted in food shortages and a decline in population (Kuykendall and Day 1976, Kent 1983).

Following the death of Kamehameha I in 1819, the customary relaxing of *kapu* after the death of a ruler took place. But with the introduction of Christianity shortly thereafter, his successor, Kamehameha II, renounced the traditional religion and ordered that *heiau* structures either be destroyed or left to deteriorate (Kamakau 1992). The family worship of ‘*aumakua*’ images was allowed to continue.

Mo‘okini Heiau was deserted in 1832, after which *wauke* (paper mulberry) was cultivated in the interior and *kukui* trees grown in the enclosure which was also overgrown with grass (Napoka n.d).

The Protestant missionaries who arrived from Boston in 1820 soon were rewarded with land and government positions as many of the *ali‘i* were eager to assimilate western-style dress and culture. But at the same time, the sandalwood trade was becoming a heavier burden on commoners, as Ellis noted:

About eleven at night we reached Towaihae [Kawaihae], where we were kindly received by Mr. Young. ... Before daylight on the 22nd, we were roused by vast multitudes of people passing through the district from Waimea with sandal-wood, which had been cut in the adjacent mountains for Karaimoku, by the people of Waimea, and which the people of Kohala, as far as the north point, had been ordered to bring down to his storehouse on the beach, for the purpose of its being shipped to Oahu. There were between two and three thousand men, carrying each from one to six pieces of sandal-wood, according to their size and weight. It was generally tied on their backs by bands of ti leaves, passed over the shoulders and under the arms, and fastened across their breasts (Kukendall and Day 1976, Ellis 1984).

The rampant sandalwood trade resulted in the first Hawaiian national debt, as promissory notes and levies granted by American traders were enforced by American warships (Oliver 1961). The assimilation of Western ways continued with the short-lived whaling industry to the production of sugarcane, which was more lucrative but carried a heavy environmental price.

The Mahele ‘Aina that took place in 1848 placed all land in Hawai‘i into three categories: Crown Lands, Government Lands and Konohiki Lands. Ownership rights were “subject to the rights of the native tenants,” or those individuals who lived on the land and worked it for their subsistence and for their chiefs. No *kuleana* awards for existing house plots or farms of the *maka‘ainana* were awarded on the lease properties.

Sugar cane has an extensive history in North Kohala. Pukui (1983), who notes that Hawaiian proverbs often carry multiple meanings, recounted proverbs about the relationship between sugar cane and the area:

He pa‘a kō kea no Kohala, e koleaika waha ke ‘ai

A resistant white sugar cane of Kohala that injures the mouth when eaten

Pukui's interpretation was thus:

A person that one does not tamper with. This was the retort of Pupukea, a Hawai'i chief, when the Maui chief Makakuikalani made fun of his small stature. It was later used in praise of the warriors of Kohala, who were known for valor (1983).

The second proverb:

I 'ike 'ia no o Kohala i ka pae kō, a o ka pae kō ia kole ai ka waha.

One can recognize Kohala by her rows of sugar cane which can make the mouth raw when chewed.

Pukui's explanation:

When one wanted to fight a Kohala warrior, he would have to be a very good warrior to succeed. Kohala men were vigorous, brave, and strong (1983).

Sugar cane served a variety of uses. The *kō kea* or white cane was the most common, usually planted near Hawaiian homes for medicinal purposes, and to counteract bad tastes. Sugar cane was used as a snack, condiment and famine food; it was fed to nursing babies and helped to strengthen children's teeth through the act of chewing (Handy and Handy 1972). It was used as a substitute for the thatching of houses when *pili* grass (*Heteropogon contortus*) or *lau hala* (*Pandanus tectorius*) were not available (Malo 1951). Sugar cane was also planted in conjunction with taro and sweet potato (Handy and Handy 1972):

In wet-taro farming, cane was planted along the embankments separating the flooded terraces and flats. In dry-taro and sweet-potato fields on the sloping *kula* or in the lower forest zone, cane was planted as hedges along the lines of stone and rubbish thrown up between the fields. Thus it helped the planter to utilize to the maximum his soil and water, and acted as a windbreak against the gusty breezes which blow in most valley bottoms, along the coasts, and on the uplands where taro is grown.

The first documented commercial production of sugar in post-Western contact times was by the Chinese on Lana'i in 1802. Commercial sugar production would not occur until 1835 when it began replacing the waning sandalwood industry (Oliver 1961, Kuykendall and Day 1976). Sugar became part of Kohala's economy with the arrival of American missionary Elias Bond (KTF 1975). In 1860, the Rev. Bond enlisted the help of Samuel N. Castle in founding the Kohala

Sugar Company on lands owned by Bond and his neighbor, Dr. James Wight. The first crop was harvested in January 1865 (KTF 1975). As Tomonari-Tuggle notes:

The arrival in 1841 of Elias Bond, of the Protestant American Board of Commissioners for Foreign Missions, to Kohala marked the beginning of a 22-year period of transition in the district's history. In those years a new religion, a new land tenure system, and a changing economy altered the lifestyles and world view of the indigenous population of the district. The Kohala community was in flux, attempting to find a firm footing in a changing world, in a much larger network of social, political, and economic interactions than had previously existed.

When Elias Bond directed his efforts to initiating sugar as a major agricultural industry in Kohala, he could not have foreseen the incredible success of his modest venture. His primary concern was to develop a means for the Hawaiian people of the district to compete successfully in the market economy that had evolved in Hawaii. What resulted was a vigorous, stable, and competitive industry which survived over a century of changing economic situations. For the Hawaiian people, however, the impact was not what Bond anticipated. (Tomonari-Tuggle 1988)

The history of Kohala from the 1870s on was largely the history of sugar cane. The sugar industry flourished in Kohala, as elsewhere in Hawai'i. Tens of thousands of laborers were brought in from Asia, Europe, the Americas, Oceania, and Africa to work on the many plantations and mills that were being established on all major islands (Oliver 1961). The result was a radical change of the culture and drastic alteration of agriculture land and the destruction of traditional archaeological sites.

In 1873 the English born Robert Robson Hind moved to Kohala from Maui to invest in the booming sugar industry. He purchased land in the flat plains of Pūehuehu west of Kohala Sugar Company, and although rainfall was less than ideal, he established the Union Mill. Months prior to formal opening in 1874, a fire broke out destroying the mill. The mill was rebuilt just in time to harvest and process its first crops. Again in 1878, another fire broke out, destroying the rebuilt mill. Shortly thereafter, Hind sold the mill to James Renton, Daniel Vida, Theo H. Davies & Co., and the brothers Clement (Cecil) and Ralph Sneyd Kynnersley. These independent growers organized themselves and started the Pūehuehu Plantation Company, and were later joined by the Pūehuehu Agricultural Company in 1910. In 1905, Henry Renton took over management of the mill. Most of the mill's 280 employees were of Japanese descent. During this time the mill was harvesting 1,260 acres of cultivated sugar. In 1932, the Union Mill was joined with the Niuli'i Mill and Plantation, under Robert Lindsey. At its peak the mill cultivated three thousand acres,

only one-fifth of which was leased (Schweitzer 2003). The Union Mill was purchased by the Kohala Mill in 1937, the cane harvested from the former Union Mill planting fields was then transferred to Hala'ula for processing.

During the late 19th century sugar planters constructed a railroad to transport sugar to market. By 1883 the railroad stretched almost 20 miles from Niuli'i in the far east of Kohala to Mahukona, the sugar port on the dry leeward coast. The railroad hauled cane for more than six decades, finally ceasing operations in 1941. The old right-of-way for the railroad traverses the leased properties as a separate parcel owned by the State of Hawai'i (see Appendix 3, Figure 2). Commercial sugar cane itself had only another three decades of life in North Kohala. The last company with sugar plantations in Kohala announced the end of production in March of 1971, terminating 516 employees and drastically altering the socioeconomic of the district (Schweitzer 1973: 178).

The drier portions of Kohala from Hawi westward had become largely government land after the Mahele. The Kohala Ditch and the economies of scale of sugar cane production allowed these lands to be used by both large and small farmers for sugar cane. The leased properties appear to have had a history of sugar cane cultivation. Ho'ea Mill, erected in 1909 about a mile east, appears to have been the sugar mill closest to the leased properties. A photograph of Ho'ea Mill from 1929 shows sugar cane fields extending from the mill far to the west *mauka* of Upolu Point (Schweitzer 1973).

The drier leeward portions of Kohala where irrigation was not possible were not suited for sugar cane cultivation but became vast pasturelands for grazing cattle. Large landholdings such Kahuā Ranch, Kohala Ranch, Pu'uhue Ranch and others flourished for periods and struggled in others. The most famous ranch on the island, Parker Ranch, gradually acquired land in North Kohala. Today, grazing land uses predominate in the State, Kamehameha Schools and other private agricultural lands west of the dairy lease lands.

Cultural and Archaeological Resources, Impacts and Mitigation Measures

The Proposed Action is an unusual situation for an Environmental Assessment in that it represents simply a continuation of existing uses in the same location. As stated in Section 1.2, the Proposed Action is for the BLNR to issue a new direct lease for all of the properties currently under lease to Boteilho Hawaii Enterprises for continued use as a dairy operation for a term of 30 years to allow all dairy uses on all lease properties. The only new operations or facilities would minor: the growing and chopping of forage in areas where only pasture uses are currently allowed, and new, minor internal access, irrigation and structural improvements.

Although all land in Kohala is rich in cultural associations, and notwithstanding the presence of cultural sites such as Mookini Heiau and Kamehameha's birth site (about 4,000 feet to the west of the dairy), no historic or cultural sites appear to be present on or directly adjacent to the dairy lease lands. No known archaeological sites or other historic properties that have been listed in the Hawai'i Register of Historic Places or noted in any archaeological inventory surveys appear to be present. There are no natural resources of a potential traditional cultural nature, such as famous groves of trees, *pu'u* with legendary associations, springs or other waters, or similar resources. There is no evidence of any traditional gathering uses or other cultural practices on this pasture land, which has been extensively disturbed by decades of agricultural activity. Gathering and other cultural activities may occur on the shoreline, but this area is separated from active uses on the dairy by a road and a fence. Public access to historic or cultural sites has always been respected by the dairy and no adverse effects will occur.

In sum, because the Proposed Action represents the continuation of an existing dairy operation, and because future development activities are not anticipated, impacts to cultural resources or activities are very unlikely to occur. If expansion of existing facilities or construction of new facilities occur within the dairy lease lands, any archaeological resources or human remains that may be encountered would result in the immediate halt of work and SHPD would be contacted as outlined in Hawai'i Administrative Rules 13§13-275-12. The Office of Hawaiian Affairs and State Historic Preservation Division were supplied a copy of the Draft EA for their comment on these findings. No comments on the Draft EA from these or other parties indicating such practices or properties were received.

3.2.3 Agricultural Impacts

Existing Resources

The major agricultural products in North Kohala currently are cattle, nursery products and macadamia nuts. Farming and grazing operations occur on the agricultural lands surrounding the dairy lease lands.

Agricultural activity in Kohala is likely to accelerate in the near future due to synergistic effects of securing repairs to the Kohala Ditch, assembly of land for coordinated agricultural production, and various other initiatives. Recent developments include the purchase of more than 500 acres of private land that was formerly part of Kohala Surety by German industrialist and *SunFuels Hawaii* owner Michael Saalfeld, who is developing what has been described as a non-profit agricultural park in the area. The Ho'ea Agricultural Park will allow farmers to grow crops and raise livestock without the large overhead associated with owning and maintaining a farm, by offering long-term land license agreements, mentor for youth and provide access to affordable water and energy (*West Hawaii Today* 9/27/2010).

The Hawai‘i State Department of Agriculture (DOA) has obtained Executive Orders for former grazing land and intends to actively develop more agricultural uses. This agency has also lobbied for laws that facilitate development of shared water and power sources for diversified agriculture in North Kohala, including rehabilitation of the Kohala Ditch. These activities, if successful, will increase land use intensity, economic activity, traffic, and water consumption (although most water will be agricultural, from sources such as the Kohala Ditch) (McNarie 2008; Kunimoto 2009).

Impacts

The Proposed Action would facilitate continued agricultural use of the property in conformance with its designated agricultural zoning. It would help preserve diversified agriculture and providing agricultural jobs. As long as the Kohala Ditch remains operational, there is sufficient agricultural water for a number of ventures in the area, and maintaining dairy operations here does not pose an impediment to other agricultural operations, present or future. The continuation of this dairy may assist other value-added milk industries on the Big Island. It will also continue the innovation in dairying methods specific to Hawai‘i that Mr. Boteilho has practiced. Furthermore, it will assist in maintaining economies of scale for purchases of dairy-specific equipment, supplies and services for other dairy industries that may wish to begin operations. Most importantly, the dairy will continue to supply fresh milk to the residents of the State of Hawai‘i.

3.3 Infrastructure

3.3.1 Utilities and Public Services

Existing Facilities and Services, Impacts and Mitigation Measures

Electrical power to the dairy operations is supplied to the project area by Hawai‘i Electric Light Company (HELCO), a privately owned utility company regulated by the State Public Utilities Commission. Telephone service is supplied from Hawaiian Telcom. The dairy utilizes potable water from the Hawai‘i County Department of Water Supply but is supplied most of its water in the form of agricultural water from the Kohala Ditch and a system of reservoirs and irrigation pipes. Fire, police and emergency medical services are available to the area from the North Kohala Fire Station and Police Station, which are located about three miles to the east on Akoni-Pule Highway in Kapa‘au. No sanitary sewer system or other wastewater treatment is available on or near the project site. An individual wastewater system (IWS) meeting the requirements of the Department of Health is in use at the dairy. Wastewater from the dairy operations is dealt with in Section 3.1.2, above. The Proposed Action would not have any substantial impact on existing utilities or public services.

3.3.2 Transportation

Existing Facilities

The primary dairy access is on Upolu Point Road, which is maintained by the State of Hawai‘i as State Highway 271 (see Appendix 3, Figure 3). Traffic is very light on this road, which provides access to a few private properties, the infrequently used Upolu Airport, and coastal and cultural sites to the west of the airport. Upolu Point Road connects to Akoni Pule Highway, a two-lane secondary highway also known as State Route 270. Most of the minor dairy entrance points are on Upolu Point Road, but there is also one gate on Akoni Pule Highway, and the entrance to the Kokoiki section of the dairy, which is separated from and to the west of the other properties that make up the dairy, via a driveway on Kokoiki (also known as Woodhouse) Road, which also connects to Akoni Pule Highway.

Project Traffic Characteristics, Impacts and Mitigation Measures

As it is a continuation of existing uses, the Proposed Action will not increase traffic along Akoni Pule Highway, Upolu Point Road or Kokoiki Road. No new accesses are planned.

3.4 Secondary and Cumulative Impacts

The Proposed Action is minor and represents a continuation of existing uses of agricultural land and does not appear to have the potential to involve any secondary impacts, such as population changes or effects on public facilities.

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. The adverse effects of the Proposed Action are very limited in severity, nature and geographic scale. At the current time there are few projects being undertaken in the area that would combine in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.

At the current time, according to review of projects in the OEQC *Environmental Notice* and other sources, the following projects are occurring in this area of North Kohala:

- *Agricultural Park development on private and State land in Hawi.* As discussed in Section 3.2.3 above, a non-profit agricultural park of at least 500 acres is being developed in the area. This combined with Hawai‘i State Department of Agricultural initiatives also discussed above are expected to lead to greatly expanded agricultural activity in this part of North Kohala over the next twenty years, if these efforts are successful.

- *North Kohala Solid Waste Transfer Station relocation.* The County of Hawai‘i Department of Environmental Management (DEM) has been attempting to identify a site for a relocated recycling and transfer station. Sites under examination are all centered around Akoni Pule Highway. The existing station at Ka‘auhuhu is undersized and has poor access (T. Gloor, Hawai‘i County DEM, pers. comm. to R. Terry, 2010).
- *Kynnersley Reservoirs.* The County of Hawai‘i, Department of Water Supply (DWS), plans to demolish a 0.1 million gallon (MG) steel water tank on one DWS property on Kynnersley Road and replace it with a 0.3 MG reinforced concrete reservoir on an adjacent DWS property. Also included are water level control facilities, electrical work for the SCADA (supervisory control and data acquisition) system, site piping, site asphalt paving, perimeter fencing and a paved driveway. The project will also demolish an existing 0.05 MG unused tank on a cane camp subdivision lot lower down on Kynnersley Road and restore the site.

Because of their distance from the dairy lease lands sites and their scale and nature, none of these projects has the type of impacts that would combine with those of the continued dairy operations in such a way as to produce adverse cumulative effects.

3.5 Required Permits and Approvals

The Proposed Action requires granting of a Direct Lease of State Lands, which would supersede three existing leases (General Leases Nos. S-5572, S-5574 and S-4950). No other permits or approvals appear to be necessary.

3.6 Consistency With Government Plans and Policies

3.6.1 Hawai‘i State Plan

Adopted in 1978 and last revised in 1991 (Hawai‘i Revised Statutes, Chapter 226, as amended), the Plan establishes a set of themes, goals, objectives and policies that are meant to guide the State’s long-run growth and development activities. The three themes that express the basic purpose of the *Hawai‘i State Plan* are individual and family self-sufficiency, social and economic mobility and community or social well-being. The Proposed Action would promote these goals by continuing agricultural activity in the North Kohala district, thereby enhancing quality-of-life and economic and social well-being.

3.6.2 Hawai‘i County General Plan, Zoning, and SMA

The *General Plan* for the County of Hawai‘i is a policy document expressing the broad goals and policies for the long-range development of the Island of Hawai‘i. The plan last

revised and adopted in 2005 (Hawai'i County Planning Department). The *General Plan* is organized into thirteen functional elements. The Proposed Action would be consistent with the goals, policies and objectives, standards, and principles for several functional areas.

Economic Element

Goals:

- Provide residents with opportunities to improve their quality of life through economic development that enhances the County's natural and social environments.
- Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawaii.
- Strive for diversity and stability in the economic system.
- Provide an economic environment that allows new, expanded, or improved economic opportunities that are compatible with the County's cultural, natural and social environment.
- Strive for an economic climate that provides its residents an opportunity for choice of occupation.
- Strive for diversification of the economy by strengthening existing industries and attracting new endeavors.
- Strive for full employment.

Policies:

- Assist in the expansion of the agricultural industry through the protection of important agricultural lands, development of marketing plans and programs, capital improvements and continued cooperation with appropriate State and Federal agencies.
- The land, water, air, sea, and people shall be considered as essential resources for present and future generations and should be protected and enhanced through the use of economic incentives.
- Identify and encourage primary industries that are consistent with the social, physical, and economic goals of the residents of the County.
- Assist the further development of agriculture through the protection of important agricultural lands.
- Assist in the promotion of the agriculture industry whose products are recognized as being produced on the island of Hawaii.

Economic Element: North Kohala District

Courses of Action:

- Aid in the expansion of agriculture through the protection of important agricultural lands.
- Support efforts to promote small business development that is consistent with the rural, agricultural, and historic character of the area.
- Assist the communities and residents in diversifying the economic base in ways that are consistent with the rural, agricultural, and historic character of North Kohala.

Discussion: The Proposed Action will allow the existing dairy to continue its operation for a longer term and in a more efficient manner, thereby furthering the Economic goals of the General Plan. The operation provides jobs and helps to diversify Hawai‘i Island’s economy.

Land Use Element – In General:

Goals:

- Designate and allocate land uses in appropriate proportions and mix and in keeping with the social, cultural, and physical environments of the County.
- Protect and encourage the intensive and extensive utilization of the County’s important agricultural lands.

Land Use – Agriculture

Goals:

- Identify, protect and maintain important agriculture lands on the island of Hawaii.
- Preserve the agricultural character of the island.
- Preserve and enhance opportunities for the expansion of Hawaii’s Agricultural Industry.

Policies:

- Implement new approaches to preserve important agricultural land.
- Coordinate and encourage efforts to solve the problems of the agricultural industry in the County of Hawaii.
- Designate, protect and maintain important agricultural lands from urban encroachment.
- Ensure that development of important agricultural land be primarily for agricultural use.
- Assist in the development of agriculture.

Discussion: The Proposed Action will help preserve desirable diversified agriculture on the island, preserving the agricultural character of the island and district and helping to protect agricultural lands from other uses.

Natural Beauty Element

Goals:

- Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.
- Protect scenic vistas and view planes from becoming obstructed.
- Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

Policies:

- Consider structural setback from major thoroughfares and highways and establish development and design guidelines to protect important viewplanes.
- Protect the views of areas endowed with natural beauty by carefully considering the effects of proposed construction during all land use reviews.
- Do not allow incompatible construction in areas of natural beauty.

Discussion: The Proposed Action does not include new construction and will not affect scenic vistas. The continued operation of the dairy will preserve existing open space.

Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG) and Facilities Map.

These components of the *General Plan* are graphic representations of the Plan's goals, policies, and standards as well as of the physical relationship between land uses. They also establish the basic urban and non-urban form for areas and the planned public and cultural facilities, public utilities and safety features, and transportation corridors. The project site is classified as Important Agriculture Land in the LUPAG. The Proposed Action is consistent with this designation. Such lands are those with better potential for sustained high agriculture yields because of soil type, climate, topography, or other factors.

Zoning

The dairy lease lands are designed by Hawai'i County as Ag-20 (agriculture, with a 20-acre minimum lot size). The existing use is in keeping with that designation.

Special Management Area

The SMA area includes an area near the coast covering all of TMKs 5-5-006:004 and 015. However, since no development is planned for the area, an SMA permit is not required.

3.6.3 North Kohala Community Development Plan

The North Kohala Community Development Plan encompasses the judicial district of North Kohala, and was developed under the framework of the February 2005 County of Hawai'i General Plan. Community Development Plans are intended to translate broad General Plan Goals, Policies, and Standards into implementation actions as they apply to specific geographical regions around the County. CDPs are also intended to serve as a forum for community input into land-use, delivery of government services and any other matters relating to the planning area. The General Plan now requires that a Community Development Plan shall be adopted by the County Council as an "ordinance," giving the CDP the force of law. This is in contrast to plans created over past years that were adopted by "resolution" and therefore served only as guidelines or reference documents to decision-makers. In November 2008, the North Kohala CDP was adopted by the County Council. The version referenced in this Environmental Assessment is at: <http://hawaiicountycdp.info/north-kohala-cdp>.

The purposes of the North Kohala CDP are to:

- Articulate North Kohala's residents' Vision and Values for their Community
- Identify North Kohala's residents' Priority Issues to be addressed by the CDP
- Develop Strategies and Action Programs to address those Priority Issues

The CDP states that its goal is:

To manage the future growth of the district in a manner that is consistent with the Kohala lifestyle and ideals of being a rural community with a strong cultural heritage, an agricultural base, and a small town feel.

The CDP, with a theme of "Keep Kohala, Kohala," describes the district as a "Cultural and Historical Preservation Community" and emphasizes that all development decisions "shall be required to assess and disclose their potential impact on cultural sites and resources within the district, and shall be in keeping with the heritage and culture of North Kohala."

The plan notes on Page 13 and in other sections that agriculture has a long tradition in North Kohala and should be continued to be supported and promoted.

The Proposed Action is compatible with the plan's following Key Policies, as found beginning on Page 22:

1. **Cultural and Historical Preservation Community** – All future land use decisions for North Kohala shall be in keeping with the heritage and cultural significance of Kohala.
2. **Rural Character** – Recognize North Kohala as a Rural Community that should not experience significant urban/suburban development that impacts population growth.

It is also in keeping with the goal of directing growth toward existing town centers to preserve the District's open space and to promote agriculture. More specifically, it is in keeping with Strategy 1.4 which calls for the promotion and support a community of diversified agriculture. The plan notes:

Many residents see diversified agriculture as one of the best options for creating jobs and local businesses, since it utilizes Kohala's natural resources (fertile soils, availability of water), helps increase the community's self-sufficiency, and protects its rural character (Page 34).

The Proposed Action is also in keeping with Strategy 1.8:

Participate in the identification of Important Agricultural Lands as established by Chapter 205-47, Hawaii Revised Statutes to ensure that appropriate lands are identified and protected.

The project site has already been designated as Important Agriculture Land and the Proposed Action will maintain its use in agriculture.

The Proposed Action will also help further Strategy 1.9 which calls for the protection of view planes, particularly those along Kohala Mountain Road and Akoni-Pule Highway. The continued operation of the dairy will help maintain that strategy by keeping the project sites both *mauka* and *makai* of Akoni-Pule Highway as open space that will not impede viewplanes.

3.6.4 Hawai'i State Land Use Law

All land in the State of Hawai'i is classified into one of four land use categories – Urban, Rural, Agricultural, or Conservation – by the State Land Use Commission, pursuant to Chapter 205, HRS. Almost all of the 880 acres of the dairy lease lands are within the State Land Agricultural District. The proposed use is consistent with intended uses for this land use district. About 15 acres on the *makai*-most lot is within the Conservation District (see Appendix 3, Figure 2). Aside from fences, no facilities are present in this

area, much of which is located *makai* of the lowest pasture and not used by the dairy for any purpose. *Mauka* of the fence grazing takes place, which is a legal, non-conforming use on the property.

PART 4: DETERMINATION

The Hawai'i State Department of Land and Natural Resources has determined, based on the findings below, and upon consideration of comments to the Draft EA, that the proposed project will not significantly alter the environment and that impacts will be minimal. The agency has issued a Finding of No Significant Impact (FONSI).

PART 5: FINDINGS AND REASONS

Chapter 11-200-12, Hawai'i Administrative Rules, outlines those factors agencies must consider when determining whether an Action has significant effects:

1. *The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* No valuable natural or cultural resources would be committed or lost. The project site already has an active dairy operation. No significant cultural resources are present or will be affected by continuing operations.
2. *The proposed project will not curtail the range of beneficial uses of the environment.* The Proposed Action expands and in no way curtails beneficial uses of the environment.
3. *The proposed project will not conflict with the State's long-term environmental policies.* The State's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The Proposed Action is minor and fulfills aspects of these policies calling for an improved economic environment. It is thus consistent with all elements of the State's long-term environmental policies.
4. *The proposed project will not substantially affect the economic or social welfare of the community or State.* The Proposed Action will not adversely affect the social welfare of the community and will contribute to the economy.
5. *The proposed project does not substantially affect public health in any detrimental way.* The Proposed Action will not affect public health in any way; wastewater is properly and appropriately treated.
5. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.* No adverse secondary effects are expected to result from the Proposed Action.
7. *The proposed project will not involve a substantial degradation of environmental quality.* The Proposed Action is ongoing and minor and has not or would not contribute to environmental degradation.

8. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* The project site supports non-native vegetation associated with an active dairy. Impacts to rare, threatened or endangered species of flora or fauna will not occur.
9. *The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* The Proposed Action is not related to other activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.
10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* The Proposed Action may generate noise and dust typical of agricultural activities, but no adverse effects on air quality or noise would occur.
11. *The project does not affect nor would it likely to be damaged as a result of being located in environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area.* Although the property is located in an area with seismic risk, the entire Island of Hawai‘i shares this risk, and the Proposed Action is not imprudent to undertake.
12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* No scenic vistas and viewplanes identified in the Hawai‘i County General Plan will be adversely affected by the Proposed Action.
13. *The project will not require substantial energy consumption.* The Proposed Action involves only minor energy use and no adverse effects are expected.

For the reasons above, the Proposed Action will not have any significant effect in the context of Chapter 343, Hawai‘i Revised Statutes and section 11-200-12 of the State Administrative Rules.

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ENVIRONMENTAL ASSESSMENT

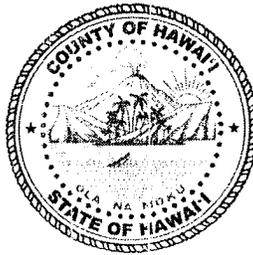
BOTEILHO LEASE OF STATE LAND
FOR DAIRY PURPOSES

APPENDIX 1a

LETTERS IN RESPONSE TO EARLY CONSULTATION

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William P. Kenoi
Mayor



Warren H. W. Lee
Director

William T. Takaba
Managing Director

County of Hawai'i
DEPARTMENT OF PUBLIC WORKS
Aupuni Center
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November 15, 2010

Ron Terry, Principal, Geometrician Associates
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hi. 96721

Subject: Environmental Assessment Preparation Notice
Boteilho Hawaii Enterprises Lease of State Land for Dairy Purposes
Location: Opihipau, Hukiaa and Kokoiki, North Kohala, Island of Hawaii
TMK: 5-5-003:004,005, 006 & 5-5-005:001 & 5-5-006:002,003,004,015.

We reviewed the subject dated October 30, 2010. A portion of the property on TMK: 5-5-006:004 appears to be within Flood Zone VE on the Flood Insurance Rate Map. New construction and substantial improvements must comply with Chapter 27 Flood Plain Management of Hawaii County Code. Please identify the flood zones on the site plan exhibits. If you have any questions, please contact Kiran Emler of our Kona office at 327-3530.

Ben Ishii, Acting Division Chief
Engineering Division

KE
c: ENG - HILO/KONA
Planning Director

William P. Kenoi
Mayor



Harry S. Kubojiri
Police Chief

Paul K. Ferreira
Deputy Police Chief

County of Hawai'i

POLICE DEPARTMENT

349 Kapi'olani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-2389

November 5, 2010

Mr. Ron Terry
Principle
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawaii 96720

Dear Mr. Terry:

Subject: Environmental Assessment for Boteilho Hawaii Enterprises
Lease of State Land For Dairy Purpose, Opihipau, Hukiaa and
Kokoiki, North Kohala, Island of Hawaii

This responds to your October 30, 2010, letter requesting comments regarding the Environmental Assessment of the above-referenced properties for continued use as a dairy operation.

We have reviewed the assessment and have no comments or objections to offer at this time.

Should you have any questions, please contact Captain Richard Miyamoto, Commander of the North Kohala District, at 889-6540.

Sincerely,

HARRY S. KUBOJIRI
POLICE CHIEF



HENRY D. TAVARES JR.
ASSISTANT POLICE CHIEF
AREA II OPERATIONS

RM:dmv
RS100870

LINDA LINGLE
GOVERNOR OF HAWAII



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

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EPO-I-3418

November 5, 2010

Mr. Ron Terry, Principal
Geometrician Associates, LLC
P.O. Box 396
Hilo, Hawaii 96721

Dear Mr. Terry:

SUBJECT: Environmental Assessment for Boteilho Hawaii Enterprises Lease of State Land for Dairy Purposes, Opihipau, Hukiaa and Kokoiki, North Kohala, Island of Hawaii
TMKs: (3)5-5-003: 4,5,6; 5-5-005:1; and 5-5-006:2,3,4 & 15

Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have no comments at this time, but reserve the right to future comments. We strongly recommend that you review all of the Standard Comments on our website:
www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this application should be adhered to.

The same website also features a Healthy Community Design Smart Growth Checklist (Checklist). The Hawaii State Department of Health, Built Environment Working Group, recommends that State and county planning departments, developers, planners, engineers and other interested parties apply the healthy built environment principles in the Checklist whenever they plan or review new developments or redevelopments projects. We also ask you to share this list with others to increase community awareness on healthy community design.

If there are any questions about these comments please contact the Environmental Planning Office at 586-4337.

Sincerely,

A handwritten signature in cursive script that reads "Genevieve Salmonson".

GENEVIEVE SALMONSON, Acting Manager
Environmental Planning Office

LINDA LINGLE
GOVERNOR



MICHAEL D. FORMBY
INTERIM DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
JIRO A. SUMADA

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

HAWAII DISTRICT
50 MAKAALA STREET
HILO, HAWAII 96720
TELEPHONE: (808) 933-8866 • FAX: (808) 933-8869

IN REPLY REFER TO:

HWY-H 10-2.0491

November 15, 2010

Mr. Ron Terry
Principal
Geometrician Associates, LLC
HC 2 Box 9575
Keaau, Hawai'i 96749

Dear Mr. Terry:

SUBJECT: Environmental Assessment for Boteilho Hawaii Enterprises
Lease of State Land for Dairy Purposes
T.M.K. 3rd Div. 5-5-003:004,005 & 006, 5-5-005:001, 5-5-006:002,003, 004, 015
Project No. FAP 27A(1)
Route 270, Akoni Pule Highway
Opihipau, Hukiaa and Kokoiki, North Kohala, Island of Hawai'i, Hawai'i

Please be informed that this section of Akoni Pule Highway is under the jurisdiction of the Department of Transportation, Highways Division. Please include in the assessment the exact location of the vehicle access driveway being utilized, its existing condition, and a detailed description of the operation and any plans for expansion.

Please send copies of the Environmental Assessment to our Department for review and comment.

Our Department will then further distribute the copies to the appropriate divisions and branches at which time we will review and provide comments. After all comments are received and coordinated, a response from the director will be sent to the County Department approving agency.

Mr. Ron Terry
November 15, 2010
Page 2

HWY-H 10-2.0491

Please note that at this time we will not be able to provide comments without pre-empting the departmental response.

If you have any questions please call Mr. Clinton Yamada at (808) 933-1951.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Stanley M. Tamura', with a stylized flourish at the end.

STANLEY M. TAMURA
Hawai'i District Engineer



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

COPY

HRD10/5369

November 23, 2010

Ron Terry
Geometrician Associates
P.O. Box 396
Hilo, Hawai'i 96721

**Re: Pre- Draft Environmental Assessment
Lease of State lands for continued dairy operations
North Kohala, Island of Hawai'i**

Aloha e Ron Terry,

The Office of Hawaiian Affairs (OHA) is in receipt of your October 30, 2010 request for comments ahead of on a draft environment assessment (DEA) to support the proposed lease of multiple parcels (parcels) encompassing approximately 879.5 acres of land for the continued dairy operations of Boteilho Hawaii Enterprises' Clover Leaf Dairy (dairy). Based on the information within your letter, the parcels are under the control of the Department of Land and Natural Resources with the dairy operating under leases issued by the Board of Land and Natural Resources (BLNR). The leases will expire on various dates in 2019 and 2020. The DEA will be the primary document to support the BLNR consideration of extending the existing leases an additional 30 years. Because the use of State lands is proposed, a DEA in compliance with Chapter 343, Hawaii Revised Statutes is required.

In general OHA recognizes the need of the dairy to secure long term leases to support operations. One of the fundamental objectives of the State Agricultural Function Plan (1991) is to encourage and develop diversified agriculture throughout Hawai'i which will support our local economy and contribute to reducing our dependence on imported products. We firmly believe this objective can be obtained and dairy operations such as this one have the potential to be sustainable endeavors. We look forward to seeing this potential fully achieved.

The dairy has been in operation in North Kohala since 1985 and currently has approximately 800 head of cows. It is our understanding milk is currently trucked each day to Hilo for processing at a Meadow Gold Dairy facility. It is unclear whether securing long term leases will result in the expansion of dairy operations and construction of new facilities. OHA is aware that in some cases, dairy operations require large amounts of water for facilities sanitization resulting in a significant amount of wastewater discharge. The dairy is situated within a traditional cultural landscape which includes the Kukuipahau and Mo'okini Heiau

Ron Terry
Geometrician Associates
November 23, 2010
Page 2 of 2

complexes and the Kamehameha I birth site at Kokoiki. If possible, the DEA should provide appropriate discussion on these issues.

We look forward to reviewing the DEA. Thank you for initiating consultation at this early stage. Should you have any questions or concerns, please contact Keola Lindsey at 594-0244 or keolal@oha.org.

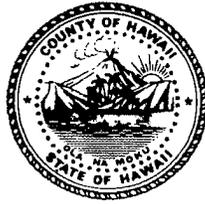
'O wau iho nō me ka 'oia'i'o,



Clyde W. Nāmu'o
Chief Executive Officer

C: OHA- West Hawai'i Community Resources Coordinator

William P. Kenoi
Mayor



BJ Leithead Todd
Director

Margaret K. Masunaga
Deputy

County of Hawai'i

PLANNING DEPARTMENT

Aupuni Center • 101 Pauahi Street, Suite 3 • Hilo, Hawai'i 96720
Phone (808) 961-8288 • Fax (808) 961-8742

November 29, 2010

Mr. Ron Terry
Geometrician Associates LLC
P.O. Box 396
Hilo, HI 96721

Dear Mr. Terry:

SUBJECT: Pre-Consultation on Environmental Assessment
Landowner: State of Hawaii
Project: Lease of State Land for Dairy Operation
TMK: 5-5-3:4-6; 5-5-5:1 and 5-5-6:2-4 & 15, North Kohala, Hawai'i

This is in regards to your letter dated October 30, 2010, requesting our comments for an Environmental Assessment on the above referenced project.

We note the following for these eight parcels:

Parcel	Acreeage	State Land Use Designation	County Zoning	General Plan Designation	SMA
5-5-3:4	136.94	Agricultural	A-20a	Agriculture	No
5-5-3:5	31.78	Agricultural	A-20a	Agriculture	No
5-5-3:6	39.1	Agricultural	A-20a	Agriculture	No
5-5-5:1	74.268	Agricultural	A-20a	Agriculture	No
5-5-6:2	44.5	Agricultural	A-20a	Agriculture	No
5-5-6:3	404.12	Agricultural	A-20a	Agriculture	No
5-5-6:4	146	Agricultural/Conservation	A-20a	Agriculture/Open	Yes
5-5-6:15	16.06	Agricultural	A-20a	Agriculture/Open	Yes

1. For areas that are designated Conservation by the State Land Use Commission, there is no County zoning per se.

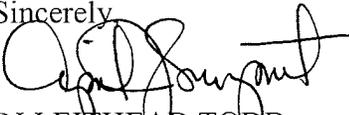
Mr. Ron Terry
Geometrician Associates LLC
November 29, 2010
Page 2

2. The North Kohala Community Development Plan was adopted by the County of Hawaii as Ordinance No. 08-151, effective November 5, 2008. A discussion of the proposed project as it relates to this plan should be included in the Environmental Assessment. In particular, natural and cultural resources as well as public access, lateral and mauka-makai, and trails should be addressed.
3. The Board of Land and Natural Resources and the County of Hawai'i entered into a memorandum of understanding (MOU) with the National Park Service for cooperative implementation, management and protection of the Ala Kahakai National Historic Trail. This is a proposed 175-mile system of coastal trails within a shoreline trail corridor that affects some of the parcels. Therefore, you should consult with the Ala Kahakai National Historic Trail regarding implementation of the trail's Comprehensive Management Plan for these areas.
4. Although two parcels are located within the County's Special Management Area (SMA), only TMK: 5-5-6:4 has frontage along the ocean.
5. Permits required for parcels in the SMA:
 - a. A Special Management Area Use Permit Assessment Application will be required for any proposed activities or structures on these parcels.
 - b. A current certified shoreline survey and a Shoreline Setback Variance may be required for activities or structures proposed within a minimum 40 feet of the shoreline.

Thank you for the opportunity to provide preliminary comments. Please provide us with a copy of the Draft Environmental Assessment for our review and file.

If you have questions, please contact Esther Imamura of this office at 961-8139.

Sincerely,


BJ LEITHHEAD TODD
Planning Director

ETI:cs

P:\Public\Wpwin60\ETI\Eadraftpre-Consul\Terry Boteilho Dairy 5-5-3 5 & 6.Rtf

cc: Planning Department – Kona
Mr. Alan Salavea, Kona Planning

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ENVIRONMENTAL ASSESSMENT
BOTEILHO LEASE OF STATE LAND
FOR DAIRY PURPOSES

APPENDIX 1b

COMMENTS TO DRAFT E.A. AND RESPONSES

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United States Department of Agriculture



Natural Resources Conservation Service
P.O. Box 50004 Rm. 4-118
Honolulu, HI 96850
808-541-2600

February 9, 2011

Ron Terry
Geometrician Associates
P.O. Box 396
Hilo, HI 96721

Dear Mr. Terry,

Thank you for providing the Natural Resources Conservation Service (NRCS) the opportunity to review the Draft Environmental Assessment for Boteilho Lease of State Land for Dairy Purposes. We have confined our comments to issues within the purview of NRCS, specially those related to soil properties that are typically used to assess the quality of land for agriculture.

The information generated from the Web Soil Survey indicate the soils within the project area are well drained, none fall into the hydric category, and have a Farmland Classification of Prime Farmland if irrigated (except for small areas with a steep slope ranging from 20 to 35 percent slopes). The Hawi soils have a saturated hydraulic conductivity ranking of moderately high to high throughout the soil profile and a depth to a restrictive feature greater than 80 inches from the soil surface. The Kohala soils have a saturated hydraulic conductivity ranking of very low to moderately high throughout the soil profile and a depth to a restrictive feature from 35 to 60 inches from the soil surface.

The attached soil report provides selected soil properties and limitations. These limitation do not preclude the intended land use, but serve to identify potential concerns for use and management.

The NRCS Soil Survey is a general planning tool and use of information therein does not eliminate the need for an on-site investigation.

Helping People Help the Land

An Equal Opportunity Provider and Employer

If you have any questions concerning the related quality, limitations and suitabilities ratings for the soils in the project area, please contact Dr. Cynthia Stiles, Assistant State Soil Scientist, by phone (808) 541-2600 x129 or by email cynthia.stiles@hi.usda.gov.

Sincerely,



LAWRENCE T. YAMAMOTO
Director
Pacific Islands Area

Attachments: Custom Soil Resource Report for Island of Hawaii Area, Hawaii
Boteilho Dairy – Area 1 HQ
Custom Soil Resource Report for Island of Hawaii Area, Hawaii
Boteilho Dairy – Area 2 Kokoiki Section

cc: Edwin Muniz, Acting Asst. Director SS & NRA, Pacific Islands Area State Office
Wesley Matsunaga, Hawaii State Dept. of Land & Natural Resources, Hilo HI

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawaii 96721 rterry@hawaii.rr.com

March 31, 2011

Lawrence Yamamoto, Director
Pacific Islands Area
U.S Natural Resources Conservation Service
300 Ala Moana Blvd., Room 4-118
Honolulu HI 96850

Dear Mr. Yamamoto:

Subject: Comment to Draft Environmental Assessment for Boteilho Hawaii Enterprises Lease of State Land for Dairy Purposes, Opihipau, Hukiaa and Kokoiki, North Kohala, Island of Hawai'i

Thank you for the comment letter dated February 9, 2011, providing information on the soil properties, along with two detailed reports. This information provides much useful data for future management of the property. Copies of the reports have been provided to Mr. Boteilho and the State DLNR, but will not be included in the Final EA because of their length.

We very much appreciate your review of the document. If you have any questions about the EA, please contact me at (808) 969-7090.

Sincerely,



Ron Terry, Principal
Geometrician Associates

Cc: Ed Boteilho, Boteilho Hawaii Enterprises
Wesley Matsunaga, DLNR Land Division

I've just reviewed the draft EA and provide one comment:

1. If any proposed structures to be built, file FAA form 7460-1 for an aeronautical review.

Please call me if you have any questions.

Thank you.

Steven Wong
Program Manager
FAA, Honolulu Airports District Office
(808) 541-1225

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawaii 96721 rterry@hawaii.rr.com

March 31, 2011

Steven Wong, Program Manager
Honolulu Airports District Office
Federal Aviation Administration
Via email: Steve.Wong@FAA.gov

Dear Mr. Wong:

Subject: Comment to Draft Environmental Assessment for Boteilho Hawaii Enterprises Lease of State Land for Dairy Purposes, Opihipau, Hukiaa and Kokoiki, North Kohala, Island of Hawai'i

Thank you for the email comment stating that if any structures are proposed to be built, the lessee should file FAA form 7460-1 for an aeronautical review. No new structures are proposed as part of the lease, which covers an existing dairy operation. Mr. Boteilho and the DLNR have been made aware of this requirement if future management of the dairy involves new structures.

We very much appreciate your review of the document. If you have any questions about the EA, please contact me at (808) 969-7090.

Sincerely,



Ron Terry, Principal
Geometrician Associates

Cc: Ed Boteilho, Boteilho Hawaii Enterprises
Wesley Matsunaga, DLNR Land Division



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:
EPO-11-016

February 23, 2011

Mr. Ron Terry
Geometrician Associates
P.O. Box 396
Hilo, Hawaii 96721

Dear Mr. Terry:

**SUBJECT: Draft Environmental Assessment (DEA) for Boteilho Lease of State Land for Dairy Purposes, North Kohala, Hawaii
TMKs: (3)5-5-003:004, 005 & 006; 5-5-005:001; and
5-5-006:002, 003, 004 & 015**

Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have no comments at this time, but reserve the right to future comments. We strongly recommend that you review all of the Standard Comments on our website:
www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this application should be adhered to.

The same website also features a Healthy Community Design Smart Growth Checklist (Checklist). The Hawaii State Department of Health, Built Environment Working Group, recommends that State and county planning departments, developers, planners, engineers and other interested parties apply the healthy built environment principles in the Checklist whenever they plan or review new developments or redevelopments projects. We also ask you to share this list with others to increase community awareness on healthy community design.

If there are any questions about these comments please contact the Environmental Planning Office at 586-4337.

Sincerely,

A handwritten signature in cursive script that reads "Genevieve Salmonson".

GENEVIEVE SALMONSON, Acting Manager
Environmental Planning Office

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawaii 96721 rterry@hawaii.rr.com

March 31, 2011

Genevieve Salmonson, Acting Manager Director
Environmental Planning Office
Hawai'i State Department of Health
P.O. Box 3378
Honolulu HI 96801

Dear Ms. Salmonson:

Subject: Comment to Draft Environmental Assessment for Boteilho Hawaii Enterprises Lease of State Land for Dairy Purposes, Opihipau, Hukiaa and Kokoiki, North Kohala, Island of Hawai'i

Thank you for the comment letter dated February 23, 2011, indicating that your office has no specific comments at this time, but that future comments may be forthcoming, and providing a link to of the DOH Standard Comments. These were reviewed as part of preparation of the Draft EA.

We very much appreciate your review of the document. If you have any questions about the EA, please contact me at (808) 969-7090.

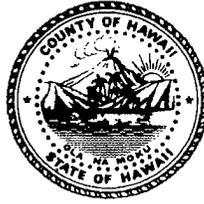
Sincerely,



Ron Terry, Principal
Geometrician Associates

Cc: Ed Boteilho, Boteilho Hawaii Enterprises
Wesley Matsunaga, DLNR Land Division

William P. Kenoi
Mayor



BJ Leithead Todd
Director

Margaret K. Masunaga
Deputy

County of Hawai'i

PLANNING DEPARTMENT

Aupuni Center • 101 Pauahi Street, Suite 3 • Hilo, Hawai'i 96720
Phone (808) 961-8288 • Fax (808) 961-8742

February 25, 2011

Mr. Ron Terry
Geometrician Associates LLC
P.O. Box 396
Hilo, HI 96721

Dear Mr. Terry:

SUBJECT: Draft Environmental Assessment
Landowner: State of Hawai'i
Project: Boteilho Lease of State Land for Dairy Purposes
TMK: 5-5-3:4-6; 5-5-5:1 and 5-5-6:2-4 & 15, North Kohala, Hawai'i

This is in response to your request for comments on the Draft Environmental Assessment which we received on February 8, 2011.

Please note the following:

1. According to our tax maps, a strip of State owned land, TMK: 5-5-6:5 consisting of 3.15 acres, separates TMK: 5-5-6:3 from TMK: 5-5-6:4. (See enclosed map)
There should be an explanation as to why Parcel 5 was not included in the proposed lease area.
2. In Section 3.6.2, Special Management Area, correction that TMK: 5-5-6:4 & 15 are both entirely within the Special Management Area.
3. The goals and objectives relative to agricultural operations in the North Kohala Community Development Plan have been acknowledged and addressed.
4. The National Park Service was not listed as an agency that was consulted in the development of the environmental assessment. Therefore, we would like to reiterate our concern that the expansions of the dairy operation not preclude implementation of the Ala Kahakai National Historic Trail in this North Kohala area.

Mr. Ron Terry
Geometrician Associates LLC
February 25, 2011
Page 2

If you have questions, please contact Esther Imamura of this office at (808) 961-8139.

Sincerely,



for BJ LEITHEAD TODD
Planning Director

ETI:es

P:\Public\Wpwin60\ETI\Eadraftpre-Consu\Terry Boteilho Dairy2 5-5-3 5 & 6.Rtf

Enclosure

cc: Boteilho Hawai'i Enterprises
Mr. Rick Gmerkin, NPS
Planning Department – Kona
Mr. Alan Salavea, Kona Planning
Mr. Wesley Matsunaga, DLNR, Land Division

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawaii 96721 rterry@hawaii.rr.com

March 31, 2011

Bobby Jean Leithead-Todd, Director
Hawai'i County Planning Dept.
101 Aupuni Street, Suite 3
Hilo HI 96720

Dear Ms. Leithead-Todd:

Subject: Comment to Draft Environmental Assessment for Boteilho Hawaii Enterprises Lease of State Land for Dairy Purposes, Opihipau, Hukiaa and Kokoiki, North Kohala, Island of Hawai'i

Thank you for your comment letter dated February 25, 2011, on the Draft EA. In answer to your specific comments:

1. *Reason Parcel 5 is excluded from lease.* Parcel 5 is a right-of-way that the State has chosen to reserve from the lands available for lease.
2. *SMA covers all of 5-5-006:004 and 015.* This information has been corrected in the Final EA.
3. *North Kohala Community Development Plan's agricultural goals.* Thank you for acknowledging this coverage.
4. *National Park Service, Ala Kahakai National Historic Trail.* The Final EA has been corrected to include the fact that not only the Ala Kahakai National Historic Trail, but also E Mau Na Ala Hele, were consulted. This consultation occurred through emails and phone calls to representatives of these organizations and through provision of the Draft EA.

We very much appreciate your review of the document. If you have any questions about the EA, please contact me at (808) 969-7090.

Sincerely,



Ron Terry, Principal

Geometrician Associates

Cc: Ed Boteilho, Boteilho Hawaii Enterprises
Wesley Matsunaga, DLNR Land Division



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD11/5369B

March 8, 2011

Ron Terry
Geometrician Associates
P.O. Box 396
Hilo, Hawai'i 96721

Re: Draft Environmental Assessment
Lease of State lands for continued dairy operations
North Kohala, Island of Hawai'i

Aloha e Ron Terry,

The Office of Hawaiian Affairs (OHA) is in receipt of your February 6, 2011 request for comments on a draft environment assessment (DEA) to support a request by Boteilho Hawaii Enterprises (applicant) for a direct lease for a 30-year term of approximately 880 acres of land (action) under the control of the Department of Land and Natural Resources. The 880 acres of land which will be subject to this action are currently leased by the applicant through three separate general leases (with expiration dates ranging between 2019-2020) approved by the Board of Land and Natural Resources (BLNR). This action was approved "in-concept" by the BLNR on September 9, 2010 subject to certain conditions, including completion of a final environmental assessment with a "finding of no significant impact" (FONSI) determination.

Since 1985, the applicant has operated the Clover Leaf Dairy on the lease parcels (parcels). This is only one of three dairies currently operating in the State of Hawai'i. More than 80 percent of the milk consumed in Hawai'i is imported from California (DEA, Part 1.1). The action will encumber the parcels in a single direct lease for a 30-year term from the date of final BLNR approval, which will support the continued operations of the applicant and facilitate the acquisition of new equipment. Overall, OHA sees the efforts of the applicant as supporting the development of diversified agriculture in Hawai'i which supports our local economy and contributes to reducing our dependence on imported products.

OHA recognizes that the applicant has demonstrated responsible land stewardship in developing best management practices independently and in collaboration with the U.S. Department of Agriculture-Natural Resources Conservation Service to eliminate or minimize the impacts of dairy operations on the larger watershed and near-shore water quality (DEA, Part 3.1.2). The DEA acknowledges that the parcels are situated within a larger traditional cultural landscape which includes the Kukuipahau and Mo'okini Heiau complexes and the Kamehameha I birth site at Kokoiki (DEA, Part 3.2.2).

Ron Terry
Geometrician Associates
March 10, 2011
Page 2 of 2

OHA concurs with the FONSI determination in the DEA. We will rely on the assurances that lateral public access via an unpaved access road that crosses the parcels adjacent to the shoreline will not be restricted by the applicant or the action (DEA, Part 3.2.1).

Thank you for the opportunity to provide comments. Should you have any questions or concerns, please contact Keola Lindsey at 594-0244 or keolal@oha.org.

'O wau iho nō me ka 'oia'i'o,

Clyde W. Nāmu'o
Chief Executive Officer

C: OHA- West Hawai'i COC

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawaii 96721 rterry@hawaii.rr.com

March 31, 2011

Clyde W. Nāmu‘o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Blvd., Suite 1250
Honolulu HI 96813

Dear Mr. Nāmu‘o:

Subject: Comment to Draft Environmental Assessment for Boteilho Hawaii Enterprises Lease of State Land for Dairy Purposes, Opihipau, Hukiaa and Kokoiki, North Kohala, Island of Hawai‘i

Thank you for the comment letter dated March 8, 2011, indicating support for the sustainable, local agriculture that the dairy has provided and hopes to continue to provide in the future. As noted in your letter, Mr. Boteilho has tried to be a good steward of natural resources and also to recognize the place of these lands within the rich cultural landscape of North Kohala. Be assured that Mr. Boteilho acknowledges and honors the right of the public to cross along the shoreline trail and road.

We very much appreciate your review of the document. If you have any questions about the EA, please contact me at (808) 969-7090.

Sincerely,



Ron Terry, Principal
Geometrician Associates

Cc: Ed Boteilho, Boteilho Hawaii Enterprises
Wesley Matsunaga, DLNR Land Division

ENVIRONMENTAL ASSESSMENT

BOTEILHO LEASE OF STATE LAND
FOR DAIRY PURPOSES

APPENDIX 2

APPROVAL OF DIRECT LEASE IN PRINCIPLE

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division
Honolulu, Hawaii 96813

September 9, 2010

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

PSF No.: 10HD-156

HAWAII

Approval in Concept for the Issuance of Direct Lease to Boteilho Hawaii Enterprises, Inc. for Dairy Purposes, Opihipau-Hukiaa, Kokoiki, North Kohala, Hawaii, Tax Map Key: 3rd/ 5-5-003: 4, 5 & 6, 5-5-005: 1, and 5-5-006: 2, 3, 4 & 15.

APPLICANT:

Boteilho Hawaii Enterprises, Inc., a Hawaii corporation.

LEGAL REFERENCE:

Section 171-59(b), Hawaii Revised Statutes, as amended.

TMK/ DISTRICT/ ZONING/ ENCUMBRANCE/ AREA:

TAX MAP KEY	DISTRICT	ZONING		ENCUMBRANCE	AREA (Acres)
		LUC	CZO		
3 rd / 5-5-03: 4	Opihipau, Hukiaa N. Kohala	Ag	Ag-20	General Lease No. S-5572; Boteilho Hawaii Enterprises, Inc.	136.94
3 rd / 5-5-03: 5	Opihipau, Hukiaa N. Kohala	Ag	Ag-20	General Lease No. S-5572; Boteilho Hawaii Enterprises, Inc.	31.78
3 rd / 5-5-03: 6	Opihipau, Hukiaa N. Kohala	Ag	Ag-20	General Lease No. S-5572; Boteilho Hawaii Enterprises, Inc.	39.10
3 rd / 5-5-05: 1	Kokoiki, N. Kohala	Ag	Ag-20	General Lease No. S-5574; Boteilho Hawaii Enterprises, Inc.	74.323
3 rd / 5-5-06: 2	Opihipau, Hukiaa N. Kohala	Ag	Ag-20	General Lease No. S-4950; Boteilho Hawaii Enterprises, Inc.	39.28
3 rd / 5-5-06: 3	Opihipau, Hukiaa N. Kohala	Ag	Ag-20	General Lease No. S-4950; Boteilho Hawaii Enterprises, Inc.	397.239
3 rd / 5-5-06: 4	Opihipau, Hukiaa N. Kohala	Ag	Ag-20	General Lease No. S-4950; Boteilho Hawaii Enterprises, Inc.	144.827

3 rd / 5-5-06: 15	Opihipau, Hukiaa N. Kohala	Ag	Ag-20	General Lease No. S-4950; Boteilho Hawaii Enterprises, Inc.	16.06
				TOTAL:	879.549

LOCATION:

Portion of Government lands situated at Opihipau-Hukiaa and Kokoiki, North Kohala, Hawaii, identified by Tax Map Key: 3rd/ 5-5-003: 4, 5 & 6, 5-5-005:1, and 5-5-006: 2, 3, 4 & 15, as shown on the attached map labeled Exhibit A.

TRUST LAND STATUS:

Section 5(b) lands of the Hawaii Admission Act

DHHL 30% entitlement lands pursuant to the Hawaii State Constitution:

YES ___ NO x

CURRENT USE STATUS:

Encumbered by General Lease No. S-4950, Boteilho Hawaii Enterprises, Inc., Lessee, for dairying purposes. Lease to expire on March 31, 2020. Annual rent is \$16,800.

Encumbered by General Lease No. S-5572, Boteilho Hawaii Enterprises, Inc., Lessee, for pasture purposes. Lease to expire on February 7, 2019. Annual rent is \$8,520.

Encumbered by General Lease No. S-5574, Boteilho Hawaii Enterprises, Inc., Lessee, for pasture purposes. Lease to expire on February 7, 2019. Annual rent is \$2,760.

CHARACTER OF USE:

Dairying purposes.

LEASE TERM:

Thirty (30) years

COMMENCEMENT DATE:

The first day of the month to be determined by the Chairperson.

ANNUAL RENT:

Fair market annual rent to be determined by independent appraiser, subject to review and approval by the Chairperson.

METHOD OF PAYMENT:

Semi-annual payments, in advance.

RENTAL REOPENINGS:

At the 10th and 20th years of the lease term, by staff or independent appraisal.

PERFORMANCE BOND:

Twice the annual rental amount.

PROPERTY CHARACTERISTICS:

Utilities – All utilities are available.

Slope – slight gentle mauka-makai 4.8% slope

Elevation – 400 to 600 feet

Legal access to property – Staff has verified that there is legal access to the property off the Niulii-Mahukona Road.

Subdivision – Staff has verified that the subject property is a legally subdivided lot.

Encumbrances – Staff has verified that the following encumbrances exist on the property:

General Lease No. S-4950, Boteilho Hawaii Enterprises, Inc.

General Lease No. S-5572, Boteilho Hawaii Enterprises, Inc.

General Lease No. S-5574, Boteilho Hawaii Enterprises, Inc.

CHAPTER 343 - ENVIRONMENTAL ASSESSMENT:

This is only a request for Land Board approval in concept for a direct lease to Boteilho Hawaii Enterprises, Inc. over an approximate 879.549 acres with authorization to proceed upon compliance of Chapter 343, HRS.

DCCA VERIFICATION:

Place of business registration confirmed:	YES <u>x</u>	NO
Registered business name confirmed:	YES <u>x</u>	NO
Applicant in good standing confirmed:	YES <u>x</u>	NO

APPLICANT REQUIREMENTS:

Applicant shall be required:

- 1) Pay for the costs of public notice pursuant to HRS Section 171-16;
- 2) Publish an environmental assessment with the Office of Environmental Quality Control in compliance with HRS Chapter 343 and HAR Chapter 11-200, and obtain Finding of No Significant Impact (FONSI) for the project.

BACKGROUND:

At its meeting of December 16, 1983, Item F-5, the Board of Land and Natural Resources approved a direct (35-year) lease (GLS-4950) to Boteilho Hawaii Enterprises, Inc., for dairying, cattle feeding and pasturing purposes. The lease expires on March 31, 2020. The lease covers 597.406 acres, identified by Tax Map Key: 3rd/ 5-5-006: 2, 3, 4 & 15.

At a public auction held on December 9, 1998, General Lease S-5572, a 20-year lease was awarded to Boteilho Hawaii Enterprises, Inc., as the successful bidder. The lease expires on February 7, 2019. The lease covers 207.820 acres, identified by Tax Map Key: 3rd/ 5-5-003: 4, 5 & 6.

At a public auction held on December 9, 1998, Boteilho Hawaii Enterprises was the successful bidder for GLS-5574, a 20-year pasture lease under General Lease No. S-5574. The lease expires on February 7, 2019. The lease covers 74.323 acres, identified by Tax Map Key: 3rd/ 5-5-005:1.

REMARKS:

The subject parcels are currently under lease to Boteilho Hawaii Enterprises, Inc. for dairying and pasture purposes. The current leases are the highest and best use allowable that is consistent with county zoning, which is agriculture. Boteilho Hawaii Enterprises, Inc. initially requested a 25-year extension for its leases, but later decided to instead request a cancellation for the re-issuance of a new 30-year direct lease over the same parcels for agricultural processing (dairy) purposes. The longer lease term would justify additional investment of monies for the replacement of old machinery and other major improvements.

Boteilho Hawaii Enterprises, Inc., qualifies for a direct lease pursuant to Hawaii Revised Statutes, 171-59(b) as the direct lease is for agricultural processing purposes, which involves the processing of agricultural products, including dairying, grown, raised or produced in Hawaii. Boteilho Hawaii Enterprises, Inc. has been in the dairying business for over 26 years. A disposition of a direct lease to Boteilho Hawaii Enterprises, Inc.,

encourages competition in the agricultural milk production industry as it will allow Boteilho Hawaii Enterprises to acquire much needed newer equipment so it can maintain its milk production quotas. Currently there are only two dairies left on the Big Island and in the state.

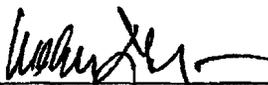
Boteilho Hawaii Enterprises, Inc., has not had a lease, permit, easement or other disposition of the State lands terminated within the last five years due to non-compliance with such terms and conditions.

No agency or community comments were solicited at this time, as this is only an approval in concept for a direct dairy lease. Boteilho Hawaii Enterprises, Inc. will be soliciting comments from various agencies and interest groups as part of the environmental assessment process.

RECOMMENDATION: That the Board:

1. Subject to the Applicant fulfilling all of the Applicant requirements listed above, approve in concept the issuance of a direct lease to Boteilho Hawaii Enterprises, Inc. covering the State-owned parcels identified as Tax Map Keys: 3rd/ 5-5-03: 4, 5 & 6; 3rd/ 5-5-05: 1; and 3rd/ 5-5-06: 2, 3, 4 & 15 for commercial dairy operations pursuant to section 171-59(b) with the understanding that the approval in concept shall not be deemed to be an approval of a lease as staff shall return to the Land Board at a later date for approval of the lease disclosing the Environmental Assessment with a Finding of No Significant Impact.

Respectfully Submitted,



Wesley T. Matsunaga
Land Agent

APPROVED FOR SUBMITTAL:



Laura H. Thielen, Chairperson



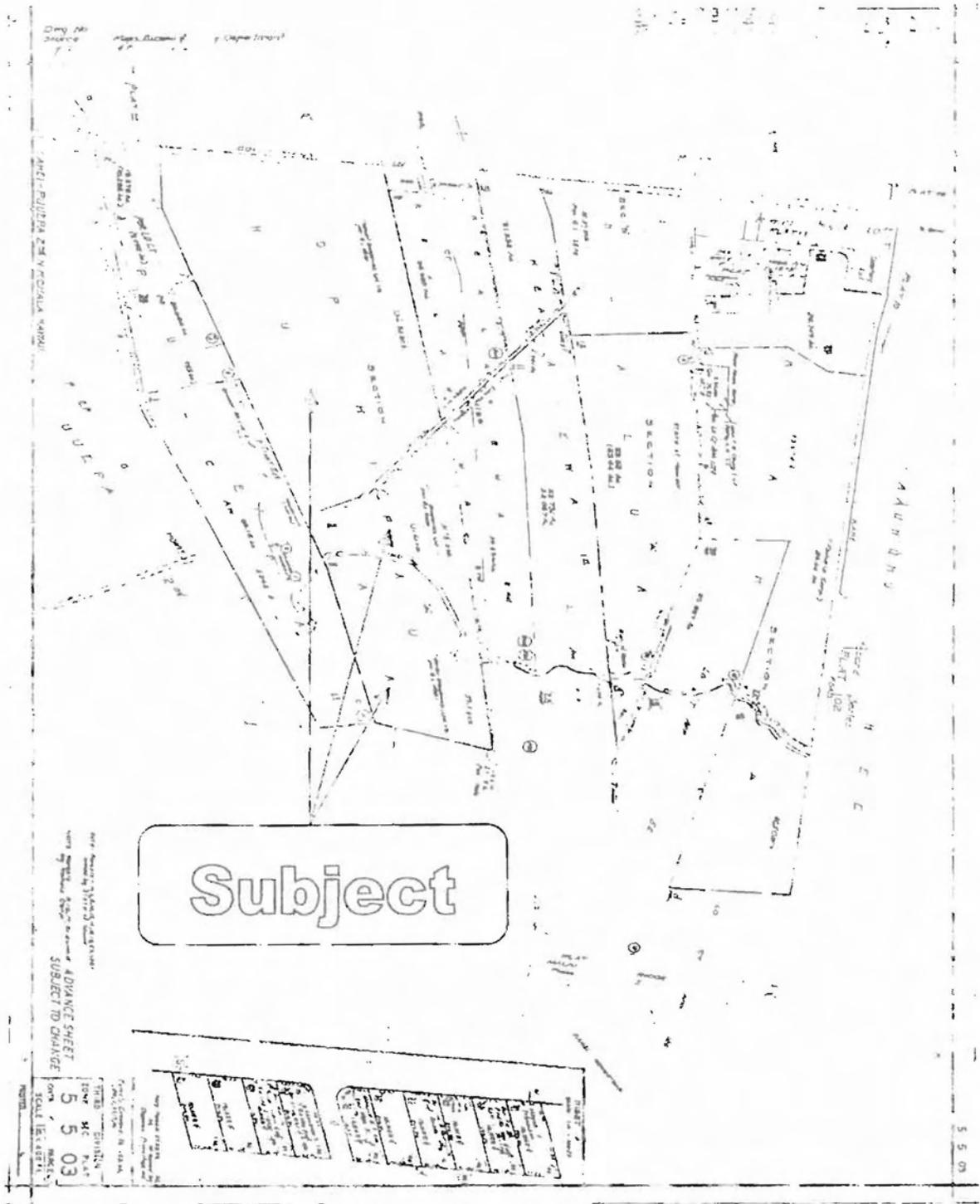


EXHIBIT A

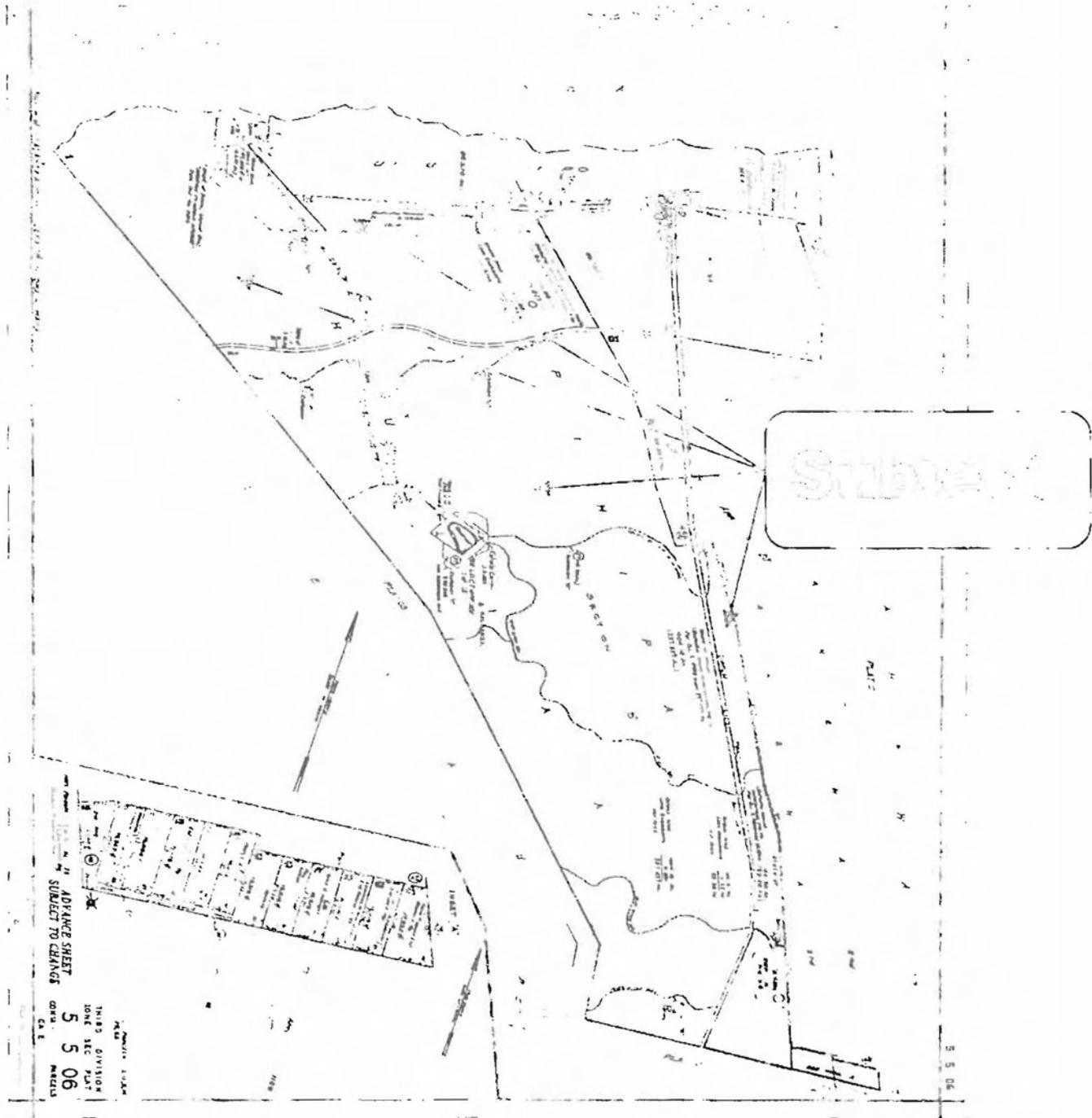


EXHIBIT A

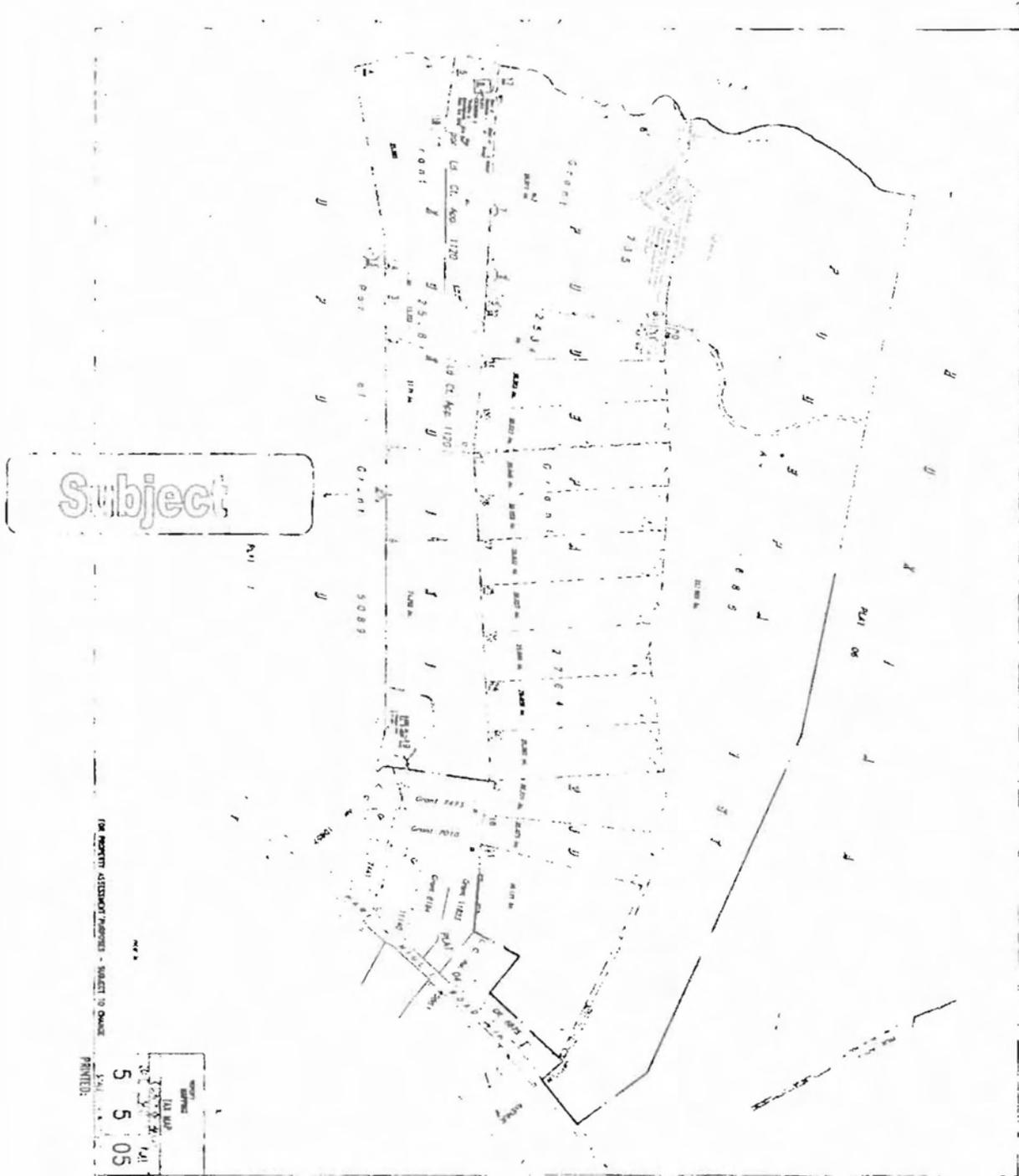
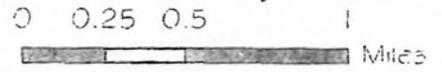


EXHIBIT A

North Kohala Land Ownership

-  Brighton 670
-  EWM Investments
-  Govt. State
-  Kamehameha Schools
-  Opal V. GMBH
-  Parker Ranch
-  Sureiy Kohala
-  Hualua Land LLC



North Kohala Land Ownership

- Brighton 670
- EWM Investments
- Govt. State
- Kamehameha Schools
- Opal V. GMBH
- Parker Ranch
- Sureiy Kohala
- Hualua Land LLC



0 0.25 0.5 1 Miles



ENVIRONMENTAL ASSESSMENT
BOTEILHO LEASE OF STATE LAND
FOR DAIRY PURPOSES

APPENDIX 3
MAP AND PHOTO FIGURES

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Figure 3 Airphoto and Schematic Plan of Dairy Areas

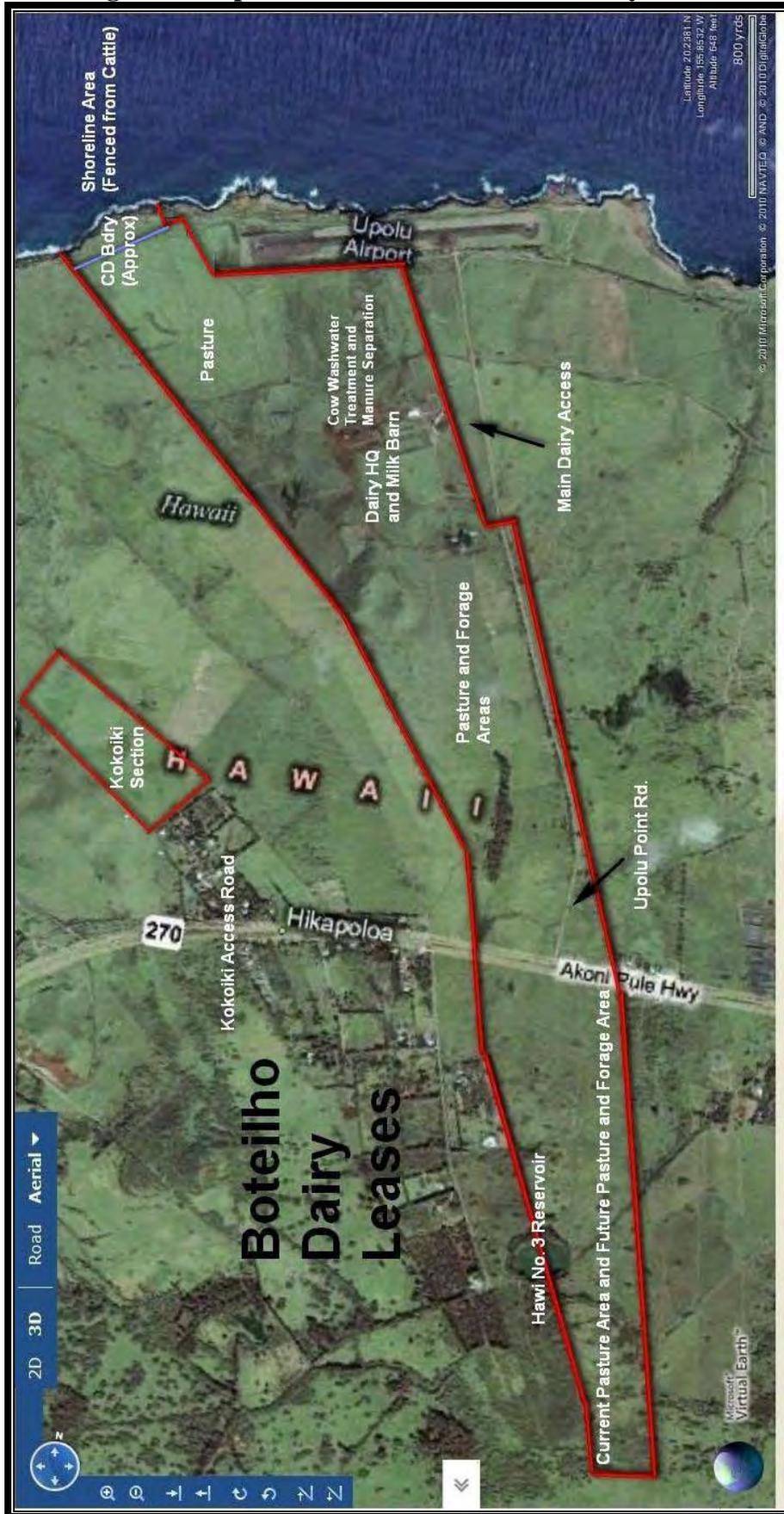


Figure 4 Project Site Photos



4a Dairy center from mauka ▲ ▼ 4b Mauka grazing land



Figure 4 Project Site Photos



4c Forage land ▲ ▼ 4d Kohala Ditch without water



Figure 4 Project Site Photos



4e Hawi No. 3 Reservoir ▲ ▼ 4f Dairy barn and cow wash area



Figure 4 Project Site Photos



4g Manure recovery area ▲ ▼ 4h Cow wash water treatment ditch and lagoons



Figure 4 Project Site Photos



4i Airport road ▲ ▼ 4j Shoreline area of lease lands

