

HAWAI'I DAIRY FARMS

FINAL ENVIRONMENTAL IMPACT STATEMENT

VOLUME 6

INDIVIDUAL COMMENT LETTERS AND RESPONSES (PART 1 OF 2)

This environmental document is prepared pursuant to Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health, Environmental Impact Statement Rules.

SUBMITTED BY:



Hawai'i Dairy Farms
MAHA'ULEPU, KAUAI

JANUARY 2017

HAWAI'I DAIRY FARMS

FINAL ENVIRONMENTAL IMPACT STATEMENT

VOLUME 6

INDIVIDUAL COMMENT LETTERS AND RESPONSES (PART 1 OF 2)

SUBMITTED BY:



Hawai'i Dairy Farms
MAHA'ULEPU, KAUAI

PREPARED BY:



Architecture • Planning & Environmental Services • Interior Design • Civil Engineering
925 Bethel Street, 5th Floor, Honolulu, HI 96813 (808) 523-5866

This environmental document is prepared pursuant to Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health, Environmental Impact Statement Rules.

JANUARY 2017

**FINAL ENVIRONMENTAL IMPACT STATEMENT
LIST OF VOLUMES**

VOLUME

- 1 FINAL ENVIRONMENTAL IMPACT STATEMENT
- 2 TECHNICAL APPENDICES
- 3-7 COMMENTS AND RESPONSES TO THE DEIS
 - 3 AGENCIES AND ORGANIZATIONS COMMENT LETTERS AND RESPONSES
 - 4 FRIENDS OF MĀHĀ'ULEPŪ COMMENT LETTER, APPENDICES, AND RESPONSES
 - 5 KAWAIOA DEVELOPMENT COMMENT LETTER, APPENDICES, AND RESPONSES
 - 6 INDIVIDUAL COMMENT LETTERS AND RESPONSES (PART 1 OF 2)
 - 7 INDIVIDUAL COMMENT LETTERS AND RESPONSES (PART 2 OF 2)
- 8-9 COMMENTS AND RESPONSES TO THE EISPN
 - 8 COMMENTS AND RESPONSES TO THE EISPN - PART A
 - 9 COMMENTS AND RESPONSES TO THE EISPN - PART B

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
A. Federal Agencies or Affiliates					
Environmental Protection Agency Region IX Pacific Islands			X		
Department of Agriculture Natural Resources Conservation Service	X		X		
Department of Commerce National Marine Fisheries Service			X		
Department of Homeland Security Coast Guard 14 th District			X		
Department of Transportation Federal Aviation Administration			X		
Department of Transportation Federal Transit Administration			X		
Department of Transportation Federal Highways Administration			X		
Department of the Navy			X		
National Oceanic and Atmospheric Administration Fisheries Pacific Island Regional Office	X	X	X	X	X
U.S. Army Corps of Engineers, Honolulu District	X		X	X	X
U.S. Department of the Interior Fish and Wildlife Service, Pacific Islands	X	X	X	X	X
Department of Interior, Geological Survey, Pacific Islands Water Science Center			X	X	X
Department of the Interior National Parks Service, Pacific Islands			X		
B. State Agencies					
Department of Accounting and General Services	X		X	X	X
Department of Agriculture	X	X	X		X
Department of Business, Economic Development & Tourism (DBEDT)	X		X		
DBEDT, Office of Planning	X		X	X	X
DBEDT, Strategic Industries Division	X		X		
Department of Defense			X	X	X
Department of Hawaiian Home Lands			X		X
Department of Land and Natural Resources (DLNR)	X	X	X		X
DLNR, CWRM	X	X	X		X
DLNR, Engineering Division	X	X	X	X	X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
DLNR, Historic Preservation Division	X	X	X	X	X
Kaua'i/Ni'ihau Island Burial Council	X	X	X		X
DLNR, Land Division, Kaua'i District	X	X	X	X	X
DLNR, Soil and Water Conservation District, West Kaua'i	X		X		
Department of Health (DOH) via Environmental Planning Office	X	X	X	X	X
DOH, Clean Air Branch	X	X	X		X
DOH, Clean Water Branch	X	X	X		X
DOH, Communications Office					X
DOH, Compliance Assistance Office					X
DOH, Environmental Health Services Division (EHSD)					X
DOH, EHSD – Food & Drug Branch – Indoor & Radiological Health Branch					X
DOH, EHSD – Food & Drug Branch – Sanitation Branch					X
DOH, EHSD – Vector Control Branch					X
DOH, Environmental Management Division					X
DOH, Environmental Resources Office					X
DOH, Hazard Evaluation and Emergency Response Office					X
DOH, Health Resources Administration					X
DOH, Kaua'i District Health Office					X
DOH, Planning, Policy, and Program Development Office					X
DOH, Safe Drinking Water Branch					X
DOH, Sanitation	X	X	X		X
DOH, Solid & Hazardous Waste Branch					X
DOH, State Laboratories Division					X
DOH, Wastewater Branch	X	X	X		X
Department of Transportation (DOT)	X	X	X		X
Kaua'i/Ni'ihau Island Burial Council	X		X		
Office of Environmental Quality Control			X		X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Office of Hawaiian Affairs	X	X	X		X
University of Hawai'i, Environmental Center			X		X
University of Hawai'i, Water Resources Research Center			X		
C. County of Kaua'i					
Department of Parks and Recreation	X		X		
Department of Planning	X		X		X
Department of Public Works	X	X	X		X
Department of Water	X	X	X		X
Fire Department	X		X		
Office of Economic Development	X		X		
Office of the County Clerk	X	X	X		
Police Department	X		X		
Transportation Agency	X		X		
E. Elected Officials					
U.S. Senator Brian Schatz			X		X
U.S. Senator Mazie Hirono			X		X
(former) U.S. Representative Mark Takai 1 st District			X		
U.S. Representative Colleen Hanabusa 1 st District					X
U.S. Representative Tulsi Gabbard, 2 nd District			X		X
Council Chair, Mel Rapozo	X		X	X	X
Council Vice Chair, Ross Kagawa	X		X	X	X
Councilmember, Arryl Kaneshiro	X		X		
Councilmember, Gary L Hooser	X	X	X	X	X
Councilmember, JoAnn A. Yukimura	X		X	X	X
Councilmember, KipuKai Kualii'i	X		X		
Councilmember, Mason K. Chock	X		X	X	X
Honorable Mayor Bernard P. Carvalho, Jr.	X		X		
Representative Dee Morikawa, House District 16	X		X		
Representative Councilmember,	X		X	X	X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Derek S.K. Kawakami House District 14					
Representative James K. Tokioka, House District 15	X		X		
Senator Ronald D. Kouchi, Senate District 8	X		X		
F. Media					
Honolulu Star Advertiser			X		X
Hawai'i Tribune Herald			X		X
West Hawai'i Today			X		X
The Garden Island	X		X		X
Maui News			X		X
Moloka'i Dispatch			X		X
Honolulu Civil Beat			X		X
H. Libraries					
Department of Education Hawai'i State Library Hawai'i Documents Center			X		X
Hawai'i Kai Regional Library			X		X
Hilo Regional Library			X		X
Kahului Regional Library			X		X
Kaimuki Regional Library			X		X
Kāne'ohe Regional Library			X		X
Legislative Reference Bureau			X		X
Library of the Department of Business, Economic Development, and Tourism			X		
Līhu'e Regional Library	X		X		X
Hanapepe Public Library			X		X
Kapa'a Public Library			X		X
Kōloa Public and School Library			X		X
Princeville Public Library			X		X
Waimea Public Library			X		X
Pearl City Regional Library			X		X
University of Hawai'i Hamilton Library			X		X

HAWAII' I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
University of Hawai'i at Hilo Edwin H. Mo'okini Library			X		X
University of Hawai'i Kaua'i Community College Library	X		X		X
University of Hawai'i, Maui College Library			X		X
I. Community Interest Groups and Individuals					
Aha Moku Advisory Committee				X	X
Center for Biological Diversity				X	X
Center for Food Safety				X	X
Contractors Association Kaua'i	X		X	X	X
Friends of Māhā'ulepū	X	X	X	X	X
Grove Farm	X	X	X	X	X
Hawaii Cattlemen's Council, Inc.				X	X
Hawai'i Chapter of the Sierra Club Kaua'i Group	X	X	X	X	X
Kaua'i Chamber of Commerce	X		X	X	X
Kaua'i County Farm Bureau	X		X	X	X
Kaua'i Economic Development Board	X		X		
Kaua'i Filipino Chamber of Commerce	X		X		
Kaua'i Planning and Action Alliance	X		X		
Kaua'i Visitors Bureau	X		X		
Kawailoa Development	X	X	X	X	X
Kohola Leo				X	X
Kōloa Community Association	X		X		
Kōloa Landing	X		X		
Malama Kōloa	X		X		
Malama Māhā'ulepū	X	X	X	X	X
Maui School Garden Network				X	X
Po'ipū Bay Golf Course				X	X
Po'ipū Beach Resort Association	X		X	X	X
Po'ipū Crater Homeowners' Association	X	X	X		X
Po'ipū Kai	X		X		

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Rotary Club of Po'ipū Beach	X		X		
Surfrider Foundation, Kaua'i Chapter	X	X	X	X	X
Whalers Cove Resort	X		X		
J. Individuals					
Albert, Martin, M.D.	X	X	X		X
Albert, Phyllis	X	X	X		X
Albrecht, Arnold and Jane	X	X	X		X
Alexander, Mary				X	X
Amsterdam, Jo	X	X	X		X
Anderson, Gary R.	X	X	X		X
Andrade, Mac				X	X
Anthony, John				X	X
Aqui, Emeline				X	X
Ascuena, Jodi	X	X	X	X	X
Ascuena, Victor				X	X
Ashkenazy, Janet	X	X	X		X
Baldwin, Peter				X	X
Bandsma, Gloria				X	X
Barich, Terese	X	X	X		X
Barnard, Bill	X	X	X		X
Baron, Chris	X	X	X		X
Bartlett, Tom and Mary	X	X	X	X	X
Basile, Jude	X	X	X		X
Basler, Sabra	X	X	X	X	X
Bator, Bonnie P.	X	X	X	X	X
Bay, Greg & Shelley	X	X	X	X	X
Beall, Allan				X	X
Beall, Charlotte				X	X
Beall, Charlotte and Allen	X	X	X		X
Beam, Craig	X	X	X		X
Bedwell, Curtis J.	X	X	X	X	X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Bell, Betty	X	X	X	X	X
Bell, Masai	X	X	X		X
Beuttell, Jack				X	X
Blaich, Beryl	X	X	X	X	X
Bishop, Roger	X	X	X	X	X
Blessing, Alison K. & Breckenridge, Robert L.	X	X	X		X
Blessing, Phillip L. and Kathleen L.	X	X	X		X
Boll, Sharon	X	X	X		X
Boyd, Carylee	X	X	X		X
Boyle, Cornelia	X	X	X	X	X
Brendel, Judith E.	X	X	X		X
Britzmann, Katy	X	X	X	X	X
Brockett, Kyle				X	X
Brockett, Sonja				X	X
Bronzino, Edna				X	X
Brouchoud, Bob & Kathy				X	X
Bulder, Liedeke & Wright, Dick	X	X	X		X
Burkhardt, Joanne	X	X	X		X
Burnham, Deborah				X	X
Burns, Mrs. Robert E.	X	X	X		X
Calipjo, Lester				X	X
Carrick, Donna			X	X	X
Carrick, George			X	X	X
Carrick, George and Donna	X	X	X		X
Cassidy, Andrea			X	X	X
Cassidy, Michael and Andrea	X	X	X		X
Caylor, Carolyn	X	X	X		X
Cerioni, Lee	X	X	X		X
Clark, Kat				X	X
Clune, Constance A.				X	X
Coe, Charlie				X	X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Collison, David H. V.	X	X	X		X
Coon, Michael M.	X	X	X		X
Coon-Waymen, Michael & Jenica			X	X	X
Cowden, Felicia	X	X	X	X	X
Cox, Carroll				X	X
Crawford, Brenda S.	X	X	X		X
Curtis, Mya				X	X
Dalton, Judy	X	X	X		X
Davis, Amy Boudreau				X	X
Davis, Eric				X	X
Davis-Briant, Carol Ann	X	X	X		X
Decker, Lori	X	X	X	X	X
DeMarco, Richard				X	X
DeMichiel, Catherine	X	X	X		X
DeMichiel, Robert P.	X	X	X		X
deVries, Diane	X	X	X	X	X
Deyden, Myra VanOrnum				X	X
DeZerega, David	X	X	X		X
DeZerega, Sara	X	X	X		X
Di Pietro, Jeri	X	X	X		X
Diamant, Michael	X	X	X		X
Dorrance, Jay	X	X	X		X
Ebata, Ellen	X	X	X	X	X
Eckberg, Ronalee and Eric	X	X	X		X
EerNisse, Errol P.				X	X
Ellul, Beverley and Joseph	X	X	X		X
Erichsen, Andrew				X	X
Faraldi, Russell	X	X	X		X
Farias, Bronwyn				X	X
Farias, Robert				X	X
Farrell, Cheryl Ann	X	X	X		X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Faye, Alan	X	X	X		X
Fehring, Bruce				X	X
Feldmeir, Matthew & Susan				X	X
Ferguson, James & Susan	X	X	X	X	X
Fleming, Collin and Factor, Kim	X	X	X		X
Forbes, Micha				X	X
Forer, Karl	X	X	X		X
Freeman, Margery	X	X	X	X	X
Fry, Robert				X	X
Garcia, Shawn				X	X
George, Heather				X	X
Gia, Debborrah				X	X
Gipson, Farouz				X	X
Goeggel, Cathy				X	X
Goodwin, Sharon	X	X	X		X
Gottlieb, Alan				X	X
Grace, Yojana	X	X	X	X	X
Grant, Amy	X	X	X		X
Gudoy, Gina				X	X
Hadwin, Jim	X	X	X	X	X
Hadwin, Kathleen	X	X	X		X
Hagan, Beth	X	X	X		X
Hagan, Pat	X	X	X		X
Hagensen, Julie M.	X	X	X		X
Hager, Vivian	X	X	X		X
Halliday, John & Terri	X	X	X	X	X
Hammerquist, Bridget	X	X	X	X	X
Hanohano, Kalanikumai Ka Maka 'uli 'uli 'O Na Ali'i	X	X	X		X
Hartman, Diann				X	X
Hartman, Lisa	X	X	X		X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Hashimoto, Danny				X	X
Hayden, Chris & Diana				X	X
Hayes, Terrie and Kaohelauli'i, Billy	X	X	X	X	X
Heacock, Donald E.	X	X	X	X	X
Healy, John T.	X	X	X		X
Hee, Stephen	X	X	X		X
Heinen, Gary and Jackie	X	X	X		X
Heller, Larry	X	X	X		X
Hennessy, Tom and Ann	X	X	X		X
Herndon, Herb	X	X	X		X
Herndon, Joyce	X	X	X		X
Hibbitt, Mindy				X	X
Hiraoka, Joy				X	X
Hoff, John R.	X	X	X	X	X
Hokupaa				X	X
Holl, Sherrie				X	X
Holt, Howard & Maureen	X	X	X	X	X
Horak, Joe				X	X
Houby, Jens	X	X	X		X
Howell, David & Linda	X	X	X	X	X
Hubner, Andy				X	X
Hurley, Marisa	X	X	X		X
Ito, Y. Marvin				X	X
James, Michael				X	X
Janai, Kapua	X	X	X	X	X
Jarrett, Nancee				X	X
Jerdal, Larry and Karen	X	X	X		X
John, Ronald O.	X	X	X	X	X
Jones, Ruthann				X	X
Jones, Vince and Fran	X	X	X		X
Jorgens, Gayle and Wai, Stanley	X	X	X		X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Judd, David	X	X	X		X
Kalanikumai Ka Makauliuli O Na Alii Hanohano				X	X
Kallai, Hope				X	X
Kanna, Jacqueline K.				X	X
Kashiwaeda, Suzanne	X	X	X	X	X
Kauai, Trinette				X	X
Kawahara, Dawn Fraser	X	X	X		X
Kawahara, Delano H.	X	X	X		X
Kawahara, Lani	X	X	X		X
Kaye, Melanie				X	X
Keamoai, Hoku				X	X
Kechloian, Eileen	X	X	X	X	X
Kechloian, John (Jay)	X	X	X	X	X
Kelley, MaryLu	X	X	X		X
Kelly, Frank and Marilyn	X	X	X		X
Ken (no last name)	X	X	X		X
Khalsa, Dr. H.S.S.				X	X
Kinsey, Sinclair W.	X	X	X		X
Kroll, Jean				X	X
Kuala, Marty	X	X	X		X
Lauryn, Steven	X	X	X		X
Lawrence, Jr., Delton				X	X
Lee-Jackson, Debra	X	X	X		X
Leiningner, Susan	X	X	X		X
Levy, Joan	X	X	X		X
Lo, Karl & Catherine	X	X	X		X
Lott, Jacquelynn K.				X	X
Low, Kristen				X	X
Lucas, Paul	X	X	X		X
Lynam, Christina	X	X	X		X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Macdougall, Sandy	X	X	X		X
Malapit, Lon				X	X
Maple, Stuart & Lynne	X	X	X		X
Martin, Marianne	X	X	X		X
Masters, Jeff and Deborah	X	X	X		X
Matsumura, Lynne				X	X
McCaslin, Candace	X	X	X		X
McCoubrey, Sharon	X	X	X	X	X
Meboe, Ellen F.	X	X	X	X	X
Meboe, Joe	X	X	X	X	X
Meyer, Ira & Rayme	X	X	X	X	X
Mikaila, Taressa				X	X
Miller, John W.	X	X	X		X
Mills, Mary P.	X	X	X		X
Miner, Imogene	X	X	X		X
Mizumoto, Lance C.	X	X	X		X
Mizuo, Kenneth & Lynette				X	X
Montgomery, Yuri	X	X	X		X
Morey, Lee	X	X	X		X
Mukai, Richard & Victoria				X	X
Muller, Jan	X	X	X	X	X
Muller, John T. Jr.	X	X	X	X	X
Murguia, Kathleen	X	X	X		X
Muzik, Katherine				X	X
Neudorffer, Mary	X	X	X	X	X
Nishek, Jerry				X	X
Nishimura, Randall				X	X
Norman, Rita	X	X	X		X
O'Connor, Tim	X	X	X		X
Oliver, Polli C.	X	X	X		X
Olry, Michele	X	X	X		X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Olson, Dick and Maria	X	X	X		X
Osterer, Lorraine	X	X	X	X	X
Oxford, Patty	X	X	X		X
Oyama, Mark				X	X
Patterson, John	X	X	X		X
Perez, Kymry	X	X	X		X
Pescaia, Carol	X	X	X		X
Petersen, Greg	X	X	X		X
Pilaria, Rowland	X	X	X	X	X
Pilaria, Shari	X	X	X	X	X
Pilaria, Val	X	X	X		X
Pinzon, Crystal				X	X
Plotkins, Pierra A.	X	X	X		X
Poindexter, James M.	X	X	X		X
Pollock, Sherry				X	X
Powers, Eve	X	X	X		X
Purdy, Ken				X	X
Purdy, Susie				X	X
R, Liz				X	X
Rachap, Allan	X	X	X	X	X
Rachap, Judith	X	X	X	X	X
Ray, Robert	X	X	X		X
Rees, Gerald and Hannah	X	X	X	X	X
Riley, Mark and Simpson, Ann	X	X	X		X
Rogers, Puanani				X	X
Rose, Mike and Laurie	X	X	X		X
Rosen, Gail C.	X	X	X		X
Rosen, Henry and Sara	X	X	X	X	X
Rosener, Matt	X	X	X	X	X
Rowe, Rupert				X	X
Rozelle, Linda M.	X	X	X		X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Ruchaber, Krista				X	X
Rullman, Charles	X	X	X		X
Russell, Richard	X	X	X	X	X
Saiki, Michael				X	X
Salazar, Tiffany L.				X	X
Santos, Ivy				X	X
Sauve, Joe	X	X	X		X
Scamahorn, Elizabeth				X	X
Schimmelfennig, William	X	X	X		X
Schwartz, Ken and Stephanie	X	X	X	X	X
Shablow, Janette	X	X	X		X
Shaffer, Jamie H.	X	X	X		X
Sheffield, Kathy				X	X
Sherman, Dr. Irene & Douglas	X	X	X	X	X
Simms, Shelby				X	X
Sindt, Ed	X	X	X	X	X
Smith, Annick				X	X
Smith, Sarah				X	X
Smith, Stephen E.	X	X	X		X
Snyder, Eleanor	X	X	X	X	X
Sparks, Norma Doctor	X	X	X		X
Sparks, Stephen A.	X	X	X		X
Stecher, Steven & Igarashi, Portia	X	X	X		X
Stein, Jerry and Wendy	X	X	X	X	X
Steinhagen, James & Susan	X	X	X		X
Sterns, Nancy	X	X	X		X
Stone, Mary Isabella	X	X	X		X
Stone, Rebecca	X	X	X		X
Street, Nicole				X	X
Sullivan, Don	X	X	X		X
Sullivan, James	X	X	X	X	X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Summerfield, Yvonne	X	X	X		X
Sussman, Jay	X	X	X		X
Suzie				X	X
Swanson, Ashley	X	X	X		X
Swanson, William	X	X	X	X	X
Sweeney, Sean Keoki				X	X
Sylvester, Linda				X	X
Talaber, Cynthia & Dave	X	X	X	X	X
Taylor, Gabriela				X	X
Taylor, Ken	X	X	X		X
Taylor, Terry	X	X	X		X
Thompson, Tayemi Susan	X	X	X	X	X
Thurston, Anne	X	X	X		X
Tilley, Karen	X	X	X		X
Trapp, Max	X	X	X		X
Trentlage, Sheri & Dave	X	X	X		X
Trevino, Luis	X	X	X	X	X
Valentini, George & Littlefield, Pam	X	X	X	X	X
Valenziano, Beth	X	X	X	X	X
Varnel, Deborah				X	X
Vernon, Ian				X	X
Viluan, Tia				X	X
Vlach, Robert	X	X	X		X
Walden, Diane	X	X	X		X
Walden, Terry	X	X	X		X
Waldrop, Mark	X	X	X		X
Waldrop, Mary	X	X	X	X	X
Waybright, Liz				X	X
Weil, Martin	X	X	X		X
Weiner, Jill				X	X
Welti, Cynthia	X	X	X		X

HAWAI'I DAIRY FARMS

Final Environmental Impact Statement

Consulted Parties					
Respondents and Distribution	Early or Ongoing Consultation, Presentation, or Notification	Comments Received EISPN	Received DEIS	Comments Received DEIS	Received FEIS
Werner, Mariah				X	X
Wesland, Coni	X	X	X		X
White, Allan B.	X	X	X		X
Whitney, William	X	X	X		X
Wiener, Susan	X	X	X		X
Wilcox, Mark	X	X	X		X
Wildman, Kelly	X	X	X		X
Wildman, Randall	X	X	X		X
Williams, Bob				X	X
Williams, Bob and Jeanette	X	X	X		X
Williams, Carol	X	X	X		X
Williams, Jeanette				X	X
Williams, Laura	X	X	X		X
Wollin, Pearl	X	X	X		X
Wolny, Kerry	X	X	X		X
Wolny, Pam	X	X	X	X	X
Wry, Diane				X	X
Wyeth, Hau'onalani	X	X	X	X	X
Yamada, Debbie				X	X
Yamamoto, James				X	X
Yamasaki, Morton				X	X
Yatsuoka, Vanessa				X	X
Yeo, Gwen	X	X	X		X
Zelkovsky, Robert	X	X	X	X	X
Zepeda, Joy				X	X
Zimmerman, Jack	X	X	X		X

INDIVIDUALS

comment on DEIS

Mary Alexander <laakea77@yahoo.com>

Tue 7/19/2016 7:34 AM

To: HDF <hdf@group70int.com>;

To whom it may concern;

Thank you for the opportunity to respond to Hawaii Dairy Farm's Draft EIS.

After reading the DEIS, I can see the time, effort, research, and planning HDF has put into this project. However, I humbly ask you NOT to proceed at the current site for many reasons.

I have been a resident of Kauai since 1990, and lived in Poipu during the early '90s. I have spent many hours of time at Mahaulepu, and can honestly say this area is—as the DEIS notes—a *wahi kapu*. This coastline is pristine—and its aeolian dunes carved by wind are unique—we read there are only two such areas in all of Hawaii, the other being on Moloakai. The water is sparkling—it is truly a rare place where one can go and immerse oneself in nature. I disagree with what was written in the DEIS regarding the 2008 National Park Service Reconnaissance Study. The DEIS indicates this report only indicated that more research needs to be done on this area, but in reality, it adds that "this area is significant (worthy of protection), suitable (there is nothing like it in the federal park system), and feasible (it could be managed), as quoted from the Maiana Mahaulepu website.

I support a dairy being built on Kauai, but disagree vehemently that it be situated in Mahaulepu. Your report acknowledges that while the herd will start at a mere 699 cows, that the dairy is being initially constructed for 2000 cows—which means, on 470 acres of pastureland that HDF indicates, that there will be a density of 23-24 cows per acre. The finding that no significant impact will occur to groundwater, ocean water, and to wind odor is unacceptable to me, especially with your admission of the alluvial clays soil and acknowledgement of the chronic pollution at Waioopili stream. (Just the thought of a massive manure effluent pond on a *wahi kapu* is inconceivable to me.) Although the report says that the stream is not an important recreational area, the reality is that it is polluted, it means the bay is also polluted, as Surf Rider's Blue Water Task Force sampling confirms for the Gillins surf break area. It also indicates substantial drainage problems in the area, and the possibility of run-off into the ocean.

Thank you for including the alternate site information in the DEIS. An inland site, like Kipu, is more appropriate for a dairy. Although HDF rejects the Moloaa area for it can only accommodate 493 cows, I fully support that site. Since it is projected the milk will be shipped off-island for processing, why not utilize smaller dairies statewide—all with less ecological impacts? Why not expand the Moloaa pasture to accommodate approximately 200 additional cows to meet the 699 minimum? I also support the alternative listed for a Mahaulepu agricultural park which grows fruits and vegetables, and could accommodate small herds of goats, sheep, and cattle on a non-industrial scale.

I am grateful that you took the time to prepare the DEIS, but must acknowledge that it reads like a "done deal." The reason is that HDF hired and paid the firm, Group 70 International, to write it. Thus, it is not without bias. In order for a report of this magnitude and importance to be conducted, it must be done by an unbiased third party. Can you imagine the results of such a DEIS if a community group opposing the dairy would have been able to pay for and hire a consultant to do so?

Sincerely yours,

Mary Alexander
5905 Ahakea Street
Kapaa HI 96746

(808) 821-1265



PRINCIPALS

Francis S. Oda, Arch.D.,
FAA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihel
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

Jenna L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeil
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Py Kim
RIBA, AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Mary Alexander
5905 Ahakea Street
Kapaa, Hawaii 96746
laakea77@yahoo.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawaii
Response to Comment on Draft EIS

Dear Mary Alexander:

Thank you for your email received July 19, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The planned improvements and operations at Hawaii Dairy Farms are compatible with and supportive of State of Hawaii and County of Kaua'i land use policies, plans and control related to the natural and social environment. The Proposed Project is consistent with and permitted by applicable land use designations and, as discussed in EIS Section 5.0, will contribute a wide range of benefits to further established goals, objectives and policies. In particular, Hawaii Dairy Farms is consistent with the State and County initiatives for food sustainability and the long-term intended use of Important Agricultural Land on Kaua'i. The dairy is also consistent with the provisions of the State of Hawaii Agricultural Functional Plan, and long-range planning for diversified agricultural use of Māhā'ulepū lands under the County of Kaua'i General Plan and the South Kaua'i Community Development Plan.

Use of the site for dairy operations does not preclude future conservation use of the wider region, such as examined by the U.S. National Park Service in its 2006 to 2007 reconnaissance study. The purpose of a reconnaissance study is to determine whether a full Special Resource Study should be authorized. The reconnaissance study's recommendation was for authorization of further study, *so long as it focuses on non-traditional management alternatives that a) involve local partners and b) include options for continued farm and ranch operations on private agricultural lands* (emphasis added) (NPS, 2008).

The Kāena and Kalihi soil series that underlies the HDF site are described as poorly drained. The designation of "poorly drained" is not an indication of low or poor infiltration, which refers to the ability of water and effluents to enter the soil surface. Said another way, soil "drainage" refers to the movement of water within or through the soil profile rather than entry through the soil surface. Additionally, "poorly drained" soils can exhibit anaerobic conditions, which are important in both the presence and movement of nutrients that improve soils health, most importantly nitrogen and its various soluble forms nitrate, nitrite, and ammonium.

The thick thatch formed by Kikuyu grass greatly improves infiltration of applied water and effluents, as additions of irrigation water and liquid effluent will microbiologically energize the surface soil (EIS, Section 4.11). Stimulated populations of microorganisms are very effective in inactivating pharmaceuticals and additives due to the reduced half-time resulting from enhanced immobilization and degradation by the superactive microbiological community. Microbes such as mycorrhiza effectively transport a variety of needed nutrients effectively into plants, including nitrogen and phosphorus.

As a part of the EIS, alternatives were evaluated that could attain the objectives of the action's purpose and need, and were compared with environmental benefits, costs, and risks of each reasonable alternative against those of the proposed dairy project. Further discussion of alternatives can be found in EIS Section 6.

Of all the alternative actions and locations considered, the planned agricultural operations of Hawai'i Dairy Farm is the only approach that achieves project objectives and meets each of the five Evaluation Criteria described in EIS Section 2.3.4.

The Hawai'i Dairy Farms project emerged from a group of partners and affiliates, including Grove Farm, Finistere Ventures, Kamehameha Schools, Maui Land & Pineapple and Ulupono Initiative. The group conducted grass trials statewide to determine the best site for a rotational-grazing pasture based dairy. In addition to the grass trials, HDF coordinated with landowners of agriculturally-zoned lands in the State, as well as the Department of Agriculture, the Agribusiness Development Corporation, and the Trust for Public Land. The broader team identified, toured and evaluated six parcels of sufficient size: two on O'ahu, two on Hawai'i Island; and two on Kaua'i. Kaua'i was found to be the optimal location, as it met all the operational requirements for pasture-based dairy:

- Relatively flat, contiguous acres to move cows with minimal stress,
- Soils suitable to efficiently utilize applied nutrients for growth of forage,
- Adequate water for irrigation and operations,
- Suitable climate conditions for animals and grass growth,
- Agricultural-zoned land available for 20 years or more of sufficient acreage to support an economically viable dairy, preferably IAL, and
- Access to required operational support elements (trucking, pasteurization, work force, etc.).

In response to comments on the Draft EIS, Ulupono Initiative again searched for agriculturally-zoned land with potential long-term availability that may have become available in the past few years. An additional 1,300 acres of Grove Farm property on Kaua'i in the Māhā'ūlepi area were recently vacated by Pioneer Seed Company. These fields are closer to resorts and residences, and do not provide further benefit to the project or community than the HDF site evaluated in this EIS. Alexander & Baldwin announced in January 2016 that Maui lands in sugarcane will be transitioned to diversified agriculture in the future. However, water rights and access for diversified agriculture must be settled through a forthcoming process, and water availability is currently unknown. Thus Ulupono Initiative, which conducted the research, is unaware of any new property meeting the requirements for a pasture-based dairy that has become available since its initial evaluation.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUJAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner



Sharleen Andrade <sharstar@hotmail.com>

Mon 7/18/2016 8:58 AM

To: HDF <hdf@group70int.com>;

Aloha,

I write to support Hawaii Dairy Farms' draft Environmental Impact Statement (DEIS). I live in Lawai, Kauai and own and operate Andrade's Slaughterhouse and Cattle Company. We are 5th and 6th generation Kauai ranchers. Like our ancestors before us, we are dedicated stewards of our lands with a strong commitment to animal welfare. Our family has been raising and producing beef since the early 1900s.

As a cattle rancher, I have firsthand knowledge about animal management and farming and I know the South Shore very well. I have reviewed Hawaii Dairy Farms' DEIS, and I believe they have sound plans to operate a successful dairy. Hawaii Dairy Farms will be located in Mahaulepu Valley in an area that has been used for cattle grazing for many years. This area is away from the beach, homes and resorts, and zoned Important Agricultural Lands. A pasture-based dairy is the right use of this property.

The DEIS shows that Hawaii Dairy Farms will take great care of their herd and use state-of-the-art technology to assess the health of their cattle. In addition, Hawaii Dairy Farms will work with other Kauai ranchers to transfer and care for cows in various stages of rest and lactation. This collaboration with Kauai's local ranchers strengthens Kauai's ranching industry and our farming and ranching heritage.

I was also pleased to read that Hawaii Dairy Farms' operations will protect water resources and improve the pasture's soil quality, which has been depleted from decades of growing the sugar cane. And, the DEIS says that flies and odor will not affect residents or visitors and that the project will not have a negative impact on surrounding home values.

I have every reason I need to support Hawaii Dairy Farms and its DEIS. Hawaii Dairy Farms will help sustain local people, protect the environment, and diversify our economy.

Mahalo,

Mac Andrade

P.O. Box 276
Lawai, HI 96765

January 3, 2017

Mac Andrade
sharstar@hotmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Mac Andrade:

Thank you for your email of July 18, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Thank you for your supportive comments on the HDF proposed rotational-grazing dairy. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

We appreciate your review of the HDF EIS and its findings that soils will be improved by the additional organic matter, erosional run-off will be reduced through pasture management practices, and HDF monitoring of soil and water conditions will ensure the health and safety of the community and the environment for years to come.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

NO!!!

John Anthony <fivestarkauai@aol.com>

Fri 6/10/2016 4:14 PM

To: HDF <hdf@group70int.com>;

Sent from my iPhone



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AIA, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

John Anthony
fivestarkauai@aol.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear John Anthony:

Thank you for your email of June 10, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read "Jeffrey H. Overton".

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

FW: Hawaii Dairy Farms

-----Original Message-----

From: gaquii@hawaii.rr.com [<mailto:gaquii@hawaii.rr.com>]

Sent: Friday, July 22, 2016 2:10 PM

To: DOH.EPO <DOH.epo@doh.hawaii.gov>

Subject: Hawaii Dairy Farms

Aloha

I would like to voice my concern on Hawaii Dairy Farms.

I was born and raised on Kauai, with so much that has changed since I was young, having a nice, clean place to live without biting flies, pollution, water contamination and a good living is of top priority to me. My grandchildren come to visit us each year from the mainland. They love Popu area because the place is clean. I want to see them enjoy it each year they come.

Due to these concerns, I am against the dairy.

Thank you

Emeline Aquí



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matusuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Emeline Aquí
gaquii1@hawaii.rr.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Emeline Aquí:

Thank you for your email of July 22, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Until 1984, Hawaii produced 100 percent of its milk through local dairies. By 2008, costs for importing feed and other operational expenses had skyrocketed, causing nearly all of the local dairies to close. The two remaining dairies on the Big Island only produce about 9 percent of the state's milk supply, leaving the rest to be imported. The purpose of HDF is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk.

HDF shares your vision for a clean and secure Kaua'i that is food self-sufficient and offers diverse employment opportunities. Roughly 90 percent of goods used in the state, including daily food requirements of residents and visitors, arrive in Hawai'i via ocean and air shipping. The recent announcement by Hawai'i Governor Ige at the 2016 World Conservation Congress in Honolulu, to double local food production in the state by 2030, reflects yet another initiative to advance agricultural self-sufficiency within the State. HDF's objectives to produce more than 1 million gallons of milk annually for local consumption through growing more than 70 percent of the herd's feedstock within the HDF site will play a large role in the food sustainability movement in Hawai'i.

HDF will be the first dairy in Hawai'i to employ rotational-grazing, which utilizes manure as a valuable resource. This is a fundamental difference and advantage over conventional feedlot dairy operations, which typically have insufficient land to recycle the nutrients for uptake by forage plants and instead rely on imported feed and large storage lagoons to hold manure. The rotational-grazing method is cost-effective as it reduces the need to import fertilizer and feed, and minimizes potential impacts to the environment by using 100 percent of the manure as nutrients to grow the majority of the forage for the herd. Benefits of pasture grazing include, but are not limited to, improved soil health, and increased animal health and productivity. The dairy will feature modern facilities and practices that will comply with all applicable Federal and State environmental standards.

Opponents to the dairy have contradicted the findings of HDF's Hawai'i-based expert consultants by using wildly different assumptions and, in several cases, incorrect data. In most cases, the assumptions are based on poorly-managed conventional feedlot dairy operations on the mainland. HDF stands by the environmental analyses conducted for the EIS, which uses reasonable and diligent processes to disclose all probable impacts and demonstrates the dairy will not create nuisance impacts downstream or beyond surrounding agricultural lands.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainage way (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainage ways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass; keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 Geology of Māhā'ulepū and Vicinity displays the volcanic geological history of the area.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west-north-west, and HDF is to the east (EIS Figure 4.16-3).

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and will allow for evaluation of possible contamination sources.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

P.O. Box 473
Lawai
HI 96765
7/17/16



Dear Mr. Overton, My family and I have lived in Kōloa for 25 years. We see that the dairy will soon be installed at Māhā'ulepū, one of the most beautiful places on this island and we feel it will be an environmental disaster. We attended the first community meeting at Kōloa School where not even one member of the audience was allowed to give their opinion. I feel that we have been disregarded as a community, railroaded and bulldozed over as if we are of no consequence. You don't have to be a genius to see what the future holds for this Hawai'i Dairy Farm experiment, Mr. Overton, you just need common sense to prevail over financial gain. I wrote my letters before the EIS and received a DVD from you. It changes nothing. It's almost as if you didn't hear the pleas of our community, about what we know to be true. We live here, we're gardened and farmed here, we know Kōloa. I beg you to listen to us. We do not want to be part of this experimental disaster.

Sincerely
JODI ASEUENA

P.O. Box 473
Lawai
HI 96765
7/17/16

Dear Ms. Hennessey, My family and I have lived in Kōloa for 25 years and we are seriously opposed to the installation of Hawai'i Dairy Farms in this area. I strongly feel that the opinions of this town have not been given any consideration at all. I've attended meetings at the school and the neighborhood center where any input by people who actually live in this neighborhood has been consistently denied. I've written a complaint and have received an EIS DVD. It's almost as if we, as a community, have been totally ignored.

The manner that will be generated, the solid lava rock fields of this area, the water run-off to Waiopili Stream, and the inappropriate choice of this particularly pristine part of our island are of great concern to this community.

I am hoping that HDF will re-consider re-locating to a more welcoming location, because here in Kōloa, Po'ipū and Māhā'ulepū, I see an environmental disaster approaching.

Sincerely
Jodi Aseuena

RECEIVED
JUL 20 2016
GROUP 70 INT'L

P.O. Box 473
LAWAI
HI, 96765
7-17-16

DEAR MR. OVERTON,
MY NAME IS VICTOR ASCUENA
AND I'M A DOORMAN AT THE GRAND
HYATT KAHAI, WHERE I STAND IN FRONT
OF THE HOTEL EIGHT HOURS PER DAY,
& FIVE DAYS PER WEEK. IF THE DAIRY
IS BUILT I WILL BE BREATHING THE FOUL
SMELL EVERY DAY.
MY FAMILY AND I LIVE IN KOLOA,
AND I'VE HEARD NOTHING BUT NEGATIVE
COMMENTS ABOUT THE IMPACT AND THE
WILL HAVE ON OUR COMMUNITY AND THE
ENVIRONMENT. THE FLIES, THE RUN OFF
INTO THE OCEAN, CATTLE DISEASES, WATER
POLLUTION AND WASTE DISPOSAL ARE MY
MAIN CONCERNS AND I DO NOT THINK
THAT THE EIS WHICH WAS DONE BY HDF
HAS CONVINCED ME THAT THIS IS A GOOD
THING. PLEASE DO EVERYTHING YOU CAN
TO CONSIDER THE FEELINGS OF THE LOCAL
POPULATION. THIS WILL BE AN ENVIRON-
MENTAL DISASTER.

SINCERELY,
Victor G. Ascuena



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AIA, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Niheli
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AIA, LEED AP

Christine Mendes Ruotola
AIA, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
IBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Victor Ascuena
P.O. Box 473
Lawai, Hawaii 96765

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Victor Ascuena:

Thank you for your email of July 24, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Hawai'i Dairy Farms (HDF) aims to take steps toward Hawai'i's food security, economic diversity, and sustainability through significantly reducing Hawai'i's reliance on imported milk from the mainland United States, which currently accounts for roughly 90 percent of our statewide supply.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix I.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaua'i and those species already in Māhā'ulepū Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

Victor Ascuena
January 3, 2017
Page 2 of 2

Hawaii Dairy Farm

pbaldwin@knudsentrust.org

Sat 7/23/2016 10:38 AM

To: HDF <hdf@group70int.com>;

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 Hydrology and 4.17 Surface Water Resources & Nearshore Marine Environment and Appendices E and F contain further information on the analyses.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and will allow for evaluation of possible contamination sources.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the DEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Aloha,

I am a concerned resident of Poipu. Our families history goes way back on the island and we have deep roots.

I understand your belief a dairy would be an appropriate use of the agricultural land on which you propose to locate it. I agree it is an appropriate use. I also understand the concerns of the residents and businesses in the area that rely so heavily on tourism for income. This includes myself and it would be devastating to the area if your dairy does impact the it in a negative way.

I would be in support of the dairy if the group that is attempting to operate it would commit in public to shut the dairy down if the results were negative to tourism. Im not sure how that would be crafted, but if you are so certain there are no negative impacts, then commit to shut it down if it doesn't pan out, and you would have my support.

Mahalo

Peter Baldwin



January 3, 2017
 Peter Baldwin
 pbaldwin@knudsentrust.org

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
 Maha'ulepu, Koloa District, Kaua'i, Hawai'i
 Response to Comment on Draft EIS

PRINCIPALS

- Francis S. Oda, Arch.D.,
FAA, ACP, LEED AP
- Norman G.Y. Hong
AIA
- Sheryl B. Seaman
AIA, ASID, LEED AP
- Roy H. Nihei
AIA, CSI, LEED AP
- James I. Nishimoto
AIA
- Stephen Yuan
AIA
- Linda C. Miki
AIA
- Charles Y. Kaneshiro
AIA, LEED AP
- Jeffrey H. Overton
AICP, LEED AP
- Christine Mendes Rucicola
AICP, LEED AP
- James L. Stone, Arch.D.,
AIA, LEED AP
- Katherine M. MacNeill
AIA, LEED AP
- Tom Young, MBA
AIA
- Paul T. Matsuda
PE, LEED AP
- Ms. Ry Kim
RIBA, AIB
- Craig Takahata
AIA
- OF COUNSEL
- Ralph E. Portmore
FAICP
- Hiroshi Higb
AIA

Dear Peter Baldwin:

Thank you for your email of July 23, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Section 4 of the EIS provides specific actions proposed to minimize potential impacts in the mitigation measures for each environmental resource category. Sections 4.20 and 4.26 address the potential cumulative effects of the proposed action. The plans for the dairy facilities and operations are subject to numerous County and State regulatory reviews, which include requirements to implement permit conditions to minimize potential impacts. Monitoring requirements will also provide accurate feedback on the effectiveness of measures, which will be refined through ongoing active management.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.
 Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
 Principal Planner

NO TO DAIRY FARM

Gloria Bandsma <gbandsma@hawaii.rr.com>

Sun 7/24/2016 9:32 AM
 To: HDF <hdf@group70int.com>;

To whom it may concern,

I have been following this dairy farm information very closely. We do not want a dairy on that part of the island. We have had dairy farms on the south and north side of the island and it never works. We had buffalo here years ago and they had to close because of the pollution that went from there pasture to the ocean.

Over 60 years ago I lived in California, and we had a very large community of dairy farms in Cypress. The stink and flies were unbelievable. They finally moved them all away from where people were living
 PLEASE find someplace else to do this. Our island is to fragile.

Gloria Bandsma
 gbandsma@hawaii.rr.com



Jeff Overton Mayor Bernard Carvalho HDF
 Group 70 International County Of Kauai PO Box 1690
 925 Bethel St. 5th floor 4444 Rice St. Koloa, HI 96756
 Honolulu, HI 96756 Lihue, Kauai 96766

The Poipu/ Koloa area employs over local 2000 people directly, and many more people indirectly, in the visitor industry while generating a substantial amount of Kauai County tax income through the collection of property taxes. The visitor is very sensitive to environmental situations that would affect negatively their experience when visiting a destination such as Poipu (such as manure odors from the dairy due to the direction of the normal trade winds) and can easily chose several other places to visit. The EIS states that on only a few occasions would there be an odor impact from the Dairy impacting the Poipu vacation area. Only one occasion could cause terrible economic damage to the area because of negative publicity.

Can the HDF organization guarantee there will be no significant loss of tourism demand, local jobs, and property values in the Poipu/Koloa area (therefore County property tax revenues) due to their operation at Mahaulepu, as the EIS report infers?

The EIS states the Dairy will create less than 20 new jobs and under \$60000 in new annual Kauai County revenue. Ten of the average priced rental condominiums in Poipu (there are a few hundred) generates \$60000 in County property tax revenue. Is the Dairy worth the risk to this very vital employment and tax revenue generator?

Tom Bartlett
 PO Box 826
 Koloa, HI 96756

*UNDISCOVERED
 ADDRESS*

Jeff Overton Mayor Bernard Carvalho Laura McIntyre
 Group 70 International County of Kauai State Of Hawaii, DOH
 925 Bethel St. 5th Floor 4444 Rice St. 1250 Punchbowl St.
 Honolulu, HI 96813-4307 Lihue, Kauai 96766 Honolulu, HI 96713

There is a lot of concern that the location of the HDF site at Mahaulepu will impact the drinking water for the Koloa/ Poipu area. The County of Kauai wells in question provide the bulk of the drinking water to the local residents. The EIS states that there will be no impact or compromising of the drinking water sources for Koloa and Poipu areas therefore no threat of health problems caused to the local people in this community nor costs incurred by the County of Kauai to correct any drinking water problems that may be caused by the HDF dairy operation.

Can the HDF and Ulupono Initiative organization guarantee that there will be no negative impact of the drinking water system due to the HDF operation at Mahaulepu and no cost to the County of Kauai to correct any drinking water pollution caused by the HDF dairy operation?

Secondly, the EIS stated that at one point there will be a water shortage ("shortage of well water by 2035"). The numbers appeared to be equivalent to the amount of water the HDF operation will need. Can Group 70 elaborate on the water usage by HDF and the future water shortage indicated and where new water will come from?

Thank you.
 Tom Bartlett
 PO Box 826
 Koloa HI 96756

*SCIENTIFIC CULTURAL
 SERVICES
 1357 E 6th St
 Koloa HI 96756*



Tom Bartlett
January 3, 2017
Page 2 of 2

January 3, 2017
Tom Bartlett
P.O. Box 826
Kōloa, Hawai'i 96756

PRINCIPALS

Francis S. Oda, AIA, AIA, ASID, LEED AP
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Saaman
AIA, ASID, LEED AP

Roy H. Nihel
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucicola
AICP, LEED AP

James L. Stone, AIA, AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Higb
AIA

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ūlepi, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Tom Bartlett:

Thank you for your letters received on July 25, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Roughly 90 percent of goods used in the state, including daily food requirements of residents and visitors, arrive in Hawai'i via ocean and air shipping. The recent announcement by Hawai'i Governor Ige at the 2016 World Conservation Congress in Honolulu, to double local food production in the state by 2030, reflects yet another initiative to advance agricultural self-sufficiency within the State. HDF's objectives to produce more than 1 million gallons of milk annually for local consumption through growing more than 70 percent of the herd's feedstock within the HDF site will play a large role in the food sustainability movement in Hawai'i.

Section 4 of the EIS provides specific actions proposed to minimize potential impacts in the mitigation measures for each environmental resource category. Sections 4.20 and 4.2.6 address the potential cumulative effects of the proposed action. The plans for the dairy facilities and operations are subject to numerous County and State regulatory reviews, which include requirements to implement permit conditions to minimize potential impacts. Monitoring requirements will also provide accurate feedback on the effectiveness of measures, which will be refined through ongoing active management.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Sabra Basler

PO Box 1238
Kalaheo, Kauai HI 96741

July 24, 2016

Attn Laura MacIntyre
Hawaii Department of Health

Attn Jeff Overton
Group 70 International, Inc

Attn Hawaii Dairy Farms

via email

Dear Reader,

Let me start by saying I live Kalaheo, Kauai. Miles from the dairy, but its like my back yard. I love going with my pup along the coastline from Salt Pond to Maha'ulepu here on Kauai. The wild nature of the area ...in that it is not developed is charming. I am a world diver and have seen coral reefs and bays ruined by overfishing, poisoning, trash and nitrogen death zones. That's why I am so concerned about the effects of the effluent from the cows on the ocean. I shared this concern earlier and do not feel that my concerns have been addressed correctly.

In volume two it clearly states that all sources of water that flow through the project site flow to the ocean. Regarding the TNWRE report that states "based on existing data the total nitrogen level under existing conditions" but alas the existing conditions do not include the dairy cows. How a half a million pounds of nitrogen can become 10,000 pounds of nitrogen making it to the ocean defies logic. Please address the real nitrogen load that makes it to the sea. This doesn't address the fertilizers (unnamed) that make it to the sea. These "nutrients" are detrimental to our fragile reefs and what remains of our marine life... fish, mammals, birds.....

Volume two concludes that it is important to study the effects of clear cutting before hand so that controls can be put in places. Where were the controls and

studies before the 480 acres were cleared. The endangered gallinules and stilts are some of my favorites birds to watch. How was the staff trained to look for these birds and nests?

On perusing volume two the section on the insects that states "Stomoxys adults feed on the blood...or nearby humans." Really, how are we to enjoy our island as these flies spread. We have all seen what happened to the birds on Maui with the introductions of mongooses. Kauai can't make the same mistakes ...

The traffic is a concern as the number of deaths on our roads from tourists and locals alike being hit by a truck or coming in the way of a truck is not addressed. We know that per so many miles driven there are a set number of accidents. What or the deaths and accidents associated with the increase in traffic?

If the milk is for Kauai, why isn't a processing plant being built? Maybe reduce herd size and make it organic! Make cheese. Butter. Small kine scale and keep keiki happy and healthy?

Thank you for your consideration of my concerns and thank you for the opportunity to share them with you.

Respectfully,

Sabra Basler

via email

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaua'i and those species already in Māhā'ulepū Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

EIS Sections 4.18 and 4.24 include an evaluation of roadways and traffic conditions, along with potential impacts of the dairy farm construction and operation. At the committed herd size of 699 cows, 12 vehicle trips per day would result from HDF operations over the long-term. A summary of all regional traffic with projections to 2035 is shown in Table 4.18-1 of the EIS; HDF trips would increase projected traffic by less than one-twentieth of one percent (0.17 percent).

For HDF operations at the contemplated herd size of up to 2,000 mature dairy cows, additional vehicular trips are projected at 11 more per day than at the committed herd size. The projected trips totaling 23 vehicles per day would include employees and delivery vehicles, and represents an increase in the regional traffic of less than one-third of one percent (approximately 0.30 percent).

Under the proposed action, HDF would sell raw milk wholesale to a processor and packager. Milk processing, including pasteurization, bottling, and packaging of milk, would be done independently of the dairy. For more information on processing, see EIS Section 3.6.

Dairy operations in Hawai'i face significant hurdles, including a monopoly milk processor, limited breeding stock, and a need to educate the consumer on benefits of truly local milk. For Hawai'i to re-establish its dairy industry, it will require the introduction of advanced dairy farming technologies, efficient operational processes, and monitoring to ensure environmental protection standards are upheld. For more information on the purpose and need for the project, see EIS Section 2.0.

Cheese and butter with a smaller herd size are alternatives that do not meet the criteria proposed by this EIS. As a part of the EIS, alternatives were evaluated that could attain the objectives of the action's purpose and need, and were compared with environmental benefits, costs, and risks of each reasonable alternative against those of the proposed dairy project. Of all the alternative actions and locations considered, the planned agricultural operations of Hawai'i Dairy Farm is the only approach that achieves project objectives and meets each of the five Evaluation Criteria described in EIS Section 2.3.4. Further discussion of alternatives can be found in EIS Section 6.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUJAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Bator, et al Page 2-2
Furthermore, "... Within the study area, this full age span of high-island volcanics can be seen at one time. The study area also displays a visible geologic record of global sea level changes over the last 300,000 years, and a 10,000-year fossil trove of Hawai'i lifeforms.

Waimea Basalts
The Hā'upu mountains that cross the study area are made up of the most ancient volcanic series in the high islands, the Waimea Canyon Basalts. These formed during the shield-building stage of the Kāua'i volcano, as eruptions gradually built up its sides and widened its base. Most of the Hā'upu range is part of the ancient Nāpali member of the Waimea series, dating from 4.35 to 5.1 million years old. The caldera of Mt. Hā'upu is the separate Hā'upu member, which remains undated. (Blay & Siemens 2004) *Waimea...*

"Kōloa Volcanics, Lithified Dunes (The Māhā'ulepū formation is an exceptionally rich ground for avian and other fossils. According to Smithsonian Institute researchers, the majority of significant avifauna fossils found in Hawai'i were collected along this coast. Many were documented in the 1970s and 1980s, a period when the dunes were active and shifting, exposing pockets of fossils, including bones from three species of goose, a long-legged owl, and a flightless rail. Though vegetation has since partially stabilized the dunes, portions of loose limestone still sometimes break off to reveal new and startling fossil finds. (James 2007) ..."

"Paleoecologists excavating there have discovered an unparalleled array of plant and animal fossils and human remains from both pre- and post-contact Hawai'i; these are described later in this section (see Makauwahi Cave)

Makauwahi Cave and Sinkhole
A large limestone cave system, hollowed out by groundwater, permeates the dunes of the Māhā'ulepū Formation. The best known part of this cave system is the Makauwahi cave and sinkhole... of Punahoa Point. It is the state's only solution limestone cave (OSP 1992), and has been described as "the largest limestone cave complex, the richest fossil site and the oldest dated ecological site in the Hawaiian Islands." (Hoopaja 2006). Discoveries at Makauwahi were featured in public television's 2001 NOVA series on worldwide species extinction. In the early Holocene, the Makauwahi Cave was entirely roofed and had a dry floor. But as sea levels rose the nearby ocean increasingly breached the cave. About 7,000 years ago the roof at the center of the cave collapsed, forming a sinkhole open to the sky, and internal collapses sealed the cave off from the sea. Groundwater filled the cave and created a lake. During the millennia that followed, natural soils, sand, bones, plant remains, shells, and human artifacts and debris from the surrounding area swept into the sinkhole lake, building up thick layers of a peat-like substance that eventually turned the lake into a swamp. (Burney & Kikuchi 2006) ...

Today the sediments are 10 meters deep at the sinkhole's center, and the sinkhole floor sits 1-2 meters above sea level. A coating of silty clay—deposited mostly during the 20th century—cloaks the earlier peat-like strata. The water table, fed by underground springs, sits just below the clay surface. The sinkhole's sheer walls range in height from 6 to 25 meters, forming an irregular opening to the sky that measures 30-35 meters across. (Burney et al. 2001)

Cave passages connect to the north and south ends of the sinkhole. The south passage leads to culturally sensitive areas and is protected from public access. The north passage, where researchers and visitors enter the cave, has a crawl-in entrance through a sheer limestone bluff bordering Wai'ōpili Stream.

To protect this unique resource and make it available for research, the private landowner leases the sinkhole and 17 acres around it to the nonprofit Makauwahi Cave Reserve. Research at the site began in 1992 and first received federal funding in 1996. Sponsors have included National Science Foundation, NOAA, National Tropical Botanical Garden, Fordham University, the Smithsonian Institution, USDA, Kāua'i Community College, and the National Geographic Society ..."
Please, "No Action Alternative" – in this *dEIS* process – A federal *EIS* is required – keep Us on mailing list.

Sincerely with Aloha,

Bonnie P. Bator & 'Ohana



Bonnie P. Bator & 'Ohana
P.O. Box 30848
Anahola, Hawai'i 96703-0848
16 June 2016

Consultant: Jeffrey H. Overton
Group 70 International, Inc.
925 Bethel St – 5th Floor
Honolulu, Hawai'i 96813-4393

Office of Environmental Quality Control
235 S Beretania St – Suite 702
Honolulu, Hawai'i 96813
**State of Hawaii – Department of Health Virginia Pressler, M.D.,
Laura McIntyre, Environmental Planning Office
1250 Punchbowl St - Honolulu, Hawai'i 96813**

**RE Draft Environmental Impact Statement (dEIS) Project Number: 212061-04
Proposed dairy at Maha'ulepū, Po'ipu, Kāua'i, – "Hawai'i Dairy Farms"**

To Whom It May Concern;

Aloha! On behalf of my 'Ohana and collective consciousness' I deeply appeal to the 'Powers that Be' to Cease & Desist from pursuing this proposal – which clearly will result in devastating consequences to the myriad of nearly infinite magnitude lifeforms, at Maha'ulepū.

Is the underlying 'hidden agenda' - when an accident (note not an 'if') occurs, to turn the lands at TMK's: (4) 2-9003:001 & (4) 2-9 001001 into a gated community and/or 'Gentlemen' Farmers exulting sub'd?

"At the request of Senator Daniel K. Inouye, in 2006 the National Park Service agreed to conduct a reconnaissance survey of Māhā'ulepū and nearby areas on the island of Kāua'i"

The reconnaissance survey report provided the following preliminary evaluations of Maha'ulepū:

- "The study area shoreline corridor, Hā'upu mountain range and Hulē'ia Stream are deemed nationally significant on the basis of natural and cultural resources including geologic landforms, rare species and habitats, and features central to stories of native Hawaiian and United States history. Collectively these areas comprise a relatively unspoiled and increasingly threatened coastal landscape that provides unique opportunities for public enjoyment, interpretation and scientific study.
- Resources in these areas represent themes and types suitable for protection within the framework of the national park system and not otherwise adequately protected in the state or nation. Volcanic features of the study area represent a stage and range of geologic development of the Hawaiian high islands that is not featured at other Hawai'i parks. Landforms and fossils of the Māhā'ulepū coast illustrate the reality of global climate and sea level change, as well as the impacts of human settlement on native ecosystems. An extensive and undeveloped Hawai'i shoreline within easy reach of population centers, such as that found in the study area, is a rare and rapidly vanishing type of recreational resource prized by U.S. citizens and international visitors as well as Hawai'i residents. Protection and management of this resource type is currently inadequate at federal, state and local levels.
- The study area's significant natural and cultural resources are of a collective size and configuration to be feasibly managed for resource protection and public enjoyment at reasonable cost, provided that NPS, affected landowners, and interested state and local entities work in ongoing partnership to identify and reduce resource threats, manage access, and ensure long-term protection of the area's overall scenic quality.

Based on these preliminary evaluations, the National Park Service Pacific West Region recommends that a Special Resource Study be authorized under the stipulations of Public Law 105-391"

Department of Health, Dr. Pressler, please STOP this farce & accident waiting to ensue 'if' allowed.



January 3, 2017

Bonnie P. Bator
P.O. Box 30848
Anahola, Hawaii 96703-0848

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawaii
Response to Comment on Draft EIS

Dear Bonnie P. Bator:

Thank you for your letter dated June 16, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawaii's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands (IAL) to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawaii's dairy industry.

The development and long-term operation of HDF will be in full compliance with its agricultural State Land Use District designation, ALISH classifications, and County zoning. The dairy farm will embody the intent of the IAL designation per the Hawaii State Constitution, by using these protected lands for the intended purpose of diversified agriculture, food production and agricultural self-sufficiency. HDF's development of a dairy also supports the "secondary intent" for lands in the Agriculture land designation, to provide an opportunity for Kauai citizens to reside in an agricultural community.

Use of the site for dairy operations does not preclude future conservation use of the wider region, such as examined by the U.S. National Park Service in its 2006 to 2007 reconnaissance study. The purpose of a reconnaissance study is to determine whether a full Special Resource Study should be authorized. The reconnaissance study's recommendation was for authorization of further study, so long as it focuses on non-traditional management alternatives that a) involve local partners and b) include options for continued farm and ranch operations on private agricultural lands (emphasis added) (NPS, 2008).

PRINCIPALS

Francis S. Oda, Arch.D.
FAA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Saaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucicola
AICP, LEED AP

James L. Stone, Arch.D.
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

Bonnie P. Bator
January 3, 2017
Page 2 of 2

HDF's means to attain project Objective 8 (EIS Section 2.3.3 Project Objectives) to "Protect and enhance the area's natural, cultural, social and economic environment through sound agricultural planning, preservation of open space and protection of sensitive resources, and development of economic benefit" are thoroughly explained in the EIS. HDF stands by its analysis of impacts based on evaluations conducted by reputable, local technical consultants. These consultants have reviewed the reports appended to, or referenced in, your letter and the rebuttals are expressly incorporates these by reference and encloses the rebuttals herewith. HDF is confident that the dairy design and operation will be protective of the environment and serve as a model for sustainable agriculture in the Islands.

The State of Hawaii Department of Health (DOH) Clean Water Branch (CWB) conducted a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Po'ipu/Kōloa watershed. DOH CWB expressed concern in the survey results that the number of injection wells and cesspools in the Po'ipu/Kōloa watershed are impacting the waters of the Waipili Ditch. This is largely on the different geological and hydrological composition of the watersheds. Groundwater in the highly urbanized Po'ipu/Kōloa watershed is calculated to move an average of 10 feet per day. The groundwater in the Māhā'ulepū sub-watershed has a calculated velocity on the order of 1.2 feet per day. The Sanitary Survey identifies the Kōloa karst topography and lava tube system that straddles the Po'ipu/Kōloa watershed and the Māhā'ulepū sub-watershed as a possible subterranean transport of injection well and cesspool effluent to the Waipili Ditch.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Opposition to HDF - Environmental Impact Statement

Shelley Bay <shelleybay@icloud.com>

Sun 7/17/2016 9:12 AM

To: doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; HDF <hdf@group70int.com>; jim@hawaiidairyfarms.com <jim@hawaiidairyfarms.com>;

cc: Greg <gbay@earthlink.net>;

To Whom It May Concerned, Laura, Jeff, et al,

Thank you for giving us an opportunity for public comments on the EIS re the proposed HDF.

One of the many elements that is not considered is the effect that the dairy farm would have on Poipu Kai, and in particular, the Grand Hyatt Hotel. The Grand Hyatt is a magnet for high-valued tourism, conferences, and corporate support. To go ahead with this project, would not only have an irreversible impact on the immediate area around the proposed dairy farm, but also on the entire Poipu area. Such a dairy would negatively impact values of houses, condos and businesses. Tourism is the life blood of Kauai.

Not only would the dairy farm have negative impact on the economy, but also clearly on the ecology, including but not limited to ground water, soil contamination attracting flies and insects, and spreading possible disease.

The dairy farm would create a very small number of jobs with a disastrous impact on this pristine area. It would have significant negative impacts on Kauai as a whole.

One thing that has been appreciated over the years is that the city council and Kauai regulators have taken a slow growth, conservative approach of development of any kind in Kauai. This approach is responsible for maintaining Kauai's appeal to so many residents and visitors. It seems there is an overwhelming preference to maintain that strategy now and in the future. So the dairy farm proposal goes against the grain of that successful and appropriate strategy.

Kauai makes it a policy to protect sacred lands. Although Mahalupu beach may or may not be a sacred ancestral site, to many of the residents that enjoy the undeveloped, pristine beach area, it is sacred, a jewel of the south in Kauai.

We cannot understand how the proposed dairy farm has gotten to this point considering the above items as well as the negative outcry from local residents plus visitors who consider Kauai their primary choice of vacation venue year after year. Please know that we and our neighbors at the Poipu Sands condo complex strongly urge you to not issue any permits or licenses for the dairy farm.

You can respond to this email or add our email addresses to your future correspondence:

gbay@earthlink.net
shelleybay@icloud.com

Sincerely,

Greg & Shelley Bay



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Niheli
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, AIA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACP

Hiroshi Hida
AIA

January 3, 2017

Greg and Shelly Bay
gbay@earthlink.net
shelleybay@icloud.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Mahāʻulepi, Kōloa District, Kauaʻi, Hawaiʻi
Response to Comment on Draft EIS

Dear Greg and Shelly Bay:

Thank you for your email of July 17, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Roughly 90 percent of goods used in the state, including daily food requirements of residents and visitors, arrive in Hawai'i via ocean and air shipping. The recent announcement by Hawai'i Governor Ige at the 2016 World Conservation Congress in Honolulu, to double local food production in the state by 2030, reflects yet another initiative to advance agricultural self-sufficiency within the State. HDF's objectives to produce more than 1 million gallons of milk annually for local consumption through growing more than 70 percent of the herd's feedstock within the HDF site will play a large role in the food sustainability movement in Hawai'i.

Greg and Shelly Bay
January 3, 2017
Page 2 of 2

The planned improvements and operations at Hawai'i Dairy Farms are compatible with and supportive of State of Hawai'i and County of Kaua'i land use policies, plans and control related to the natural and social environment. The Proposed Project is consistent with and permitted by applicable land use designations and, as discussed in EIS Section 5.0, will contribute a wide range of benefits to further established goals, objectives and policies. In particular, Hawai'i Dairy Farms is consistent with the State and County initiatives for food sustainability and the long-term intended use of Important Agricultural Land on Kaua'i. The dairy is also consistent with the provisions of the State of Hawai'i Agricultural Functional Plan, and long-range planning for diversified agricultural use of Maha'ulepū lands under the County of Kaua'i General Plan and the South Kaua'i Community Development Plan.

As part of the EIS process, the HDF project is subject to a historic preservation review by the State Historic Preservation Division under Hawai'i Revised Statute Chapter 6E and Chapter 13-284. An Archaeological Inventory Survey (AIS) and a Cultural Impact Assessment were conducted by Scientific Consultant Services for the proposed project. Sections 4.7 and 4.8 of the EIS provide an evaluation of archaeology and cultural resources, with the full reports in Volume 2, appendices G and H.

The State Historic Preservation Division accepted the AIS on December 19, 2016 (Appendix G). SHPD concurs with the significance assessments and mitigation recommendations in the AIS, which identifies the 14 plantation-era sites within the project area as significant only under Criterion d (information potential). The letter states no further work is recommended for these sites (50-30-10-2251 through 2262). Two sites outside the Project Area, an enclosure (Site-2250) and a petroglyph complex (Site-3094), were assessed as significant under Criterion d (information potential) and e (cultural value). The SHPD letter states that the current proposed project will not affect these two sites, and no further mitigation is recommended for the project.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 24, 2016

Group 70 International, Inc.
Attn: Jeff Overton
925 Bethel Street, 5th Floor
Honolulu, HI 96813



Thank you for the opportunity to address the Hawai'i Dairy Farms (HDF) Draft Environmental Impact Statement (DEIS). I found the DEIS created by HDF's consultant, Group 70, to be a very extensive report and opinion as obviously directed by their client, HDF. I understand the Hawai'i State Office of Environmental Quality Control assisted in creation of the DEIS.

Following are my comments, very simple and not containing a lot of facts and figures, just my personal experiences living close to dairy farms and my impressions since HDF commenced their public informational meetings and published promotions of their planned dairy about two and a half years ago.

During the two and a half years I have become very opposed to establishment of HDF's Dairy. HDF continually feeds the public misinformation.

Yes, I live in Poipu and am a proud member of Friends of Maha'ulepu and the Surfrider Foundation. Rather than being brainwashed in opposition to the dairy I carefully listened to the facts and figures provided by respected scientists and knowledgeable persons and am appalled. The DEIS seems to have an answer to everything and I believe it is an attempt to defraud the good people of Kauai. Is there any hope the dairy will be defeated? Maybe not considering the wealth and power behind HDF but my wife and I will continue to send what money we can and expend the effort to help mitigate this impending disaster. We have lived on Kauai for about 30 years and lived in different areas of the Island.

Here are a two examples of HDF's lack of honesty.

HERD SIZE

I am confused, originally HDF said about 2,000 cows and I still see this number in various places. Now they are publicizing "no more than 699 mature dairy cows" I guess this is for starters but they are misleading us with these kind of statements. As an example, just today (7/24/16) they had an article in the Garden Island News stating in part of a paragraph, "Our committed herd size will have no more than 699 mature dairy cows". How can they say no more than? What happened to disclosure to the public of probably eventual 2,000 cows if all goes well? 2,000 is stated in the DEIS.

In addition, I understand "dairy operations of more than 700 cows (699 is a magic number) require additional regulatory review by DOH of an updated Wastewater Management Plan for a large concentrated animal feeding operation. Not sure if this has been granted, I am guessing not considering my opinion of HDF's positions on circumventing government requirements.

DAIRY ODOR

I formerly lived for 10 years in the farming and logging community of Enumclaw, Washington, about 40 miles south-east of Seattle. My home was on a hillside about 200 feet in elevation above two small



dairies, each with herds of 25 to 50 cows. We were fortunate we did not experience biting flies but the odor at my home from the dairies was particularly pervasive of cow manure and urine. Originally these farmers distributed cow manure and urine contained in a "honey wagon" that traveled the fields and emitted what it was carrying from a small low level spreader. We would get odor but not so bad as later these farmers up-scaled their operations by employing "gun irrigation systems" that sprayed large areas with liquefied cow manure and urine. This irrigation operation definitely increased strong cow odors to the area and my home, particularly when the wind was blowing. It is hard to contemplate the amount of cow manure and urine odor that would travel downwind by the prevailing trade winds from HDF's gun irrigation system to the resort and residential areas of Poipu and Koloa. And, there would be other odor creating activities. As a reminder, when driving on Kuhio highway near the former dairy in Moloaa, Kauai, it was always apparent you were approaching the dairy, a relatively small dairy. I do not believe HDF's statements that their dairy would be pretty much odor free, they say not to the Poipu resort areas being too far away. Why has the Grand Hyatt filed a suite if they are not concerned? I am very fearful Kauai's primary economic, job creating and tax generating business of tourism would be severely harmed.

This concludes my response to HDF's DES.

I request the Hawaii Dairy Farms proposed dairy in the Maha'ulepua valley be denied.

Very truly yours,

Allan M. Beall


1641 Mākanui Road
Koloa, HI 96756

January 3, 2017

Allan Beall
1641 Mākanui Road
Kōloa, Hawai'i 96756

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Allan Beall:

Thank you for your letter dated July 24, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

HDF will be the first dairy in Hawai'i to employ rotational-grazing, which utilizes manure as a valuable resource. This is a fundamental difference and advantage over conventional feedlot dairy operations, which typically have insufficient land to recycle the nutrients for uptake by forage plants and instead rely on imported feed and large storage lagoons to hold manure. The rotational-grazing method is cost-effective as it reduces the need to import fertilizer and feed, and minimizes potential impacts to the environment by using 100 percent of the manure as nutrients to grow the majority of the forage for the herd. Benefits of pasture grazing include, but are not limited to, improved soil health, and increased animal health and productivity. The dairy will feature modern facilities and practices that will comply with all applicable Federal and State environmental standards.

The herd size for HDF is consistently represented as the potential maximum number of cows guided by the results of the nutrient analysis which reflects the carrying capacity of the land (EISPN Section 2.3 *Proposed Action*; EIS Section 1.2 *Proposed Project*). The distinction between the herd sizes and permit differences is explained in the EIS Section 2.4 *Planned Dairy Development on Māhā'ulepū Agricultural Lands*. During the public scoping meeting, participants expressed an interest to understand impacts of the committed herd size (up to 699 mature dairy cows). HDF agreed to analyze and present impacts at both the committed and contemplated (up to 2,000 mature dairy cows) herd size. Therefore, the probable impacts of the potential contemplated herd size are also analyzed and clearly identified in the Draft and Final EIS.

HDF is committed to establishing a herd of up to 699 mature dairy cows to demonstrate the pasture-based system as an economically and environmentally sustainable model for Hawai'i. Precision agricultural technology that monitors cows' health, grass productivity, and effluent management will be used to ensure environmental health and safety, as well as best management practices, and help determine the ultimate carrying capacity of the land.

With proven success at a herd size of 699, HDF will contemplate the possibility of expanding the herd in the future.

For dairy operations with 700 or more mature dairy cows, regardless if the operation is feedlot or pasture-based, additional regulatory review and permitting by the State Department of Health would be required. The application process for a National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) permit includes public notification and input. At the discretion of HDF, management may choose to submit an application to expand operations up to the carrying capacity of the land, which is estimated to be up to 2,000 productive milking dairy cows. Permit process compliance would be followed at such time HDF may decide to pursue an expanded operation.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm, LLC. Lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix I.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the DEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/0REQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 24, 2016

Group 70 International, Inc.
ATTN: Jeff Overton
925 Bethel Street, 5th Floor
Honolulu, HI 96813



RE: Response to Hawaii Dairy Farms DEIS

Dear Mr. Overton,

My main concern regarding an industrial dairy in the Maha'ulepu area on the Southside of Kauai is water quality – from the ground, to the streams and then into the ocean. I am a thirty-year permanent resident of Poipu and live just a mile and a half from the proposed dairy site. I love the beauty and outdoor activities afforded all of us who are lucky enough to either visit or live on Kauai. I spend a minimum of three days a week in the ocean participating in a water workout with thirty to fifty people at Poipu Beach (just downstream of Maha'ulepu).

I appreciate that Hawai'i Dairy Farms (HDF) has chosen to comply with producing an environmental Impact Statement (EIS) and am impressed with their intentions of keeping the operation modern, sustainable, clean and neighborhood-friendly, but I also know that all of that will be impossible to do in reality. As a member of Friends of Maha'ulepu (FOM), we have put in two and a half years of work, research and information-gathering on industrial dairies and their impacts. Our information is based on scientific documentation and first-hand experiences of people who have lived on or around dairy farms, and their stories are all the same. There WILL be problems with odors, biting flies and pollution (noise, water, ground, air). I don't believe that all of "them" are wrong and just "you" (HDF) are right.

Regarding the polluted Waiopili Ditch, you can hide behind the Hawai'i Department of Health Clean Water Branch's (CWB) statement that it is a man-made drainage on private property, and is not an inviting recreational body of water utilized by people (see HDF DEIS 4.17.2 Surface Water Quality, page 4-62), but the fact of the matter is it is a well-used and popular place at its mouth to the

ocean for children and adults to play in. FOM even has the pictures to prove it – plus I've been there myself! It has already tested out as highly polluted, and then the impact of an operation such as an industrial dairy will be added to the area – what do you think that is going to do to the pollution levels? With all of your plans to contain the polluted-bearing wastes on dairy property, there can never be a guarantee that 100% of it will stay on property under any conditions. Everything runs down to the ocean. Trying to do the best you can isn't good enough in an area that is closely surrounded by a high revenue-producing visitor destination.

As per HDF DEIS 4.17.4 Probable Impacts and Mitigation Measures, page 4-65, I appreciate that HDF intends to be in compliance with Federal and State Clean Water regulations but where does HDF get the idea that they've received confirmation of exemption for maintenance of existing drainage ditches from the Honolulu District, U.S. Army Corps of Engineers (USACE) in 2013? USACE (see letter to Mr. Ryan Char, PE, of Group 70 International, dated October 22, 2104, from Michelle R. Lynch of the Department of the Army) based their confirmation on the fact that HDF represented themselves as being on an "existing farm site". What existing farm is there? Certainly not the taro farm, which is indicated to be outside HDF's perimeters. And why does HDF "anticipate" to fall under that same exemption, based on misrepresentation, for construction or maintenance of existing or new animal walkways, stream crossings and farm roads?

Another question I have is with all of the rotating of cows, milking cows, cleaning cows and facilities, birthing and calf-care – not to mention sending out or receiving shipments – who of the four or eleven (it's unclear) Kauai employees will be spending the time to monitor water quality for both surface water and ocean water as stated in HDF DEIS 4.17, page 4-68 Mitigation – Surface Water Quality Monitoring and Mitigation – Ocean Water Quality Monitoring?

Clearly there are many issues of concern with an industrial dairy located in a highly populated destination vacation area, but the loss of the quality of outdoor

life will be devastating with long-reaching detrimental effects. In the big picture, the entire island of Kauai will be affected. For two and a half years, Kauai residents and visitors have sent letters and emails with documented proof of the many negative effects this industrial dairy will have. Why is this plan still on the table? Who will want to come to Kauai's Southshore if they can't go in the water or hike along the coastline with the fresh ocean smells and not be the target of biting flies? Without visitors what will happen to the hotels and vacation rentals? And when the disastrous effects from the dairy take their toll, leaving behind waste and pollution, are Pierre Omidyar and Ulupo Initiative, Hawaii Dairy Farms, the county and/or the State going to pay the millions or even billions of dollars to clean it up? Sometimes that can take many years. Are YOU prepared for that?

With Respect,



Charlotte K. Beall
1641 Makaanui Road
Koloa, HI 96756

Charlotte Beall
January 3, 2017
Page 3 of 3

A large body of scientific literature documents that, contrary to popular belief, reef corals do not necessarily require low nutrient water. In Hawaii, Atkinson et al. 1994 showed that a multitude of corals from around the Pacific Basin growing at the Waikiki Aquarium in high nutrient marine groundwater have higher linear growth rates than corals in the wild. There is no reason to expect that a short-term exposure of a very limited community to elevated nutrients will result in any negative impacts to corals in the mixing zone of Waipii Ditch and the ocean.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kauai community, and will allow for evaluation of possible contamination sources.

The exemption cited by the USACE in their letter refers to the existing ditches and site conditions on the HDF property. Information regarding the history of the site can be found in EIS Section 4.7.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, files, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the DEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 20, 2016

Jeffrey H. Overton, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813
HDF@Group70int.com

RE: HDF DEIS

Mr. Overton:

I am in receipt of your response to my comments about the Hawaii Dairy Farms EISN dated May 26, 2016 which was also included in the appendix Volume 3 of the DEIS dated May 26, 2016. Your response to my letter and the DEIS failed to adequately address the eminent adverse economic impacts of the HDF dairy proposal to the nearby Poipu resort community. In fact, the List of Technical Appendices (Volume 2) does not even have a section related to economic impact analysis of the proposed project area, namely the Koloa/Poipu visitor economy which employs roughly 2,200 people, or potential adverse consequences on real estate values in the area. The DEIS completely disregards the incompatibility of the HDF proposed industrial manure factory being in close proximity to this thriving economic base. The DEIS fails to provide anything that would be recognized as an economic impact analysis or study of the ramifications of this enterprise to the existing economic environment. Page 7-1 of the DEIS begins to list all consulted parties during the course of producing the DEIS and there is not one credentialed real estate analyst that appears to have contributed to this body of work.

The Poipu area is home to world class beaches and resorts well established as a visitor destination area since the original Comprehensive Zoning Ordinance (CZO) passed in 1972 in the County of Kauai. The Koloa/Poipu area alone (census tract 150070406.03) accounts for over \$213mil in annual tourist revenues. This area also contributes more than \$28.5mil annually in real property tax revenue, which accounts for 24% of all real property tax revenue generated by the County. None of this is even mentioned in the DEIS.

Considering that the US Census classifies 86% of residential properties in the Koloa/Poipu area as "seasonal", and nearly 69% of all real property tax revenues in the area (\$17.96mil) come from the vacation rental and hotel & resort tax classes, there is no doubt the local economy and local real property tax base will be severely impacted by this incompatible land use with the nearby built environment. Ground water pollution, ocean pollution, odors, files and noise emanating from the dairy will severely detract from what was once the allure of Poipu as a world class visitor destination, or as a desirable place to live. Occupancy rates at hotels and the 86% of housing units classified as "seasonal" will plummet. This will cause job losses in the visitor industry, losses in real estate values, which will inevitably lead to a surge in real property tax appeals and significant losses in real property tax dollars to the County.

The DEIS indicates that HDF's proposal, when completed and operational, is expected to contribute only 4 full time jobs on Kauai and \$51,000 in annual revenue to the County. Your letter to me quotes \$68,000 per year and 16 jobs. I have significant concerns as to the accuracy and consistency of information being provided by Group 70 International in the context of the HDF DEIS. I have significant concerns as to the accuracy and consistency of information being provided by HDF and the continually changing information being presented to the public regarding their development and operation plan.

Mr. Overton, I am an MAI designated real estate appraiser, the only MAI actively appraising real estate and living on Kauai. I am also a planner by education with my undergraduate degree in Community and Regional Planning from Iowa State University. Prior to my private practice work on Kauai, I was assessor for Kauai County responsible for the valuation of all hotels, commercial properties, and unique situations on the island. I conduct market, economic, and demographic analysis on various areas on Kauai on a regular basis in my work and I can assure you that I know what an economic impact analysis should look like and the type content that should be presented and analyzed. The DEIS your firm has prepared for the proposed HDF development in the Maunalepu Valley fails to provide even a college freshman level economic impact analysis of the project area and merely regurgitates demographic data, some history of sugar cane cultivation, and descriptions of the market area... there is no real analysis presented. The appendices in Volume 2 present much data, but there is no analysis of the data.

Page 4-51 states "Results of technical studies and the findings of the EIS show no unmitigated nuisances that would affect property values as a result of dairy implementation or operations." What are these technical studies the DEIS is referring to and where can they be found? As an experienced, professional real estate analyst and appraiser, I cannot find anything in this DEIS that resembles such a technical study. The DEIS also states, "No noticeable odors, files, noise, waste or water discharges will reach resort or residential areas"; there is significant data and historical accounts from many areas around the mainland United States that refutes this claim. There are rural, farming communities in areas of the Midwestern states that have imposed ordinances requiring a minimum buffer of 4 miles between projects similar to HDF's proposal and residential areas.

The DEIS has complete disregard for the existing, thriving, economic base in the Poipu area. Appendix J of the DEIS, merely states that the dairy will have no impact on the values of property in the region; but where's the analysis that leads to this preposterous conclusion? How was this conclusion determined? As the only active designated appraiser on Kauai I completely disagree with the notion that there will be no negative and only positive implications to Kauai from the HDF proposal and there is significant evidence to the contrary (see attached 2001 and 2015 Appraisal Journal articles authored by John A. Kirkpatrick, MAI, FRICS, PhD). In all my studies and research, I cannot find one case where an enterprise such as this was introduced into a thriving tourism economy; this is because it is an obvious incompatible neighboring use. However, there are dozens upon dozens of cases that prove, without question, that this type of animal production enterprise being located within a few miles of existing residential neighborhoods has significant, measurable negative impacts to property values. This is a fact that is completely disregarded and ignored in the document prepared by your firm.

Respectfully,

Curtis J. Bedwell, MAI
PO Box 1330
Koloa, HI 96756
curtisbedwell@gmail.com

cc:

Virginia Pressler, MD
State of Hawaii, Department of Health
1250 Punchbowl St.
Honolulu, HI 96813
virginia.pressler@doh.hawaii.gov

Laura McIntyre
State of Hawaii, Department of Health
1250 Punchbowl Street
Honolulu, HI 96813
doh.epo@doh.hawaii.gov

Keith Kawaoka, D.Env.
Environmental Health Administration
1250 Punchbowl Street
Honolulu, HI 96813
Keith.kawaoka@doh.hi.gov

Amy Hennessey
Hawaii Dairy Farms, LLC
PO Box 1690
Koloa, HI 96756-1690
info@hawaiidairyfarms.com

Jeff Overton
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813
HDF@Group70int.com

ADDENDA

2015 HOTEL/LODGING SALES

Census Tracts	Hotel/Lodging Sales	Hotel/Lodging Sales (%)
Priceville	\$189,507,000	27.8%
150070401.03	\$617,000	0.1%
150070402.04	\$926,000	0.1%
Keppaa	\$76,317,000	11.2%
150070402.05	\$40,954,000	6.0%
Waipouli	\$46,745,000	6.9%
Waikua	\$104,550,000	15.3%
150070404.00	\$213,106,000	31.3%
Lihue/Kalapaki	\$1,235,000	0.2%
150070406.03	\$1,669,000	0.2%
150070407.00	\$2,392,000	0.4%
150070408.00	\$3,573,000	0.5%
150079400.00	\$308,000	0.0%
	\$681,929,000	

	2015 ASSESSMENT	Area	% of Study	2015 TAXES	Area	% of Study	# Parcels
Tax Class 1: Residential	\$791,418,800	23.2%	20.7%	\$5,601,054	35.3%	1,208	
Tax Class 2: Vacation Rental	\$1,080,517,200	31.7%	35.3%	\$9,548,862	3.8%	1,463	
Tax Class 3: Commercial	\$136,142,000	4.0%	3.8%	\$1,024,554	0.1%	94	
Tax Class 4: Industrial	\$136,142,000	4.0%	3.8%	\$1,024,554	0.1%	94	
Tax Class 5: Agricultural	\$79,954,600	2.3%	1.9%	\$500,658	0.1%	114	
Tax Class 6: Conservation	\$2,120,100	0.1%	0.1%	\$13,954	0.1%	5	
Tax Class 7: Hotel & Resort	\$775,742,700	22.7%	31.1%	\$8,415,349	3.4%	845	
Tax Class 8: Homestead	\$407,824,800	12.0%	3.9%	\$933,482	0.1%	630	
Tax Class 9: Residential Investor	\$159,953,100	4.7%	3.9%	\$1,053,509	0.1%	45	
Tax Class 10: Commercialized Home Use	\$98,535,500	2.9%	1.4%	\$386,918	0.1%	124	
TOTAL	\$3,668,350,800	17.7%	24.1%	\$28,502,896		4,622	
County Total	\$20,716,848,800			\$118,273,260		33,597	

Source: HIS - 2015 Assessment Data (Date of Value 10-1-2014)

features

Concentrated Animal Feeding Operations and Proximate Property Values

by John A. Kilpatrick

Abstract
Property located near a concentrated animal feeding operation (CAFO) will be negatively impacted by this externality. The degree of impairment depends on proximity and property type and use. Properties with higher unimpaired values are probably impacted more than otherwise lower-valued properties.

Concentrated animal feeding operations (CAFOs) are often called “feed-lots.” They may include facilities where animals are raised or where animals are brought for slaughter. The common denominator is a large, perpetual inventory and density of animals.¹

Currently, the USDA and the EPA estimate that livestock in the United States produces 130 times the amount of manure produced by the entire human population of this country. Spills from CAFOs have killed fish in several states; phosphorus in land and water has been correlated with livestock density; and manure has caused eutrophication and degradation of U.S. waterways.² The trend toward CAFOs has been rapid and pronounced in the U.S., but federal and state laws generally are considered to have some gaps. In addition to water quality issues resulting from manure and waste run-off, these facilities attract flies and other insects and pests that parasitize the insects.³

Professor John Ikert, an agricultural economist with the University of Missouri at Columbia, sums up the problems quite succinctly in a recent working paper when he says, “Piling up too much stuff in one place causes problems.” Writing specifically about swine CAFOs, he goes on to comment, “If you spread out the hogs and let hog manure lay where it falls in a pasture, it doesn’t bother anyone very much. But if you start collecting it, flushing it, spreading and spraying it around—all normal practices in confinement hog operations—it becomes air pollution.”⁴

Because of the noxious and obvious problems associated with CAFOs, many states have enacted severe restrictions on permits. For example, in 1997 the

1. Numerous documents were reviewed to develop this section, see subsequent footnotes for details. Much of the information was obtained from the Congressional Budget Office, “Confinement Animal Feeding Operations and Water, Air, Land, and Welfare,” A Report of the American Bar Association Special Committee on Agricultural Management Roundtable II on Environmental Challenges in Animal Feeding Operations, (September 23, 1999).
2. Stephen Jann, “Recent Developments in Water Pollution Control Strategies and Regulations.” Presented at the American Bar Association Special Committee on Agricultural Management Roundtable II on Environmental Challenges in Animal Feeding Operations, Minneapolis, MN, (May 12, 1999).
3. Smith-Corneskey Ground Water Sciences, “Concentrated Animal Feeding Operations—Resources for Environmental Responsibility.” Working paper (April 1, 2000). See <http://www.groundwatersystems.com/agwaste.html> for more details.
4. John Ikert, “Social, Economic, and Cultural Impacts of Large-Scale, Confinement Animal Feeding Operations.” Working paper, University of Missouri (March 2, 2001).

legislation of typically livestock-friendly Oklahoma mandated setbacks and other pollution controls, and in 1998 that legislature enacted a moratorium on new livestock permits.⁵ Kansas is another typically agriculture-friendly state that recently has enacted a moratorium on CAFOs, and it is considering legislation to end CAFOs.⁶ In 1998, the North Carolina legislature, faced with unregulated establishment of CAFOs, enacted House Bill 1480, which mandated the registration of growers for integrators, extended a moratorium, and mandated substantial elimination of both atmospheric emission of ammonia and odor beyond the boundary of existing CAFOs.⁷ Minnesota enacted similar odor control legislation in 1997 and established both a complaint control protocol and an enforcement response protocol specific to CAFOs.⁸

CAFOs and the Value of Nearby Real Estate

A CAFO impacts the value of proximate properties to the extent that the CAFO is viewed, in the market, as a negative externality.⁹ As an externality, it is typically not considered to be economically "curable" under generally accepted appraisal theory and practice.¹⁰⁻¹² Some of this loss in value may be attributable to stigma, when there are unknowns and risks associated with ownership of the property.

Impairment and Value—An Overview

From an economic perspective, the rights enjoyed by a fee-simple owner fall into three categories:

1. Right of use and enjoyment
2. Right of exclusion
3. Right of transfer¹³

5. Michelle Stephens, "NGO and Grassroots Perspectives and Action," Presented at the American Bar Association Special Committee on Agricultural Management Roundtable II on Environmental Challenges in Animal Feeding Operations, Minneapolis, MN, (May 12, 1999).

6. Roger Myers, "Graves May Lift Licensing Ban on Large-Scale Hog Farming," *The Topeka Kansas Journal* (24, 1998).

7. Michael C. Williams, "CAFO Odor Control Options," Working paper, North Carolina State University, presented at the American Bar Association Special Committee on Agricultural Management Roundtable II on Environmental Challenges in Animal Feeding Operations (September 23, 1999).

8. Michael Sullivan, "Minnesota's Program Regarding Hydrogen Sulfide Emissions from CAFOs," Working paper, Minnesota Pollution Control Agency, presented at the American Bar Association Special Committee on Agricultural Management Roundtable II on Environmental Challenges in Animal Feeding Operations (September 23, 1999).

9. For a thorough discussion in this context, see Appraisal Institute, *The Appraisal of Real Estate*, 11th Ed. (Chicago: Appraisal Institute, 1996): 46-48, 336-337, 398.

10. *Ibid.*, 336-337.

11. For a discussion of the incurability of external obsolescence, see Hal Smith and John Cargel, *Real Estate Perspectives*, 2nd Ed. (Boston: Irwin, 1992): 524.

12. Under some circumstances, such as a class-action suit, the externality may be curable. However, when considering one impacted parcel alone, the externality probably is not economically curable.

13. While owners' rights are delineated in many texts, this specific characterization is derived from Austin J. Jaffe and Demetrios Louzotis Jr., "Property Rights and Economic Efficiency," *Journal of Real Estate Literature* (4, 1996): 137-162.

14. Armen A. Alchian and Harold Demsetz, "The Property Rights Paradigm," *Journal of Economic History* (53, March 1973): 16-27. See also, Harold Demsetz, "toward a Theory of Property Rights," *American Economic Review* (57, 1967): 347-353.

It is important to note that in the U.S. property itself is not "owned," but rather the rights of the property are owned.¹⁴ The ability to delineate these rights, and the ability of owners to transfer some or all of these rights voluntarily is a necessary condition for property valuation.

Use and Enjoyment

The first of these rights, that of use and enjoyment, is generally interpreted to mean that the owner may determine how property will be used, or if it is to be used at all. The right of use traditionally is limited in western culture by both public restrictions (e.g., eminent domain, police power) and private restrictions (e.g., liens, mortgages). Private restrictions are generally voluntary, and property owners willingly submit to the desirability of such restrictions in trade for some other economic benefit. For example, a property owner will issue a mortgage to a lender in trade for leverage in the purchase. Also, a homeowner will purchase in a subdivision with covenants and restrictions in trade for the assurance of uniform property use within the neighborhood. It is noteworthy that the voluntary acceptance of private restrictions is always in trade for some economic compensation. For example, a property owner may grant a scenic easement, which restricts the use and enjoyment of his or her property, but will expect to be compensated for that easement.

An impairment often places a restriction on the right of use without some economic compensation. This is illustrated in potential restrictions that may be placed on the use of real estate due to a physical impairment and can thus limit the property to something less than its highest and best use. For example, odor or flies from a nearby CAFO will restrict the use and enjoyment of impaired property without compensation.

Right of Exclusion
The right of exclusion—often called the right of exclusive use or right of exclusive enjoyment—provides that those who have no claim on property should not gain economic benefit from enjoyment of the property. In other words, the right of use is exclusive to the property owner, and any violation of the right of exclusive use typically carries either payment of compensation to the rightful owner or assessment of a penalty. For example, if "A" trespasses on land owned by "B," then "A" will be guilty of a crime and a possible criminal penalty may be in order, as well as civil damages. Physical impairment, such as the odor or flies, in effect is a trespass on property rights and violates the right of exclusion. Society places a high value on the right of exclusion, for justifiable reasons. Exclusion provides that both the current benefits of ownership as well as future benefits accrue only to the rightful owner, and his/her successors and assigns. In the absence of exclusion, the right of use is under constant threat of nullification without just compensation. In an economy without the right of exclusion, property owners would adopt short-term strategies for use, rather than long-term strategies. In an economic sense, this would lead to widespread inefficiency in the allocation of resources. Hence, the right of exclusion carries with it a significant societal good,¹⁵ and thus a significant, societally recognized value.¹⁶

Right of Transfer
Finally, the right of transfer provides the owner with the ability to swap one resource for another. An impairment restricts the right of transfer, and may destroy the right of transfer altogether.

Effects of Negative Externalities on Property Values

Real estate economics and appraisal practice uniformly recognize that many externalities such as contamination may have a negative impact on property values. For example, appraisers are required by the Uniform Standards of Professional Appraisal Practice (USPAP)

Real estate economics and appraisal practice uniformly recognize that many externalities such as contamination may have a negative impact on property values.

to consider the impacts of such contamination in the value estimation process.¹⁷

Fitchen¹⁸ was one of the first to look at the value of the rights of a property owner in the face of impairment—in that case, a toxic chemical pollution. As an anthropologist and a professor of anthropology, she looks principally at residential values and considers not only the real aspects of "violation of the home" by contamination (e.g., carcinogenic effects of polluting chemicals) but also the symbolic interference of what she calls "...a threat to the assumptions people have about themselves and the way life is supposed to be."¹⁹ She notes, "Toxic contamination also attacks the valued institution of homeowner-ship, violating many of the rights that are assumed to flow from the ownership of ones home, including the assumed right to control entry to it.... Chemical contamination may affect homeowners more seriously than renters, not only in terms of potential financial loss, but also in terms of devaluation of the achieved status of homeowners."

Edelstein also deals with this "home" theme, and calls impairment to or near a residence an "...inversion of home..." when "...the previous locus of family security and identity becomes instead a place of danger and defilement."²⁰ He builds on previous works, such as Perin²¹ and Altman and Chermers,²² that show the very special place the home has in American society, culture, and economics. Perin states, "Not being a nation of shopkeepers, America

15. See for example, Frank State, "The Concept of Property," *American Philosophical Quarterly* (9, April 1992).

16. George Stigler, "Law or Economics?" *Journal of Law and Economics* (35, October 1992): 455-469.

17. This is specifically covered under USPAP Rule 1-4(e). This is one of the rules from which departure specifically is not permitted. For a thorough discussion of the appraiser's responsibility see also, J.D. Eaton, *Real Estate Valuation in Litigation* (Chicago: Appraisal Institute, 1993): 128-129, 149-54, 285-277.

18. Janet M. Fitchen, "When Toxic Chemicals Pollute Residential Environments: The Cultural Meanings of Home and Homeownership," *Human Organization* (48, Winter 1989): 313-324.

19. *Ibid.*, 320.

20. Michael R. Edelstein, "Toxic Exposure and the Invasion of the Home," *Journal of Architecture Planning and Research* (3, 1986): 237-251.

21. Constance Perin, *Everything in its Place: Social Order and Land Use in America* (Princeton, NJ: Princeton University Press, 1977).

22. I. Altman and M. Chermers, *Culture and Environment* (Monterey, CA: Brooks/Cole Publishing, 1980).

is one of homeowners, busily investing in plant maintenance and expansion with both money and time, keeping the product attractive for both use and sale.²³

Edelestein specifically stresses the investment diminution aspect of the inversion of home principle. In citing case studies of experiences following neighborhood-wide impairment in the Legler section of Jackson Township in southern New Jersey, he shows that residents could not separate the psychological pride in home ownership from the question of economic value. Surveys of the population found uniformity of opinion that property values had diminished as a result of the problem. While previous studies had focused on the diminution of value from existing homes, Edelestein was one of the first to focus on the opportunity costs stemming from the inability to move. In short, homeowners were stuck holding unsellable homes with stagnant prices, while homes in other neighborhoods were soaring in value. Thus, the owners were harmed not only by the diminution of value in the existing residences, but by the opportunity costs inherent in lost gains from alternative home investments.

Value Loss: Stigma Issues

Edelestein refers, in a general sense, to the issue of stigma as a mechanism for manifestation of value diminution in residential property. Stigma is an increasingly common term in appraisal and real estate economics literature, and refers to a very specific quantitative mechanism by which value is impacted by proximate contamination or negative externalities.

The earliest references to stigma as a quantitative concept in real estate economics appear to be in the writings of Patchin²⁴ and Mundy.²⁵ The latter study differentiated between the cost to cure and the cost of stigma. The former is an out-of-pocket

expense born either by the property owner or some other responsible party, while the latter manifests in property value diminution even in the absence of a cost to cure. For example, a property that is completely cured may continue to suffer a diminution in value, and hence damages, because of stigma.

Kilpatrick outlines the quantitative model by which the value of income producing property is reduced by the effects of stigma manifested via increases in market driven capitalization rates.²⁶ He outlines four components of income producing property value impacts: net operating income, actual cost-to-cure, ongoing increases in maintenance, and stigma. In his model, the stigma losses actually overwhelm the other three factors as a component of value diminution. He concludes that under many circumstances the stigma impacts are actually the greater portion of value losses to property owners.

Other Proximate Contamination Issues

The issue of value loss for proximate contamination or other impacts has been considered in a number of studies, and includes how the citing of an externality, such as a CAFO, can impact nearby values. Some of the earliest researchers, such as Blomquist, looked at the impact of locating a power generating plant,²⁷ while Gutermaun showed that landfills have a negative impact on the value of surrounding industrial property, and that this value loss has a spatial component.²⁸ Kinnard and Geckler had similar findings for nuclear facilities,²⁹ as did Kinnard and Kiel³⁰ for hazardous waste sites.

In a similar vein, Colwell analyzes the property value diminution associated with proximity to power lines,³¹ and Kirschner and Moore show that water quality can impact nearby residential property values.³² Simon's study of pipeline ruptures shows that diminution in value occurs on properties up to two miles from the site of a petroleum spill.³⁴

Case Studies

The following cases illustrate the effects of CAFOs and the impact of CAFOs on property value.

Minnesota Case Study³⁵

A homeowner in Minnesota lives about two miles from one swine CAFO and about three-quarters of a mile from a second CAFO. When these CAFOs were first opened in the early 1990s, she was initially a supporter. However, she and her family immediately began suffering illnesses, which they attributed to the proximate CAFOs. She contacted the Minnesota poison control center and for the first time learned about the dangers of hydrogen sulfide emissions. She kept track of her illnesses and weather conditions (e.g., wind and direction) and concluded that her illnesses were caused by the emissions from the CAFOs. Testing was warranted, and on at least one occasion the reading was above 1,000 ppb hydrogen sulfide, well above danger levels.

North Carolina Study³⁶

Palmquist, et. al, were the first to quantitatively determine that the distance from a residence to a CAFO has an impact on residential values. However, their study looked only at residences already near CAFOs and measured the impacts of additional CAFO capacity (either new CAFOs or additional livestock at existing CAFOs) located at 0.5-, 1.0-, and 2.0-mile distances from the residence. Nonetheless, they established a methodological model for spatial impacts of CAFOs.

University of Minnesota Study³⁷

In 1996, the Minnesota Department of Agriculture commissioned a study by researchers at the University of Minnesota on the topic of value diminution resulting from proximate CAFOs. In addition to substantial secondary research in the area, the study authors also conducted primary research into value impacts in that state. Specifically, they conducted a hedonic price analysis on 292 rural residences that were sold during 1993–1994 in two Minnesota

counties. They found a statistically significant pricing impact related both to the existence of a CAFO as well as the distance from the CAFO. In other words, not only does a CAFO have a significant impact on property value, but the nearer the CAFO, the greater the impact. The researchers also found that CAFOs tend to be located near older or lower valued homes. Hence, the pricing impacts in a simple empirical study may be muted by other negative impacts to value, and high-valued residences may be impacted to a greater degree by CAFOs than would be suggested by their findings.

University of Missouri Study³⁸

Following the methodology of the Minnesota study, researchers at the University of Missouri were able to quantify both the average value impact of a CAFO and the impact by distance. An average vacant parcel within 3 miles of a CAFO experienced a value loss of about 6.6%. However, if that parcel was located within one-tenth of a mile from the CAFO (the minimum unit of measure in the study) and had a residence on it, then the loss in value was estimated at about 88.3%.

Pasco, Washington Case Study³⁹

A 309-acre family farm that had been operated for many years produced alfalfa, asparagus, corn, apples, peaches, nectarines, cherries, melons, and a range of garden produce. A CAFO was adjacent to the residence (about ¼ mile away), and consequently the farm product was impacted by dust, flies, fly fecal matter, and odor. The farm was appraised for litigation purposes and a value diminution of over 50% was determined, using traditional farm appraisal methods. The CAFO settled the lawsuit by purchasing the plaintiff's farm and relocating the residents to a nearby farm that was not impacted by the CAFO externalities.

Michigan Horse Farm Case Study⁴⁰

A horse-breeding operation (owner-occupied farm) is located approximately 1,000 feet from a recently

35. Presentation at the American Bar Association Special Committee on Agricultural Management Roundtable II on Environmental Challenges in Animal Feeding Operations (September 23, 1999). Results of the study not independently validated by the author.

36. R. Palmquist, F. Roka, and T. Vukina, "Hog Operations, Environmental Impacts, and Residential Property Values," *Land Economics* (73:1, 1997): 114–124. Results of the study not independently validated by the author.

37. Steven J. Tarr, Douglas Tiffany, and Sanford Westberg, "Measured Effects of Feedlots on Residential Property Values in Minnesota: A Report to the Legislature," University of Minnesota Staff Paper Series (July, 1996). Results of the study not independently validated by the author.

38. Mubarek-Hamed, Thomas Johnson, and Kathleen Miller, "The Impacts of Animal Feeding Operations on Rural Land Values," University of Missouri-Chambers County Policy Analysis Center Report (6/99-02 (May, 1999)). Results of the study not independently validated by the author.

39. Mundy Associates, LLC files. Details of case confirmed by property owner and attorneys for both sides.

constructed large scale, pork processing facility. The use and enjoyment of the home has been diminished by airborne externalities, and the ability to use the site as a farm may be compromised as a result of flies carrying animal blood and feces that contain antibiotics and other nuisances. In 2000, the property owner appealed for a property tax reassessment representing a devaluation of over 50% from fair market value, and the county attorney concurred with that appeal.

Michigan Residence Case Study⁴¹

A family purchased a "fixer upper" residence in rural Vicksburg, Michigan in 1995. In 1997, a large-scale pork processing facility was located about 700 feet from the home. The reduction in air quality was so severe as to force the residents to abandon their home and move elsewhere. To date, they have not been able to sell the home. The owner of the processing facility offered to compensate them for 60% of the fair market value of the home (i.e., a 60% diminution in value). As of this writing, litigation is pending.

Summary and Conclusions

The above suggests that the establishment of a CAFO may result in value diminution to other nearby properties. The amount of the value loss is typically an inverse function of distance (closer properties diminish more), a function of property type (newer, nicer residences lose more), and a function of property use (farm will lose value due to diminished productivity and comparative marketability to other farm lands). While the appraisal profession has only begun to quantify the loss attributable to CAFOs, it is clear from the above case studies that diminished marketability, loss of use and enjoyment, and loss of exclusivity can result in a diminishment

ranging from 50% to nearly 90% of otherwise unimpaired value.

When appraising a property located proximate to a CAFO, the appraiser needs to consider seven specific issues, each of which will have an impact on the value conclusions:

1. Type of subject property,
2. Distance to the CAFO,
3. Physical manifestations (e.g., air quality, insects),
4. Engineering/scientific testing performed (e.g., air quality),
5. Impacts on property use (e.g., habitability, rental income or vacancy),
6. Marketability evidence (e.g., time on market of comparable properties), and
7. Impact on highest and best use.

While there is little disagreement that a CAFO has an impact on surrounding property values, the degree of impact is clearly a function of the interplay of these factors.

John A. Kilpatrick is a partner and senior analyst with Mundy Associates, LLC, an economic, market, and valuation firm specializing in complex real estate matters headquartered in Seattle, Washington. Kilpatrick is the author of four books and numerous articles on real estate matters, and is a frequent speaker on real estate economics and valuation. He did his graduate work in Real Estate Finance at the University of South Carolina. Contact: Suite 200 Watermark Tower, 1109 First Avenue, Seattle, Washington 98101. (206) 623-2935; fax: (206) 623-2985; email: john@mundyassoc.com.

Table 1 Summary of CAFO Impacts

Case Study	Value Loss	Remarks
Minnesota	N/A	Significant diminution in air quality
North Carolina	N/A	Established distance component to value
University of Minnesota	N/A	CAFO sited near older, less-expensive homes
University of Missouri	Residential 3 miles: 6.6% Residential 0.1 mile: 83%	Quantified average value impact by distance
Washington	Family farm adjacent: 50%	Impact included flies and loss of farm income
Michigan farm	Farm adjacent: 50%	Impact included loss of use as a farm
Michigan residence	Residence adjacent: 60-100%	Residence abandoned, could not be sold

41. Mundy Associates, LLC files. Details of the case confirmed by property owner and neighbors.

FEATURES

ABSTRACT

Animal feeding and processing operations have grown more concentrated, with each facility handling much larger numbers of animals than traditional farms. The larger concentration of animals impacts the quality of surrounding air and water. In addition, the facilities impact the economic conditions of the communities where they are located. All of these factors can potentially affect the value of nearby houses. This article summarizes the current literature on how animal operations may affect the value of residential properties located near such facilities; this information will be useful to practicing appraisers faced with valuing houses in these communities.

Animal Operations and Residential Property Values

by John A. Kilpatrick, PhD, MAI

Animal operations (AOs) may be broadly defined as facilities in which animals are raised or brought for slaughter. The common denominator is a large perpetual inventory and density of animals.¹

Although livestock and poultry production has more than doubled in the United States since the 1950s, the number of animal operations has decreased by 80%.² Food animal production in the United States has shifted to concentrated facilities where animals usually are raised in confinement. This concentration of animals brings environmental concerns related to air and water quality as well as animal and human health. As a result, animal operations are subject to regulation by the US Environmental Protection Agency (EPA), the US Department of Agriculture (USDA), and a variety of state entities. Laws and government regulations related to animal operations include specific definitions based on the function and size of the operations. For example, the EPA defines *animal feeding operations* (AFOs) as

agricultural enterprises where animals are kept and raised in confined situations. AFOs congregate animals, feed, manure and urine, dead animals, and production operations on a small land area. Feed is brought to the animals rather than the animals grazing or otherwise seeking feed in pastures, fields, or on rangeland.³

To qualify as an AFO, an animal operation must confine animals for at least 45 days in a twelve-month period.⁴ According to the EPA, there are approximately 450,000 AFOs in the United States.⁵ The EPA also designates certain AFOs as *concentrated animal feeding operations* (CAFOs) based on the confinement of large numbers of animals and the pollutant discharge. At CAFOs, there is a higher concentration of waste that increases the potential impact on air, water, and land quality.⁶ CAFOs are regulated by the EPA under the Clean Water Act,

1. Quite a few documents were reviewed to develop this discussion; see subsequent footnotes and Drew L. Kershner and Chuck Barlow, "Concentrated Animal Feeding Operations and Water, Air, Land, and Welfare," report on the American Bar Association (ABA) Special Committee on Agricultural Management Roundtable II on Environmental Challenges in Animal Feeding Operations (September 23, 1999).

2. EPA, *Literature Review of Contaminants in Livestock and Poultry Manure and Implications for Water Quality* (EPA 820-R-13-002, July 2013). 3. <http://water.epa.gov/scitech/ces/upload/Literature-Review-of-Contaminants-in-Livestock-and-Poultry-Manure-and-Implications-for-Water-Quality.pdf>.

3. EPA, "What is a CAFO?," <http://www.epa.gov/region07/water/cafo/>.

4. *Ibid.*

5. EPA, "Animal Operations," <http://www.epa.gov/agriculture/anafoic.html>.

6. http://www.epa.gov/region07/water/cafo/cafo_impact_environment.htm.

as environmental concerns arise when waste runoff is discharged onto adjacent landscapes and waterways.⁷

As the structure of the livestock industry has trended toward concentration of more animals in fewer operations, state and local governments also have acknowledged the problems associated with large operations by enacting legislation imposing stricter regulations on CAFOs and increasing separation distances.⁸ For example, in North Carolina the following mandatory setbacks are imposed on new or expanded farms with 250 or more hogs: 1,500 feet from occupied residences, 500 feet from any residential property boundary to swine houses and lagoons, and 75 feet from any residential property boundary to sprayfield boundaries.

Overall, the empirical evidence indicates that residences near AO are significantly affected, and data seems to suggest a valuation impact of up to 26% for nearby properties, depending on distance, wind direction, and other factors. Further, there has been some suggestion that properties immediately abutting an AO can be diminished as much as 88%. One study estimates the total negative impact to property values in the United States at \$26 billion.⁹ Mitigation makes a marginal impact. Not only are residences affected, but nearby small farms can be impacted by such factors as water degradation and insects.

Environmental Impacts and Regulation of Animal Operations

AOs are generally recognized to affect the surrounding environment in several key ways: air quality and

odors (ammonia, hydrogen sulfide, methane, and particulate matter), greenhouse gas and climate change, insect vectors (often carrying resistant strains of pathogens), groundwater and surface water contamination, and a variety of pathogens.¹⁰

Data from the USDA and the EPA estimate that livestock in the United States produce 150 times the total amount of manure as the entire human population of the country. For example, one hog excretes nearly three gallons of waste per day or 2.5 times the average human's daily total. A 5,000-sow AO will produce about 25 tons of manure a day.¹¹ A similar number of chickens will produce about 700 pounds of manure per day (plus or minus 50%), containing about 9 pounds of nitrogen gas, 75 pounds of phosphorus pentoxide (a powerful irritant and corrosive) and over 4 pounds of potassium oxide, a highly reactive deliquescent that reacts violently with water to produce potassium hydroxide.¹² Manure from livestock production can contain bacteria (salmonella, E. Coli 0157:H7), parasites, viruses, and antimicrobials (antibiotics and vaccines).¹³ Excessive levels of phosphorus in land and water have been correlated with livestock density; and manure has caused eutrophication and degradation of US waterways.¹⁴

AOs are regarded as potential sources for contamination because of the large amounts of manure that they produce, and because the proximity in which the animals are confined allows for disease to be easily transferred.¹⁵ A 2006 outbreak of E. coli 0157:H7 was associated with the consumption of fresh spinach that had been in contact with water contaminated with animal feces.¹⁶ One of the

leading causes of food and waterborne illness in the United States is this E. coli 0157:H7 organism, which is a specific strain of the *Escherichia coli* bacteria commonly found in the intestines of healthy cattle. One means of transfer of E. coli to humans occurs when untreated manure is able to enter water sources or used for fertilization.¹⁷ The EPA acting under the Clean Water Act has designated AFOs as point sources of pollution and requires that they have zero discharge or apply for a permit that requires an extensive waste management plan. Despite regulatory efforts to segregate manure-related contaminants from the water supply, contaminants still may enter the supply because of flooding, leeching into the soil, or through disregard of regulations.

In addition to water quality issues related to manure and waste run-off, animal operations facilities attract flies and other insects and parasites.¹⁸ As noted in Kilpatrick, state entities began regulating AFOs in the late 1990s.¹⁹ In 2000–2001, the EPA began levying fines against concentrated beef production facilities in the Northwestern United States that met two criteria: the facility confined animals for at least 45 non-consecutive days per year and the confinement area was devoid of vegetation. The rules generally applied to any operation with 500 head of cattle or more. At the time of the regulations, the EPA estimated that this would affect between 26,000 and 59,000 AFOs in the United States.²⁰

On December 11, 2002, the EPA issued its final revised regulations.²¹ The regulations affirmed the prior definitions of AFOs and CAFOs, established required performance standards and best management practices, and explicitly required nutrient management plans.²²

Overview of AO Impacts on Property Values

An AO can affect the value of proximate properties in two ways. First, AOs have a substantial indirect negative economic impact on surrounding communities, including property values in those communities, via shifts in sources of purchases and other inputs in the factors of production. An early study by Chisum and Levins reports that smaller farms make nearly 95% of their expenditures locally, while larger operations spend less than 20% locally.²³ Gomez and Zhang study 1,106 rural communities and conclude that economic growth rates in communities with conventional farming are 55% higher than in those with AOs.²⁴ They document the negative impact of AOs on the economy of the surrounding community, as revealed by sales tax receipts and reduced local purchases. They note that conventional farmers buy most or all of their supplies locally, thus stimulating the local community and, by extension, stimulating the local real estate market. On the other hand, AOs pass local retailers and import the factors of production. Gomez and Zhang state that AOs exacerbate the economic negative impact by "importing" large quantities of pollution and the attendant costs; they also find AOs cause "disruption of local social and economic systems, pollution problems resulting from intensive agriculture, and negative impacts on the quality of life in rural communities." This finding replicates those of an earlier study by Abeles-Allison and Connor, which showed AOs have the effect of crowding out more traditional farmers and decreasing purchases in local stores.²⁵

Hence, local communities suffer the negative economic byproducts without the attendant economic benefits.

17. "Disease Listing, *Escherichia coli* 0157:H7, Gen info," Centers for Disease Control and Prevention, <http://www.cdc.gov/ecoli/>.

18. Stuart A. Smith, "Concentrated Animal Feeding Operations—Resources for Environmental Responsibility" (working paper prepared by Smith-Cornesley Ground Water Sciences, April 1, 2000); for additional information, see <http://www.groundwaterscience.com/resources/techarticle-library/100-concentrated-animal-feeding-facilities-resources-for-environmental-responsibility.html>.

19. John A. Kilpatrick, "Concentrated Animal Feeding Operations and Proximate Property Values," *The Appraisal Journal* (July 2001): 301–306.

20. Peggy Stewart, "Cattlemen Find CAFO Rules Confusing," *Capital Press Agricultural Weekly* (March 9, 2003): 9.

21. Claudia Copeland, "Animal Waste and Water Quality: EPA Regulation of Concentrated Animal Feeding Operations (CAFOs)," Congressional Research Service Report for Congress No. 75700, February 16, 2010. The regulations were published in the *Federal Register* on February 12, 2003 and went into effect on April 14, 2003.

22. <http://water.epa.gov/pollwaste/npdes/abo/>. Permitting is under the EPA's National Pollutant Discharge Elimination System (NPDES) program, which regulates the discharge of pollutants from point sources; CAFOs are defined as point sources by the Clean Water Act.

23. John W. Chisum and Richard A. Levins, "Farm Spending and Local Selling: How Do They Match Up?" *Minnesota Agricultural Economist* 676 (1994): 1–4.

24. Miguel Gomez and Lying Zhang, "Impacts of Concentration in Hog Production on Economic Growth in Rural Illinois" (Illinois State U. working paper presented at annual meeting of American Agricultural Economics Association, July 30–August 2, 2000).

25. M. Abeles-Allison and L. Connor, *An Analysis of Local Benefits and Costs of Michigan Hog Operations: Experiencing Environmental Conflicts* (Agricultural Economic Report 536, Department of Agricultural Economics, Michigan State University monograph, 1990).

Second, AOs impact values at the individual residential value level. Property values are impacted as market participants view the AO as a negative externality. As an externality, it is not typically considered economically curable under generally accepted appraisal theory and practice. Hence, the value diminution attributable to proximate location of an AO can be attributed to stigma. The next section discusses case studies regarding the effects of AOs.

Proximity Case Studies

Kilpatrick presented a series of case studies from the 1990s that document the impacts of AOs.³² For example, a Minnesota homeowner lived near two swine AOs when her family reportedly became ill and testing found that the level of hydrogen sulfide was well above the danger levels.³³ An early study in North Carolina by Schiffman et al. reports emotional impacts (tension, depression, anger, reduced vigor, fatigue, and confusion) linked to airborne contamination emanating from an AO.³⁴ A later North Carolina study by Wing and Wolf reports increased incidences of headache, runny nose, sore throat, excessive coughing, diarrhea, burning eyes, and "reduced quality of life."³⁵ An early study in Iowa by Thu et al. finds increases in eye and upper-respiratory problems among those living within 2 miles of an AO.³⁶ A later Iowa study³⁷ finds extensive literature documenting acute and chronic respiratory disease and dysfunction among CAFO workers from exposures to complex mixtures of particulates, gases, and vapors; it concludes that CAFO air emissions may constitute a public health hazard.

Ables-Alison and Connor were among the first to examine property value impacts resulting from

airborne contamination and odors.³² Examining 288 sales between 1986 and 1989, they find that for every thousand animals added within a 5-mile area, there is an average sale price drop of \$430 per property, with the most significant losses within 1.6 miles. Notably, they find that during the first half of 1989 an AO with greater than 500 animals was 50 times more likely to have an odor complaint lodged with the state than one with fewer than 500 animals.³³

Taff, Tiffany, and Weisberg perform a hedonic price analysis on 292 rural residences in Minnesota and find a statistically significant pricing impact related both to the existence of an AO as well as the distance to the AO.³⁴ A 1996 study by Padgett and Johnson finds that homes within 0.5 mile of a CAFO decrease in value by 40%, and homes within 1.0 mile decrease in value by 50%, within 1.5 miles by 20%, and within 2.0 miles by 10%.³⁵ Palmquist, Roka, and Yukina quantitatively determine that AOs depress nearby home values. They develop a model to measure the spatial impacts of AOs and, like Padgett and Johnson, find differential value impacts at 0.5, 1.0, and 2.0 miles.³⁶

Hamed, Johnson, and Miller quantify both the average value impact of an AO as well as the impact by distance with a study of 99 rural, non-family real estate transactions of more than one acre near an AO. Thirty-nine of the properties in the study included a residence. An average residential parcel within 5 miles of an AO experienced a loss of about 6.6%. However, if that parcel was located within 0.10 mile of the AO (the minimum unit of measure in the study), then the loss in value was estimated at about 88.5%.³⁷

Additional empirical studies have supplemented these findings. Kim and Goldsmith analyze property values of 2,155 homes located within 5 miles of an AO in North Carolina. The principle focus of their study is spatial hedonics, and within a 5-mile area they find the average impact to be negative 18%. At 1 mile, they find the impact is negative 23.5%.³⁸

Weida studies the economic and financial impact of CAFOs. While this study principally focuses on the diminished economic growth rates in communities surrounding CAFOs, it also notes the substantial decreases in property values in those areas, as evidenced by property tax reductions.³⁹

Kuethle and Keeney find that the negative impacts of AOs are comparable to those generated by industrial waste, solid waste, and septic waste facilities.⁴⁰ They focus on airborne-related problems and note that odor is a particular source of nuisance, and higher-valued residences are more severely impacted.

The odor and airborne particulate issues also have been explored in a more recent study by Isakson and Ecker. They examine the impact of swine CAFOs on sale prices of 5,822 houses in Iowa. The study shows large adverse impacts for houses located within 5 miles and directly downwind from a CAFO—a loss of value of as much as 44.1%. Value loss diminished to 16.6% for houses not directly downwind, and loss in value decreased to 9.9% for houses directly downwind but 5 miles away. Isakson and Ecker also find a correlation between CAFO size and value loss; a 10% increase in CAFO size resulted in a 0.67% decrease in house price as far as 7 miles from the nearest CAFO.⁴¹

Studies Using GIS

Increasingly, AO studies have relied on geographic information systems (GIS) technology and other spatial methods to investigate property value impacts.

Worley Rupert, and Risse use GIS to examine the efficacy of buffers to mitigate AO impacts.⁴² They find that adding buffers to animal operations reduces the amount of land available within an area for such operations.

Całka, Deerhake, and Yao present a study technique using GIS and modeling software to investigate the dispersion of air pollution emanating from CAFOs. The advantage of this approach is it looks at cumulative emissions from multiple sources.⁴³

Milla, Thomas, and Ansinie, study homes in Craven County, North Carolina, use a GIS-based hedonic pricing model to evaluate the impacts of CAFOs, particularly hog operations, on residential property values. Their results indicate a negative and significant impact on property value from hog operations and a relationship between distance to hog farms and property sale prices. They determine that a farm with 5,000 animals has a statistically significant impact on values of homes 1 mile away, with an impact on the average home of 3.1%.⁴⁴

Based on the results of the case studies, it is quite apparent that significant externalities are associated with animal feeding operations, that the relationship between externalities, farm characteristics, and community attributes can be quite complex, and that negative impacts of animal facilities, as reflected in lowered property values, can extend beyond established setbacks. The GIS-based studies suggest the externalities associated with AOs are a function of distance and that the GIS-based hedonic price modeling is a promising method for assessing property value damages associated with animal operations, for evaluating potential impacts when siting new operations, and for developing setback guidelines.

38. Jung, Kim and Peter Goldsmith, "A Spatial Hedonic Approach to Assess the Impact of Swine Production on Residential Property Values," *Environmental and Resource Economics* 42, no. 4 (April 2009): 509-534.
 39. William J. Weida, "Potential Regional Economic Effects of CAFOs" (Colorado College working paper, August 24, 2001), available at <http://sraproject.org/wp-content/uploads/2007/12/commentsontheexternalitiesofresidential.pdf>.
 40. Todd H. Kuethle and Roman Keeney, "Environmental Externalities and Residential Property Values: Externalized Costs Along the House Price Distribution," *Land Economics* 88, no. 2 (2002): 241-250, available at <http://naldc.nal.usda.gov/naldc/download.htm?nid=54130&content=PDF>.
 41. Hans R. Isakson and Mark D. Ecker, "An Analysis of the Impact of Swine CAFOs on the Value of Nearby Houses," *Agricultural Economics* 39, no. 3 (November 2008): 365-372.
 42. J. W. Worley, C. Rupert, and L. M. Risse, "Use of GIS to Determine the Effect of Property Line and Water Buffers on Land Availability," *Applied Engineering in Agriculture* 17, no. 1 (September 2000): 49-54, available at <https://www.its.uga.edu/library/buffers.pdf>.
 43. Jamie Całka, Marion Deerhake, and Chongwei Yao, "Modeling Ammonia Dispersion from Multiple CAFOs Using GIS," *Proceedings of the 24th ESRI Users Conference*, August 9-13, 2004, available at <http://proceedings.esri.com/library/userconf/proc04/docs/pap1381.pdf>.
 44. Katherine Milla, Michael H. Thomas, and Winsbert Ansinie, "Evaluating the Effect of Proximity to Hog Farms on Residential Property Values: A GIS-Based Hedonic Price Model Approach," *URISA Journal* 17, no. 1 (2005): 27-32.

Legal and Regulatory Actions

Legal and regulatory actions also can reveal the impacts of AOs on nearby properties. For example, in 2000, Central Industries operated a large-scale poultry rendering plant near Central, Mississippi. As part of the process, large quantities of poultry processing byproducts were brought to this facility for further processing. The plant had been subject to a number of flooding events, spreading bacteria-laced poultry byproducts into nearby creeks and downstream rivers. Poultry byproducts were discovered up to 50 miles away from the rendering plant. For violations of the Clean Water Act, company officers were fined varying amounts up to \$500,000 each, and the company was fined \$14 million.⁴⁵ Researchers found property value diminution of up to 60% for farms closest to the plant, and transaction prices impacted as far as 11 miles away.

In numerous counties across the country tax assessors have granted property value reductions as a result of proximity to AOs. For example, Bessley reports that Clark County, Illinois, established a property tax abatement for fifty homes around a swine AO. Homes within 0.5 mile were determined to have values diminished by 50%, ranging down to a 10% reduction in value for homes at 1.5 miles.⁴⁶

Aiken reports that the Nebraska Court of Appeals ruled that county board of equalization erred in not considering a rural residence's proximity to a swine facility in determining the residence's valuation. The owner of the facility also built a house 0.75 mile away and obtained an easement to spray the hog manure on the cropland across the road from the house. The court ordered the county to ignore the fact that the swine were also the property of the owner. The court cited Nebraska livestock nuisance decisions that show that hog odors would influence the home's value. Upon the ruling, the county accepted a determination by a local, independent appraiser that the value was diminished 50%.⁴⁷

Spears reports that in the summer of 2003, health officials declared about 40 kilometers of beaches on

Table 1 Property Tax Reductions in Areas Around AOs

Area	Amount of Reduction	Property Type
Grundy Co, MO	30%	
Mecosta Co, MI initially:	35%	Dwellings only
later changed to:	20%	Land and structures
Midland Co, MI	20%	
DeWitt Co, IL	30%	
McLean Co, IL	35%	
DeKalb Co, AL	Base reassessment, variable rates	
Renville Co, MN	Base reassessment, variable rates	Dwellings only
Humbolt Co, IA	20%-40%	Dwellings only
Federick Co, MD	10%	
Muhlenberg Co, KY	18%	Dwellings only

Lake Huron permanently unsafe because of *E. coli* bacteria emanating from nearby AOs. This became the first new pollution hot spot on Canada's side of the Great Lakes in almost twenty years. Lab tests demonstrated that the *E. coli* levels in the streams feeding Lake Huron, and draining off nearby AOs, exceeded water quality standards by as much as 41,000 percent.⁴⁸

Ready and Abdalla expand upon the hedonic analyses of others and reviewed the amenity and disamenity impacts of agriculture in Berks County, Pennsylvania, including different types of open space (publicly owned, eased, vacant, pasture/crops), landfills, airports, mushroom production, and AOs. The study determines that "only landfills have a worse effect on adjacent property values,⁴⁹ and further states, "a sewage treatment plant has less depressing effects on nearby housing prices

than a factory farm operation." The study also finds that the clustering of AOs within a certain area is the controlling factor, not the location of the nearest operation when considering proximity. The study reports a value impact of -4.1% from AOs within 800 meters, and at least -6.4% from within 500 meters, both of which were half the impact of a landfill at comparable distances. The study did not find any statistically significant difference in the effects based on AO size or species.

Herriges, Secchi, and Babcock expand upon previous work on AO price effects by using variables to quantify the effects in a hedonic analysis of proximity, size, and direction of nearest facility. Direction from site was included to determine the effect of being downwind, and the odor and pest issues associated with AOs. Results from this study indicate that a moderate-size facility has a value impact up to -6% within 1.5 miles and -26% within a 0.25 mile.⁵⁰

Finally, Keske documents ten lawsuits over AO nuisance in which the plaintiff prevailed, with jury awards ranging up to \$50 million (Table 2). The size of these awards suggests that preventive measures, even if expensive, might be cost effective.⁵¹

Summary of AO Empirical Findings

The establishment of an AO results in value diminution to nearby properties, both through a negative

externality as well as through indirect economic impacts. The amount of the value loss is an inverse function of distance (closer properties diminish more), a function of property type (newer, nicer residences lose more), and a function of property use (farms will lose value due to diminished productivity and comparative marketability to farm lands further away; residential use will no longer be a highest-and-best use). The empirical studies and case studies results indicate diminished marketability, loss of use and enjoyment, and loss of exclusivity that can range up to nearly 90% of otherwise unimpaired value for homes that are adjacent to the facility. Negative impacts are noted at distances exceeding 3 miles, and in the case of a flood or other weather event, waste from the facility can be spread over far greater areas, extending the area of negative impact (Table 3).

Mitigation of Impacts

There is surprisingly little empirical evidence of attempts to mitigate either the physical impacts or the perception of negative externality of AOs given the fairly consistent evidence of negative impacts on surrounding property values. The most significant and transcendent impacts are surrounding community values and economics and to air quality. However, neither of these is well suited to mitigation efforts. Generally, mitigation fall into three categories: waste management plans, tree windbreaks, and anaerobic

Table 2 Damage Awards Related to AOs

Year/State	Jury Award	Case/Remarks
1991/NE	\$375,600	<i>Kopecky v. National Farms</i> , swine operation
1996/KS	\$12,100	Swine settlement – parties undisclosed in news article
1998/KS	> \$15,000	<i>Twiemeyer v. Blocker</i> , beef operations
1999/MO	\$5,200,000	<i>Hanes v. Continental Grain</i> , swine operation
2001/OH	\$19,182,483	<i>Seelke v. Buckley Egg Farm</i> , poultry
2002/IA	\$33,065,000	<i>Blass v. Iowa Select Farms</i> , swine operation
2004/OH	\$50,000,000	<i>Bear v. Buckley Egg Farm</i> , poultry
2006/AL	\$100,000	<i>Sierra Club v. Whitaker</i> , swine
2006/MO	\$4,500,000	<i>Turner v. Premium Standard Farms</i> , swine
2007/IL	\$27,000	State of Illinois (respondent unreported), swine

Source: Catherine M. H. Keske, "Determining the Economic Feasibility of Anaerobic Digestion in Colorado: Guidelines for Animal Farm Producers," CSU Extension Fact Sheet 1.229 (2012).

50. Herriges, Secchi, and Babcock, "Living with Hogs in Iowa."
51. Catherine M. H. Keske, "Determining the Economic Feasibility of Anaerobic Digestion in Colorado: Guidelines for Animal Farm Producers," CSU Extension Fact Sheet 1.229 (2012). <http://www.ext.colostate.edu/pubs/livestk/01229.pdf>.

Table 3 Summary of Studies of AO Value Impacts

Case Study	Value Loss	Remarks
Ables/Allison and Connor (1990)	\$430 within 5 miles	Greatest impact within 1.6 miles
Taff, Tiffany, and Weisberg (1996)	N/A	AO sited near older, less-expensive homes
Palmquist, Roka, and Yukina (1997)	9%	Average up to 2 miles
Hamed-Johnson, and Miller (1999)	6.6%–88%	Largest loss if within 0.10 mile
ABA Presentation (1999)	N/A	Confirmed respiratory problems
Central Industries (2000)	60% for farms closest to plant	USDOL cases, values by appraisal
Beasley (2001)	Up to 30%	Impacts 10% at 1.5 miles
Allen (2002)	30% @ 0.75 mile	Confirmed by court and local appraiser
Spears (2003)	N/A	40 km of beaches closed due to AO emissions
Herriges, Secchi, and Babcock (2003)	26% at 0.25 mile	Moderate-size AO, 6% at 1.5 miles
Weida (2004)	40% at 0.50 mile	10% at 2 miles
Ready and Abdalla (2005)	Residence at 0.25 mile > 6.4% Residence at 0.50 mile 4.1%	Roughly half the impact of a landfill
Kim and Goldsmith (2008)	23.5% at 1 mile	18% average within 3-mile radius
Isakson and Ecker (2008)	44%	Directly downwind and within 2 miles

Source: Catherine M. H. Keske, "Determining the Economic Feasibility of Anaerobic Digestion in Colorado: Guidelines for Animal Farm Producers," CSU Extension Fact Sheet 1.229 (2012).

digestion. Nonetheless, such mitigation does not appear to have an economically material impact on nearby property values.

Waste Management Plan

Laws or regulations typically require wastewater runoff treatment. However, some facilities go beyond that with actual waste management plans. There is some evidence that such plans will have marginal impact, as noted in the Ready and Abdalla study, which found a residential value differential of 4.2% versus 1.1%. Notably though, some of the most severe impacts have occurred near facilities with mandated waste management plans, particularly when and after those plans failed. For example, in one four-month period, the Central Industries facility studied by Ready and Abdalla committed approximately 1,114 permit violations, exceeding the pollutant limitations set forth in the company's permit by hundreds of percentage points and exceeding its permitted flow rate by millions of gallons. Hence, the efficacy of a waste management plan must be taken in the light of potential impacts of violations.⁵²

is limited by a number of factors. First, the up-front costs can be prohibitive—typically \$1.2 million, and up to \$5 million depending on the technology used. Also, annual operating costs are significant, and while these technologies are sold with the promise of offsetting electric bills, Keske notes that in the study area (Colorado) electricity rates are already lower than other parts of the United States. Hence, AO operators should be "particularly wary of relying on anaerobic digestion to generate revenues by selling electricity to the utility." Finally, Keske notes that for a biogeneration facility to be feasible, at least two of the following criteria must be met:

1. The AO meets the definition of a confined AFO.
2. The waste stream can be combined with the waste stream of another operation or business (e.g., food manufacturing, municipal waste).
3. The AFO already receives frequent odor complaints.
4. The AFO produces swine or chickens (the two most egregious sources of biogas).
5. The AFO incurs more than \$5,000/month in average electricity or heating charges.

Keske notes that given the high threshold of cost of this mitigation approach, the approach is feasible only if it outweighs costs associated with not implementing a mitigation plan. As previously mentioned, to support this Keske documents ten lawsuits in which claimants were awarded as much as \$50 million for agricultural nuisance (Table 2). Notably, the two largest awards cited (\$50 million and \$19 million) were for poultry operations.⁵³

Summary and Conclusions

Since *The Appraisal Journal's* previous review of AO effects on proximate property values,⁵⁴ new study approaches have been identified. First, there has been an increased use of GIS by local governments, which has given researchers the ability to

conduct more thorough investigations. GIS provides researchers with more data—in abundance and in detail—and allows researchers to better locate which factors, and to what degree, have an effect on value.

Second, in conjunction with more data and use of GIS, there are substantial improvements in the hedonic analyses performed. Keske noted that early studies (such as the Taff, Tiffany and Weisberg study and the Palmquist, Roka, and Yukina study) were conducted on fewer than 300 sales transactions each, while the later study by Ready and Abdalla reviewed 8,090 sales, and the Herriges, Secchi, and Babcock study examined 1,145 sales transactions.

Third, because of the increased use of GIS and the results from the hedonic analysis in newer case studies, it has been shown that an AO's basic impact is related to proximity and size, but there are also other factors, such as the operations' waste management practices, that can reduce or exacerbate that impact. Overall, the new studies confirm the valuation impacts reported in earlier studies, as they range from 3.1% to 26% loss depending on multiple factors, and that properties immediately abutting an AO can be diminished as much as 88%. More importantly, however, is the discussion of the impact of other site-specific factors that were considered as part of the hedonic analyses.

With respect to mitigation efforts, the Ready and Abdalla study of Berks County (Pennsylvania) shows that at 800 meters an operation with a waste management plan diminishes a house's value 1.1%, while an operation without such a plan would diminish the value 4.2%. Also related to this is the effect of operation size on property values. Both the Ready and Abdalla study and the Herriges, Secchi, and Babcock study show that a larger facility in close proximity would not necessarily decrease the value of a nearby property more than a smaller facility. Both of the studies concluded that this effect could be attributed to unmodeled characteristics such as waste management practices and other site-specific attributes.

52. Ready and Abdalla, "The Amenity and Disamenity Impacts of Agriculture."
 53. George W. Malone, "Environmental and Production Benefits of Trees for Poultry Farms," U. Delaware Cooperative Extension Service (2001).
 54. Keske, "Determining the Economic Feasibility of Anaerobic Digestion."

55. *Ibid.*
 56. Kilpatrick, "Concentrated Animal Feeding Operations."



January 3, 2017

Curtis J. Bedwell, MAI
P.O. Box 1330
Kōloa, Hawai'i 96756
curtisbedwell@gmail.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Curtis J. Bedwell:

Thank you for your letter dated July 20, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Comments by Kilpatrick about the adverse economic impacts of the dairy appear to be based on nuisance parameters and footprints of conventional feedlot dairies found on the mainland, not on those of the planned Dairy which will be a modern facility that uses rotational pasture-grazing. Results of technical studies presented in this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort and residential areas. The review of property values adjacent to beef cattle operations in the Kōloa region reveals newer homes with large square footage in a luxury residential community with 2016 assessed values of \$1,297,150 per lot, to \$2,893,100 per lot with a home. The proposed dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area.

PRINCIPALS

Francis S. Oda, Arch.D.,
FAA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACP

Hiroshi Hida
AIA

John A. Kilpatrick, PhD, MAI, is the managing director of Greenfield Advisors and is a visiting scholar in real estate finance at the Zicklin School of Business, Baruch College. He is the author or a contributing author to eight books, including *Private Real Estate Markets and Investments*. His research has been published in *The Appraisal Journal*, *Journal of Real Estate Research*, *Journal of Housing Research*, *Real Estate Issues*, *Journal of Property Investment and Finance*, *Journal of Wealth Management*, and *Journal of Real Estate Literature*. His work in real estate appraisal has been featured in *The Wall Street Journal*, *The New York Times*, and *The Boston Globe*, among others. **Contact: john@greenfieldadvisors.com**

Web Connections

- Internet resources suggested by the Y. T. and Louise Lee Lum Library
- eXtension Land-Grant University Cooperative Research Information
 - Geospatial Technology
http://www.extension.org/geospatial_technology
 - Animal Manure Management
http://www.extension.org/animal_manure_management
- Food & Water Watch—Factory Farms
<http://www.foodandwaterwatch.org/food/factoryfarms/>
- Texas A&M University, Texas Animal Management Issues Clearinghouse
<http://tammi.tamu.edu/index.html>
- US Department of Agriculture, National Agricultural Library
<http://www.nal.usda.gov/topics>
- US Environmental Protection Agency
 - Agriculture Center
<http://www.epa.gov/agriculture>
 - Drinking Water Regulations
<http://water.epa.gov/lawsregs/rulesregs/sdwa/currentregulations.cfm>
 - Animal Feeding Operations Overview
<http://water.epa.gov/pollwaste/nptdes/qfo/index.cfm>

Curtis J. Bedwell
January 3, 2017
Page 2 of 2

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUJAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner



Attn: Laura McIntyre
State of Hawai'i, Department of Health
1250 Punchbowl Street,
Honolulu, HI 96813
Email: doh.epo@doh.hawaii.gov

Attn: Jeff Overton
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813
Email: HDF@Group70int.com

Hawai'i Dairy Farms, LLC.
P.O. Box 1690
Kōloa, HI 96756-1690
Email: jim@hawaiidairyfarms.co

Comments to be considered for Hawaii Dairy Farms EIS, TMK 4-2-9-003-001 and 006, 4-2-9-001-001

My former concerns in my letter of February 23, 2015 have not been answered and I now have even more questions. I find the economic analysis lacking substantiation and incompatible with research by Dr. John Kilpatrick and his letter to Mayor Carvalho, which shows a devaluation of south shore properties by 26% to 88%, and the entire island of Kauai negatively affected by an increased tax rate. I have been a south shore realtor for 35 years and I cannot understand how anyone would consider spoiling the pristine area of Mahaulepu, with a project that is hazardous to the island and our health, would devalue our property and depress current business. This DEIS, as done by the architectural design company of the Dairy, does not protect the public interest.

Clearly the evaluation of alternative sites was insufficient, failing to consider interior locations on Kauai or the other islands and other credible opportunities for agricultural crops on the Mahaulepu site. Evidently the New Zealand model no longer suffices and the EIS should specify an exact model, noted only as from "the world's best island models." The waste management plan is totally inadequate anyway. It proposes to contain all waste on the property then admits runoff will occur. Why aren't the ditches terminated on the property with huge catchment basins or a septic system implemented? It doesn't look like the soil would support them either. Then the EIS should model the clean-up process, forecast as millions or billions for similar coastline areas, and provide bonds for those costs, which will otherwise be the burden of state, county, and taxpayers.

The south shore includes Kauai's major hotel and condominium resorts, expensive vacation homes and residences, popular beaches and other tourist activities. The tax base of this area depends upon its popularity, which would be severely impacted by a dairy farm close by, shown to be much more significant than any revenue from the proposed Dairy. Trends show that an intrusion like this one



into resort areas, is likely to decrease the billion dollar tax basis and make close by homes unmarketable. Our entire Kauai economy would be affected when tourists "get wind of" the smell and spoiled beaches on the south shore. The reality is that the strong trade winds will drive the odor and flies into the developed areas. On first arrival to Poipu, the tourists coming along Alakinoiki Road will smell and see the dairy barn. What a first impression! The EIS needs to specify how these effects would be avoided. Pollution of the ocean and nearby beaches seems inevitable with the current HDF plan and insufficient waste management plan.

The EIS did not answer: "First and foremost, another site should be located for the Dairy where the entire operation can be accommodated, including processing of the milk. The Mahaulepu area should only be considered for other agricultural use, taro or other crops which would not disturb the natural flora and fauna already established. Cattle or any livestock would destroy much of the natural terrain and the species it currently supports. The special zones of Mahaulepu, and marine environment need protection, especially from the existing streams and waterways flowing into the ocean. Monk seals, for example, come to the Mahaulepu shoreline yearly, have their pups there, and return for generations. They are particularly prone to bacteriological infection. How will the runoff affect their limited numbers? The zoonotic diseases carried by cattle would effect humans and other mammals, from the waste runoff, insects and wind carrying bacteria for miles to surrounding areas. The EIS should include a plan to control all contamination of the surrounding environment, including all vectors of disease. The most obvious need is to control the biting black flies without the use of more chemical pesticides. The EIS needs to evaluate, prevent and plan control of algae blooms created by even a slight change in ocean temperature or acidity, likely to be the effect of this many cows in one area." The waste is more than the land can sustain.

Livestock is not an efficient use of agricultural land for amount of food production. The methane is much more deleterious than the equivalent carbon footprint. The amount of methane produced can be cumulative in the atmosphere and reduce the ozone layer, to produce a hotter, dryer climate. Add this effect to global warming and expected droughts. The EIS must speak to the amelioration of the air, water and soil with scientifically determined testing by qualified disinterested specialists and the Department of Health.

In addition to ground water pollution and surrounding well pollution, the EIS needs to speak to the availability of water sources for the cattle. The right and title to water supply for irrigation is in question, along with Hawaiian rights and state property. Referencing potable drinking water, the DEIS page 4-82 describes projected future well water usage, which means shortages coming sooner with the dairy operation requiring an additional 30,000 gallons per day to start up and 86,000 gallons per day of potable well water for full operation. The dairy is not an efficient use of our water and other studies refute the safety of nearby county wells because of surface waters running into the aquifer. Further studies and research are indicated because of the likelihood of contaminant intrusion to our water supply and the ocean.

Respectfully,
Betty Bell
2895 Milo Hae Loop
Koloa, HI. 96756

January 3, 2017

Betty Bell
2895 Milo Hae Loop
Koloa, Hawaii 96756

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Betty Bell:

Thank you for your letter dated July 25, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix I.

Comments by Kilpatrick about the adverse economic impacts of the dairy appear to be based on nuisance parameters and footprints of conventional feedlot dairies found on the mainland, not on those of the planned Dairy which will be a modern facility that uses rotational pasture-grazing. Results of technical studies presented in this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort and residential areas. The review of property values adjacent to beef cattle operations in the Koloa region reveals newer homes with large square footage in a luxury residential community with 2016 assessed values of \$1,297,150 per lot, to \$2,893,100 per lot with a home. The proposed dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area.

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Pu Kim
IBBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

The Hawai'i Dairy Farms project emerged from a group of partners and affiliates, including Grove Farm, Finistere Ventures, Kamehameha Schools, Maui Land & Pineapple and Ulupono Initiative. The group conducted grass trials statewide to determine the best site for a rotational-grazing pasture based dairy. In addition to the grass trials, HDF coordinated with landowners of agriculturally-zoned lands in the State, as well as the Department of Agriculture, the Agribusiness Development Corporation, and the Trust for Public Land. The broader team identified, toured and evaluated six parcels of sufficient size: two on O'ahu; two on Hawai'i Island; and two on Kauai. Kauai was found to be the optimal location, as it met all the operational requirements for pasture-based dairy:

- Relatively flat, contiguous acres to move cows with minimal stress,
- Soils suitable to efficiently utilize applied nutrients for growth of forage,
- Adequate water for irrigation and operations,
- Suitable climate conditions for animals and grass growth,
- Agricultural-zoned land available for 20 years or more of sufficient acreage to support an economically viable dairy, preferably IAL, and
- Access to required operational support elements (trucking, pasteurization, work force, etc.).

In response to comments on the Draft EIS, Ulupono Initiative again searched for agriculturally-zoned land with potential long-term availability that may have become available in the past few years. An additional 1,300 acres of Grove Farm property on Kauai in the Māhā'ulepū area were recently vacated by Pioneer Seed Company. These fields are closer to resorts and residences, and do not provide further benefit to the project or community than the HDF site evaluated in this EIS. Alexander & Baldwin announced in January 2016 that Maui lands in sugarcane will be transitioned to diversified agriculture in the future. However, water rights and access for diversified agriculture must be settled through a forthcoming process, and water availability is currently unknown. Thus Ulupono Initiative, which conducted the research, is unaware of any new property meeting the requirements for a pasture-based dairy that has become available since its initial evaluation.

There are no State or Federal regulations for greenhouse gas emissions from farm operations or small businesses. However, livestock and agriculture as an industry contributes to greenhouse gas emissions, so HDF engaged a technical expert to model potential greenhouse gas (GHG) emissions based on the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories, as no dairy is currently in operation. The GHG emissions included methane and nitrous, converted to carbon dioxide equivalents (CO_{2e}) using the IPCC's AR3 global warming potential (GWP) that relates the GHG to CO₂. The IPCC Parameters for Oceanic dairy cattle in warm climates were selected as most applicable to the rotational-grazed dairy operation and conditions at HDF. See the EIS Sections 4.19 and 4.26, and Appendix I for complete information.

The emissions potential for GHG at HDF with the committed herd size of 699 milking cows was estimated as 2,693 CO_{2e} metric tons (2,969 U.S. tons) per year. This is equivalent to the GHG generated by 170 4-person households. Potential GHG emissions from the contemplated future herd size of up to 2,000 milking cows was estimated at 7,705 CO_{2e} metric tons (8,493 U.S. tons) which is equivalent to 485 4-person households. GHG estimates for household energy consumption includes home energy use, transportation and waste.

While the presence of cows may increase GHG, a long-term beneficial impact of the grazing fields is the sequestration of carbon as CO₂ captured by the process of photosynthesis by the grass. According to recent studies in the Soil Science Society of America Journal, converting formerly tilled cropland to grazed pasture can drive substantial accumulation of organic carbons in soil, which enhances soil quality, grass production, and has the potential to offset up to one-third the annual increase in CO₂ production of an area. Operational practices to protect air quality by reducing nitrogen emissions will come from guidance in NRCS Conservation Practice Standard 590, Nutrient Management. Application of nutrients must be adjusted to minimize negative impacts of GHG release to the environment through adjustments to the source, timing, amounts, and placement of nutrients. Specific practices to be utilized at HDF include: slow release fertilizers; nutrient enhancement technologies; and stabilized nitrogen fertilizers.

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 *Geology of Māhā'ulepū and Vicinity* displays the volcanic geological history of the area.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

The proposed action is consistent with the public trust doctrine. The Hawai'i Constitution states that all public natural resources, including water resources, are held in trust by the State of Hawai'i for the benefit of the people of Hawai'i and that the State should "conserve and protect" those natural resources but also "promote the development and utilization of these resources." The Hawai'i Supreme Court has held that, as a result, the State has a "dual mandate." That mandate is 1) to conserve and protect the water resources of the State, which include both groundwater and surface water and but also 2) to allow for "maximum beneficial use" of those resources, including for agriculture. The Hawai'i Supreme Court has therefore expressly rejected the concept that "resource protection" is a categorical imperative. It has held that the State should allow "controlled development" that, while giving preference to public use, access and enjoyment, "promote[s] the best economic and social interests of the people of this state."

Based on this dual mandate, the State has developed the water code, which states that it should be "liberally interpreted to obtain maximum beneficial use of the waters of the State for purposes such as domestic use, aquaculture uses, irrigation and other agricultural uses, power development and commercial

Betty Bell
January 3, 2017
Page 4 of 4

and industrial uses" while also adequately providing for the "protection of traditional and customary Hawaiian rights, the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the State for municipal uses, public recreation, public water supply, agriculture and navigation. Such objectives are declared to be in the public interest."

The public trust doctrine therefore involves a balance--protection and conservation of the public natural resources of the State and a maximum beneficial use of those resources, including for agriculture. Designation of "important agricultural lands", including the HDF site, heightens the public interest in development of agriculture as the Hawai'i State legislature has declared that the people of the State have a "substantial interest in the health and sustainability of agriculture as an industry" and, when so designated, the policy of the State is to promote the long-term viability of agriculture uses on those lands, including by "promot[ing] the maintenance of essential agricultural infrastructure, including the irrigation systems." This serves the "compelling state interest in conserving the State's agricultural land resource base."

The proposed dairy farm will use water from Waita Reservoir for irrigation, which is also the water source for several other farmers and ranchers in the area, including a taro farmer. Non-potable water from Waita Reservoir, which uses water from upland streams, provided irrigation water to the sugar plantation that historically operated in the Māhā'ulepū area, and is used for recreational fishing. The reservoir is located west of the HDF site.

Potable water for the dairy farm will be drawn from deep groundwater wells that were installed by the sugar plantation that formerly operated on the site. The potable water will be used as drinking water for people working on the dairy farm and for the cows. As a result, the proposed action will advance both purposes of the public trust doctrine. The dairy farm will advance the important public interest in protecting and conserving agriculture in the State, including on important agricultural lands, and also further the goal of maximum beneficial use of the surface water and groundwater on those important agricultural lands.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Hawaii Dairy Farms DEIS

Kunoo <jack@kunoocattle.com>

Sun 7/24/2016 5:52 PM

To: HDF <hdf@group70int.com>;

To Whom It May Concern:

I am writing as a Hawaii business owner and member of Hawaii's agricultural community to express my support of Hawaii Dairy Farms' draft Environmental Impact Statement (DEIS).

My company, Kunoo Cattle Company, is under contract to purchase one of Hawaii's few butcheries. Part of our business depends on the existence and persistence of other livestock businesses, including the Hawaii Dairy, which needs a place to sell its dairy cows once they pass their milking maturity. In addition to the jobs Hawaii Dairy farms will create directly, it will support and sustain approximately 20 positions in my company, which is co-located on Kauai and Oahu.

As an environmentalist and a holder of a Master of Environmental Management degree from Duke University, I have an appreciation for the complexity of ecosystems and what is referred to as the "total ecology" which accounts for social and economic variables, in addition to environmental ones. I truly believe Hawaii Dairy is a responsible use of Kauai's resources and will provide a service to Hawaii that will increase not decrease its resource stewardship and progress towards authentic sustainability.

Mahalo,

Jack Beuttell
1401 Wilhelmina Rise
Honolulu, HI 96816

Jack Beuttell
Kunoo Cattle Company
Oahu, Hawaii
(808) 651-3171
jack@kunoocattle.com

www.kunoocattle.com
[@kunoocattle](https://www.linkedin.com/company/kunoocattle)
[LinkedIn](#)



January 3, 2017

Jack Beuttell
jack@kunoacattle.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Jack Beuttell:

Thank you for your email of July 24, 2016 regarding the Hawai'i Dairy Farms Draft (HDF) Draft EIS. The following responses are offered to your comments:

Thank you for your supportive comments on the HDF proposed rotational-grazing dairy. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

We appreciate your review of the HDF EIS and its findings that soils will be improved by the additional organic matter, erosional run-off will be reduced through pasture management practices, and HDF monitoring of soil and water conditions will ensure the health and safety of the community and the environment for years to come.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

PRINCIPALS

Francis S. Oda, Arch.D.,
FAA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihel
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucicola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hidb
AIA

July 21, 2016

State of Hawaii
Department of Health
Attn: Laura McIntyre
Environmental Planning Office
1250 Punchbowl St
Honolulu, HI 96813

Re: Comments- Hawaii Dairy Farms Draft Environmental Impact Statement for Kauai Island

I have received and read the DEIS produced by Group 70 International for Hawaii Dairy Farms and Ulupono Initiative/Pierre Omidyar. I am a nearby resident, and I am alarmed at the proposal to introduce this large scale dairy operation to this area. Please include me as a person of interest for notices regarding this proposal.

The DEIS as presented is both vague and self-serving. It does not adequately explain how the historical large feed lot operation problems encountered in other locations world-wide will impact the nearby marine environment/reefs, residents, tourism, and recreational features of the Mahaulepu Valley. The DEIS merely mentions that many negative impacts will occur and that they will be managed with "best management practices". There were 24 changes made to the original plan that were included within this DEIS, many including more far-reaching negative impacts to the environment and marine environment. This is not an adequate proposal, and should be an indication of how HDF will operate their dairy if allowed. It is important to note that there is currently an EPA action in progress, with allegations of violations of the Clean Water Act. The DEIS does not address the issues presented to the EPA. The Mahaulepu Valley gradually slopes to the ocean. There is an existing ditch network that drains to the Waiopili Stream and ultimately to the ocean. The water table rises to within a few feet of the surface/ground and natural aquifers, but the DEIS does not adequately explain how this will allow for adequate treatment of waste. Millions of gallons of liquid manure will travel through this ditch system, particularly during the many storm events. Pesticide and herbicides used to control flies and weeds will also drain to the ocean and reefs. Animal hormones and antibiotics used in the dairy industry will also have negative impacts. Recent controversy has emerged regarding a Concentrated Animal Feed Operation in North Carolina that sprays liquid waste as a fertilizer, causing putrid odors and biting fly problems. This appears to be the same dispersal method proposed in the DEIS for cow manure. Communities throughout the world have taken action to close dairies due to negative environmental and health problems. The last large dairy on this island in Mooloa was associated with putrid odor, biting flies, and waste concentration problems. The Waiopili Stream within Mahaulepu enters the ocean in a location frequented by beach-goers. It is currently the most polluted stream on the island, with no action taken by the landowner or state to warn of possible harmful effects of this exposure. The dairy operation will only make this situation worse. Odors and biting flies are a feature of feed lot operations and will bother residents and visitors miles away. This dairy should not be allowed in Mahaulepu for many reasons, but primarily due to the significant potential environmental health and marine environment impacts



associated with concentrated animal operations. The NPDES Stormwater Permit Application has false information submitted and should be carefully examined. The DEIS proposes to rationalize operating in this area, but falls short in presenting enough benefit for doing so.

The Mahaulepu Valley is an important historical area, once inhabited by a community of early Hawaiians who sustained themselves with natural agriculture and aquaculture. There are numerous archeological features here. It is a sacred location to the descendants of this island. There are taro fields in operation nearby. Makauwahi Cave Reserve is adjacent, and is a renowned archeological site known world-wide. Residents and tourists visit the cave, which sits next to the very polluted Waiopili Stream. The cove and beach less than one mile from the proposed dairy is frequented by residents and tourists on a daily basis. The proposed dairy location is within a premiere Kauai vacation destination area, with visitors who will be subject to the negative dairy problems very nearby. The beach and marine environment are important resources to this island, and to propose a large scale feed lot operation with its inherent associated problems is contrary to good common sense. The beaches and nearby marine environment belong to the residents of this island and state, and we will fight to protect them.

Roger Bishop
PO Box 173
Kalaheo, HI 96741

Cc: Kauai County Council Members
Mayor Bernard Carvalho
Hawaii Dairy Farms
Pierre Omidyar

January 3, 2017

Roger Bishop
P.O. Box 173
Kalaheo, Hawaii 96741

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Maha'ulepi, Koloa District, Kauai, Hawaii
Response to Comment on Draft EIS

Dear Roger Bishop:

Thank you for your letter dated July 21, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

In preparation to develop the Draft EIS, HDF listened to public concerns, retained knowledgeable consultants to conduct technical analyses, refined data gathered from field trials on site, and further incorporated U.S. standards and best management practices to create a world-class design for the environmentally sound pasture-based, rotational-grazing dairy. These technical studies and ground-level trials provided additional field-tested data to refine the Waste Management Plan (WMP). It is common practice to periodically update a WMP as site conditions change or are better known to ensure the regulators are reviewing the most current information. HDF prepared a summary of the changes for the Wastewater Branch to highlight the refinements. On July 13, 2016, DOW Wastewater Branch acknowledged that its questions on the updates to the WMP had been addressed by HDF, and that WWB had no further comments at that time. The WMP is not a component of the EIS, however, all relevant information in the updated WMP was incorporated into the DEIS to ensure consistency and transparency for public review and disclosure.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainage way (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

PRINCIPALS

Francis S. Oda, Arch.D.,
FAA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

Waioipi Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waioipi Ditch will be improved by active management of the dairy site.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and will allow for evaluation of possible contamination sources.

As part of the EIS process, the HDF project is subject to a historic preservation review by the State Historic Preservation Division under Hawai'i Revised Statute Chapter 6E and Chapter 13-284. An Archaeological Inventory Survey (AIS) and a Cultural Impact Assessment were conducted by Scientific Consultant Services for the proposed project. Sections 4.7 and 4.8 of the EIS provide an evaluation of archaeology and cultural resources, with the full reports in Volume 2, appendices G and H.

Traditional and historic use of the Māhā'ulepū area includes intensive sugarcane cultivation throughout the entire valley (including the project area), as evidenced by the infrastructure in the valley. Early 20th century maps also document the extent of the fields throughout the Kōloa area, showing the entirety of the current project area consisted of sugarcane lands. Based on the research and comments received from the community, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights or any ethnic group related to numerous traditional cultural practices will not be impacted by establishment of the dairy.

The State Historic Preservation Division accepted the AIS on December 19, 2016 (Appendix G). SHPD concurs with the significance assessments and mitigation recommendations in the AIS, which identifies the 14 plantation-era sites within the project area as significant only under Criterion d (information potential). The letter states no further work is recommended for these sites (50-30-10-2251 through 2262). Two sites outside the Project Area, an enclosure (Site-2250) and a petroglyph complex (Site-3094), were assessed as significant under Criterion d (information potential) and e (cultural value). The SHPD letter states that the current proposed project will not affect these two sites, and no further mitigation is recommended for the project.

Based on the AIS and CIA technical reports, no significant cultural resources are located on the HDF property. Access to adjacent properties will continue to be the responsibility of the land owner, Mahaulepu Farm, LLC.

There are no known caves or lava tubes found at or adjacent to the dairy farm property. The nearest cave of the Kōloa Lava Tube System, which provides habitat for two endemic cave species, the Kaua'i Cave Wolf Spider and the Kaua'i Cave amphipod, is located 0.75 miles from the dairy farm property. There is no evidence of lava tubes or caves on the property, and no such features have been reported for the area near the HDF site. No cave invertebrate species will be affected by the dairy farm.

Based on hydrological knowledge derived from all drilled wells analyzed by Nance, the downslope movement of ground water from below the pastures toward the habitats of listed arthropods will not reach into the referenced habitats. Recognizing that the food supply of the wholly saprophagous amphipod is organic matter derived from roots and other decaying plant debris, and since nitrogenous and phosphoric nutrients will promote plant growth, their effects, if anything at all, can be expected to expand the food supply in this oligotrophic subterranean ecosystem.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix I.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 24, 2016

Laura McIntyre
State of Hawaii, Department of Health
Environmental Planning Office
919 Ala Moana Blvd., Room 312
Honolulu, HI 96814
epo@doh.hawaii.gov

Jeff Overton
Group 70 International
925 Bethel St., 5th Floor
Honolulu, HI 96813
HDF@Group70intl.com

Submitted via E-mail to all parties.

Subject: Consulted Party Comments on Draft Environmental Impact Statement (DEIS) for Hawaii Dairy Farms' Proposed Dairy Operation

To Whom It May Concern:

Because the Hawaii Dairy Farms HDF has recently sent amended technical information to the Hawaii State Department of Health (DOH), I am requesting that the comment period for this DEIS be reset after all changes to the EIS, supporting studies and dairy operational documents be distributed to interested parties.

I am grateful that HDF undertook this Environmental Impact Statement (EIS). I have read the entire EIS, including all the technical studies. I have learned more about the operational logistics and geographic scope of the project, the hydrology, soils and the existing stream water pollution at Māhā'ulepū. However, I found the DEIS lacking in economic and fiscal analysis, an inventory of the near shore marine resources that will be impacted by dairy runoff and actual mitigation measures.

Economic and Fiscal Impacts - Unanswered Questions, Missing information

The Demographic and Economic Analysis "Hawaii Dairy Farms: Demographic and Economic Assessment" (Plash Econ Pacific (PEP) Inc., May 2016) is incomplete. The study does not meet standards for an EIS economic assessment, lacking an adequate cost-benefit analysis as well as assessment of consumer demand for HDF milk.

The dairy is intended to be "financially and environmentally sustainable," a "model" for other dairies "of investment in IAL and of successful capital investment." (Vol. 1, p. 1-4)

With a herd size of 699, the economic impact study projects annual sales of \$10,121,716 and total profits of \$1,012,172. It provides little basis for this projection.

From the information provided it is not possible to assess whether this costly project would be profitable or financially sustainable in the future. Three elements of cost-benefit analysis are missing:

- 1. Product Price**
The expected price per gallon of the milk produced, even a range of projected prices, at which HDF milk will be purchased by the wholesaler/processor is not disclosed in this "disclosure document." (Table III-3 Economic Impacts At Full Operations)
- 2. Operating Costs**
The only expenditures disclosed in Tables III - 2, 3, 4 and 5 are for construction, payroll and property taxes. The following annual operating expenses (even just estimated) are not stated: annual land lease (does this lease include any charge for irrigation water or potable water?), cost of purchasing the initial cows, estimated cost of feed, cost of insemination of the heifers, cost of boarding resting heifers, estimated costs of auxiliary personnel such as veterinarians, cost of consultants utilized for monitoring, if any, cost of agricultural insurance, liability insurance, workers health insurance, and cost of equipment maintenance or replacements.
- 3. Market Study**
PEP did not conduct a marketing study. The goal of bolstering local milk production is only viable if enough buyers want and are willing to pay for the milk. What is the consumer demand for the locally grown, non organic milk that HDF will be producing? What are Hawaii consumers - residents? visitors? institutions? - willing to pay for the "local" milk grown at Māhā'ulepū? What is the trend in Hawaii regarding milk consumption? Can HDF milk compete with imported mainland milk? Will the milk have to be sold outside of Hawaii?
Where?
- 4. Buyer**
HDF does not have a buyer for its milk. Meadow Gold/Dean Foods was supposed to purchase and process HDF milk. Apparently, despite more than two years of negotiations, HDF still does not have a milk purchase and processing agreement. This unknown is more than an "unresolved issue." If HDF has to undertake milk processing on Oahu or Kauai, it will incur substantial additional construction and operating expenses, which will increase the price of the milk.

Analysis of Potential Economic Costs to the Region:

The PEP Economic Impact Study acknowledges the economic importance of the Koloa-Po'ipu region: "As mentioned previously, 36% of the island's visitor units are in Po'ipu and Kuku'i'ula, including the Grand Hyatt Kaua'i Resort & Spa which is the largest employer in the County." It states that "If nuisance impacts were to occur — which is not expected—it could result in reduced tourism, sales, employment, salaries and wages, property values, personal wealth, State and County tax revenues, enjoyment of homes and recreational activities" (Vol. 2, p. 644)

It is the responsibility of the economic analysis to quantify this regional economic value and the potential loss should "nuisances" including odors, air pollution, pests, noises not be controlled. The study fails to attempt to do so, even to its own accuracy standard of within about 25%" (p. 1 Vol 2, 1-3) Instead, it restates the conclusions and proposed control measures put forth by the other EIS studies regarding pests, air quality, odor. The Economic and Fiscal analysis is entirely deficient, indeed negligent in this respect.

Further, Māhā'ulepū provides economic value as an undeveloped watershed. I hoped that the EIS would use the natural capital framework and methodology such as Invest, a package of modeling software created by Stanford University scientists to assess the value of an area's natural capital. This valuation of the worth of the ahupua'a of Māhā'ulepū would provide a monetary component to the NoBuild Alternative and would also help to actually value the impact of potential environment degradation.

Unaddressed Significant Cumulative Impacts

The Surface Water Quality and Marine Assessment Study (Marine Research consultants, Steven Dollar, May, 2016) is also deficient. Ten nutrient runoff events from the dairy into ditches, streams and the ocean are anticipated every year. This runoff is apparently unavoidable and will not be contained by setbacks, filter strips and buffer plantings. "Using NRCS curve number method to compute runoff for the sites' B and D class soils and irrigated pasture in good condition, it is estimated that actual runoff into drainage ways from HDF pasture will only occur when rainfall exceeds 0.8 inches. Based on the 30 year daily rainfall record for the areas such events are estimated to occur approximately three percent of days, or an average of 10 days annually. (TNWRE, 2016 (Vol1, p. 4-66, 4-67) (Volume 2, p. 1.4.2, p. 1-14)

This nutrient load of nitrogen, phosphorus and bacteria etc. will be added to an already polluted ecosystem. The DOH Māhā'ulepū Sanitation survey estimates groundwater and coastal waters of south-east Kaua'i are being contaminated by wastewater from the Waikomo Watershed injection wells and cesspools with roughly 3 MGD of wastewater daily (CWB 2016) (Vol 1.p. 4-58). "The agricultural ditch and intermittent streams

showed degraded water quality parameters for nutrients and pathogens. Elevated levels in these water courses is due to the low flow conditions and varied inputs from the agricultural lands and natural contributions from the watershed" (CWB, 2016) (Vol 1. P. 4-62).

This added on-going nutrient load from the dairy constitutes a cumulative negative impact on environmentally sensitive areas including the stream, estuary, beach and coastal waters. The Marine Assessment Study dismissed the impact of these ongoing runoff events. After studying the near and off shore water quality at four transects on one day, October 6, 2014, the "zone of mixing" was assumed to be relatively predictable with "currents flowing in a westerly direction." The marine analysis did not study the currents along the Māhā'ulepū coast, which do not always flow in one direction. Higher surf conditions were assumed to simply add more water, more dilution, to stream outflow. The description of the stream/ditch outflow area is also inaccurate, or, at best, a single limited snapshot of a constantly changing estuary. Sometimes the stream flows directly into the ocean. Other times it flows east along the beach almost to the Gillin property.

The marine study stated that the stream is "not likely provide value as a unique biotic habitat, functioning mainly as a drainage way." However, there was no survey of existing stream biota. I have seen a holehole in the Waiopili "Ditch" up near the bridge in the Makauwahi Cave Reserve, as well as kōloa duck.

Lack of a Marine Inventory

In order to determine whether an action "will have a significant effect, curtail beneficial uses, substantially affect social welfare or cultural practices of the community, involve substantial degradation of environmental quality," the EIS must provide information about those potentially affected resources. There was no baseline inventory of the nearshore marine resources along the Māhā'ulepū Coast, including Māhā'ulepū Beach and Kawai'oa Bay. Such a study would have assessed corals, limu, invertebrates, fish, monk seals and other species. Fishing and gathering are historic and on-going cultural and recreational practices at Māhā'ulepū. These same coastal resources, long used by many Kaua'i families are the very resources the dairy will impact, yet the DEIS neglects to study their current health and abundance, or to consider potential effects.

Inadequate Mitigation – Monitoring and Insurance

"The draft EIS shall consider mitigation measures proposed to avoid, minimize, rectify or reduce impacts." (Content Requirements: Draft Environmental Impact Statement HAR 11-200-16 M.) This model of a pastoral rotational-grazing dairy has not been "proven" in Hawaii. The hydrology and soils and agronomy studies explicated how complex,

experimental and risky this undertaking is in this particular locality, making proposed mitigation measures critically important.

Monitoring:

The following statement encapsulates the need for regular, robust and transparent monitoring within and in the vicinity of the dairy. " No part of this system is stable" (Soils and Agronomy Analysis, Yost and Kruger). Monitoring is key to successful production of grass and milk, as well as to prevent and minimize risks to the environment and human health both on the dairy and in its surroundings. The results of the on-going monitoring should be the actual basis for evaluating the dairy, "contemplating" herd increases and determining the "carrying capacity" of the site.

The EIS does identify the need and intention to monitor nutrients in the soils of each "mapunit," the nutrient content of the forage, the nutrient content of the manure (on fields and in sediment/effluent), the nutrients in groundwater, nutrients, bacteria and turbidity in surface water, nutrients, bacteria and turbidity in marine water, dung beetle numbers and activity in the manure and soils, levels of greenhouse gases and odors. The DEIS asserts that "The dairy's "precision agricultural technology" promises a higher degree of monitoring capacity and transparency." Appendix D: Baseline Nutrient Balance Analysis (Group 70 and Red Barn Consulting 8.7)

However, the DEIS does not set forth a comprehensive monitoring program. The Final EIS must provide for robust, regular and transparent monitoring as a critical mitigation measure. Such a program would include:

1. a full list of what will be monitored,
2. what kinds of tests will be conducted
3. the frequency of testing,
4. who will be conducting the tests, whether dairy personnel or consultants,
5. what conditions will trigger additional tests,
6. and how and to whom (both the public and government agencies) test results will be disseminated. The qualifications and training of monitors is critical. Tom Nance Water Resource Engineering (TNWRE) identified "operating skills of the HDF personnel as a primary challenge to managing nutrients."

Insurance:

"The draft EIS shall include, where possible, specific reference to the timing of each step proposed to be taken in any mitigation process, what performance bonds, if any, may be posted and what other provisions are proposed to assure the mitigation measures will in fact be taken" (HAR 11-200-17 M). HDF must carry a large environmental insurance policy in order to "rectify" potential environmental and public health damages. Even a large policy might still only provide small compensation for irreparable losses and would need to include funding for remediation. In addition, HDF should establish a social and environmental remediation endowment, partially funded by

a portion of milk sales. The existing DEIS assumes there will be no negative impacts to mitigate, and includes no provisions for insurance.

Conclusion

The Draft EIS does not fully address the significant potential impacts of the dairy to Māhā'ulepū or the surrounding community. The scope of investigation focuses on the immediate dairy lands, and neglects to consider impacts on near-by sensitive ecosystems such as Makauahi cave and the coast, or cumulative impacts on the stream. The final EIS should include inventories of the stream and near shore marine resources to be impacted by dairy runoff, as well as significantly improved economic and fiscal analysis. Finally, the DEIS does not provide adequate mitigation measures including a comprehensive monitoring plan.

Thank you to all concerned.
Respectfully and with aloha,

Beryl Blaiich
PO Box 1434
Kīlauea, HI 96754
808-828-1438, 808-346-9589

HDF has adapted the "New Zealand model" – pastoral-based rotational grazing dairy – to U.S. standards and best management practices. NRCS provides extensive guidance for agricultural operations to meet stringent standards including those under the Clean Water Act. Nutrient management is a key tenet, and the protection of waterways has been applied to the design of HDF paddocks using fencing to create large setbacks from drainages.

Waipili Ditch receives runoff from the larger 2,700-acre Māhāūlepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waipili Ditch will be improved by active management of the dairy site.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and will allow for evaluation of possible contamination sources.

Marine Environment Baseline Assessment

MRCI conducted a marine environment baseline assessment to assess the nearshore environment offshore of the discharge point for the man-made Waipili Ditch drainage channel. The survey collected a quantitative data set to evaluate the composition of the benthic marine habitats and resources in the offshore area, including corals, algae, fish and invertebrates. Appendix F includes the marine baseline assessment.

The Māhāūlepū area is an open coastal area directly exposed to long-period south swells and trade wind generated east swells, which create physical forces that strictly limit coral community structure and related benthic communities. The overall structure consists of a submerged basaltic shelf extending across the nearshore study area, with wide plains of white sand flats seaward of the basaltic shelf. Distinct biotypes show bottom composition of flat pavement with patches of red alga (*Asparagopsis taxiformis*) and scattered coral heads of pioneering species (*Pocillopora meadriana*) that are adapted to high-energy zones. Pillow lava formations near the study area are nearly devoid of reef corals and macroalgae. The western portion of the study area has some zones with lower wave exposure, which showed more developed coral species and cover, at a distance of over 600 m from the drainage ditch channel discharge point. The marine environmental assessment confirms the understanding of the existing baseline nearshore conditions, which reflects a high-energy regime with very limited coral colonies, and less robust benthic invertebrate and fish communities. This assessment can be found in the addendum to Appendix F.

With the future dairy operation, the minor contributions of nutrients from episodic rainfall anticipated to occur just 10 days annually from dairy operations will not adversely affect ocean water quality and the marine environment. The nearshore area is a highly mixed environment that actively disperses inputs within several meters from shore. Comparing nutrient constituents in surface water samples taken from the HDF site and the agricultural ditches down gradient to nutrients sampled in the nearshore ocean water revealed that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is likely a result of physical mixing of water masses. In any event, the elevated levels of indicator bacteria do not extend beyond the shoreline. Baseline water quality data and the surface and marine water impact report is included in the EIS as Appendix F.

The surface water quality report found in Appendix F of the EIS states the nearshore receiving environment is an area typified by extreme energy during all seasons. Such extreme energy, primarily in the form of waves and currents, serves to rapidly disperse input from stream discharge. Hence, the time that the marine environment is exposed to episodic inputs of storm runoff is very short, and the limited marine species that occupy the area are capable of withstanding such impacts. There is also a large body of scientific literature documenting that reef corals do not require low nutrient water. For example, a multitude of corals from around the Pacific Basin growing at the Waikiki Aquarium live in high nutrient marine groundwater and have higher linear growth rates than corals in the wild. Hence, there is no reason to expect that a short-term exposure of a very limited community to elevated nutrients will result in any negative impacts to corals and associated marine life in the mixing zone of Waipili Ditch and the ocean.

There will be ongoing natural inputs to Waipili Ditch contributed from the overall watershed and the agricultural lands bordering the ditch downstream of the dairy. With the measures being taken by the dairy to actively manage surface runoff, nutrients and suspended sediments, concerns about the potential effects of dairy operations to ocean beach recreation are not anticipated.

Comprehensive Monitoring

The dairy will conduct a comprehensive monitoring program for meteorology, pasture soils, pasture grasses, groundwater, surface waters and marine waters. There will be daily monitoring of factors which are essential to the pasture management and health and production of the dairy cows. Pasture-based dairy farmers are essentially grass farmers, as the health of the pasture crop is critical to the health and production of the dairy cows. Agronomic conditions of the soils are monitored continuously to observe moisture levels and other factors.

Monitoring of groundwater quality and ditch surface water quality will be sampled and analyzed on a quarterly basis by consultants to test for nutrient levels and other constituents. Marine water quality monitoring will also be conducted by consultants on a quarterly basis. During episodic high rainfall periods which produce runoff flows in the agricultural ditch, there will be sampling and testing to assess the constituent levels from individual events. Since these peak ditch flow events are infrequent, dairy personnel will be trained to observe ditch flows, take samples from designated locations following technical protocol, and transfer these samples to the laboratory for analysis. Results from quarterly monitoring will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and allow for evaluation of monitoring results.

Agricultural Operations

The operation of the dairy will be conducted with a high level of sensitivity to the environment, as evidenced in the substantial level of planning detail and technical information presented in the EIS. The dairy will implement significant measures to minimize environmental impacts, and several substantial monitoring programs will be conducted to provide essential feedback to refine and improve mitigation programs and dairy operations.

Beryl Blanch
January 3, 2017
Page 5 of 5

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQKKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 21, 2016

Ms. Laura McIntyre
Environmental Planning Officer
State of Hawaii, Department of Health
1250 Punchbowl Street
Honolulu, HI 96813
doh.epo@doh.hawaii.gov

Hawaii Dairy Farms
c/o Jeff Overton, Principal Planner
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, HI, 96813
HDF@Group70int.com

Hawaii Dairy Farms, LLC
P.O. Box 1690
Kololoa, HI 96756
jim@hawaiidairyfarms.com

Dear Colleagues:

I am writing to comment on Hawaii Dairy Farms (HDF) Draft Environmental Impact Statement (DEIS). I have reviewed the documents and appendices, and I conclude that the DEIS is deficient in answering a number of material questions.

Alternatives to the Proposed Action. The Environmental Impact Statement Rules, Hawaii Administrative Rules Chapter 11-200 requires a discussion of alternatives that could attain the objectives of the action, regardless of cost. Implicit in that statement is an assumption that the proposed alternatives **can actually be constructed**. Hawaii Dairy Farms has failed to address alternatives in a meaningful and responsive way. Although it claims to have engaged in "rigorous exploration and evaluation of alternatives" (DEIS Volume 1: 6-1), the alternatives presented in the DEIS fall short of demonstrating that any real alternatives have been considered.

According to HAR 11-200-10(6), alternative analysis should include input from the community. HDF has failed to address the community's concerns regarding the location of the proposed dairy in Mahaulepu.

Most of the opposition to HDF is directly related to the **location** of the farm in Mahaulepu Valley, yet no effort has been expended in advancing an alternative location that is reasonable **and** available.

HDF states that an alternative location in Puhī was evaluated in 2015. The DEIS further states that the land has been contracted for sale to another landowner who is not planning to develop a pasture-based dairy. The DEIS shows a map of the proposed alternative location, but it is difficult to ascertain which parcels were considered. A review of the nearby parcels shows that there are a number of parcels owned by various parties. On December 18, 2013, Cumberland and Western Resources LLC purchased two parcels from Grove Farm: parcel 33180020000 is 758 acres, zoned agricultural, and parcel 340060010000 is 1986 acres, zoned conservation. Given the date of the sale, these parcels were not available during the study period in 2015, so which Grove Farm parcels is HDF describing when it states that the alternative location in Puhī is a combination of conservation and ag land?

Two other parcels are within the map shown in "Figure 6.5-1 Alternative Dairy Location at Kipu, Kauai". Both parcels are owned by William Hyde Rice, Ltd, and no recent sales have been reported. The fact that these parcels were unavailable for consideration during the study period demonstrates that HDF has not presented a reasonable and available alternative location. It should be required to do so.

(As a side note, despite the fact that the parcels are unavailable for development, the DEIS states that the alternative parcel is too close to the Huleia Stream and the neighboring wildlife sanctuary. If the proposed dairy is as safe as HDF claims, then why wouldn't vegetative buffers work just as well as they will at Waipii?)

In December 2014, Ulupono Initiative announced that it was evaluating the purchase of Cloverleaf Farm, a 900 acre, 700 head dairy operating on the island of Hawaii. I would like to understand more about this alternative and why it was not included in the discussion of alternatives. HDF needs to explain why the Cloverleaf location, which already has operational inputs and is located **away from population centers and the visitor industry**, cannot be enhanced to achieve the stated goals of the proposed action.

Furthermore, the Alternatives to the Proposed Action should detail what other sites across Kauai were evaluated and eliminated, and discuss the specific criteria that led to their elimination from consideration, specifically what other Grove Farm parcels were considered and rejected? Are there other Grove Farm parcels that would be suitable, but may need a zoning change to make them work? For example, going from industrial to agricultural? It is hard to believe that out of 33,000 acres, only two parcels meet the criteria, with one being unavailable for development. Does this mean that the "revival of the dairy industry in Kauai" is dependent on this one location? HDF needs to identify and evaluate a reasonable and available alternative location to Mahaulepu.

In addition, other questions should be answered to satisfy the requirement of rigorous evaluation of alternative locations, including:

1. What other large landowners in Kauai (Robinson Family, Eric Knudsen Trust, Rice Family, McBryde, State of Hawaii) were contacted, considered, and rejected?
2. What other locations on other islands were considered and rejected?
3. What other Important Agricultural Lands were considered and rejected?
4. What discussions were completed with the state of Hawaii DLNR or DOA regarding State Agricultural Park Programs and availability of other public lands?
5. What creative alternatives were considered, such as swapping appropriate state lands for Grove Farm land? Or other appropriate schemes that support the landowner and the community in a win/win?

Milk Products Processing by HDF. HDF suggests that milk processing is one of their alternatives. This is not an alternative to the proposed action, but merely an extension of their business along the value chain. It does nothing to eliminate the major problem with HDF's proposal, which is its **location in Mahaulepu Valley.**

"Suitable soils" and the NRCS Custom Soil Resource Report. This report dated June 2014 stated that the proposed site was very limited in its ability to support an animal waste operation, and "poor performance and high maintenance should be expected". There still remains a clear conflict between HDF's claim that the location provides "suitable soils" and the NRCS report that the soils are very limiting for an intensive animal feeding operation and land application of animal waste. Please explain how the NRCS conclusion is not applicable to the proposed site. What has changed to make the site favorable for an animal waste operation? What facts in the NRCS Study are not applicable?

Herd size to 2000 cows and Offsite Herd Management. What specific criteria will be used to increase herd size? DEIS says it will be at HDF discretion. At full production of 2000 cows, how many offsite animals will there be? In section 3.8.4 of the DEIS, there is a suggested range from 900-2000 cows, which means that the animals will need between 450 and 1000 acres for grazing, assuming a grazing density of 2-4 animals per acre. Please describe the acreage available at Makoa Ranch and Omao Ranch. The County shows Omao Ranch at 249 acres. I was unable to ascertain the size of Makoa Ranch. What evaluation is being done to assess the carrying capacity of these ranches with respect to adding 2000 additional animals? Are these ranches near drinking water wells and residential areas? Are neighbors aware that there will be a significant increase in grazing animals?

Economic impact to the visitor industry and local community. The DEIS fails to assess the reputational risk to the Poipu/Koloa visitor industry. The modest revenues from HDF to the County and State of Hawaii pale in comparison to the risk to local businesses whose success depends on the visitor industry. The economic analysis fails to address the impact on property values and small business incomes. There



is a considerable body of evidence that animal feeding operations affect the economic viability and property values in the neighboring community. Why does this evidence not apply to HDF? Just saying that there will be "no impact" is not a thoughtful analysis. The analysis should show a range of possible outcomes based on the experience of other communities who have had intensive farming operations enter their communities. In addition, there should be a discussion of the reputational risk to the industry on sites such as TripAdvisor, Yelp, etc.

HDF has chosen a location that is unable to support its intensive rotational farm model without creating significant adverse impacts to the environment, injuring the successful and vibrant economic base, and hurting the well-established local residential and visitor community of Poipu/Koloa. I urge HDF to find another location to try its experiment.

Thank you for answering my questions.

Cornelia Boyle
P.O. Box 1300
Koloa, HI 96756
corneliaboyle@gmail.com

January 3, 2017

Cornelia Boyle
P.O. Box 1300
Kōloa, Hawai'i 96756

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Cornelia Boyle:

Thank you for your letter dated July 21, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Alternatives

We appreciate the information you provide regarding alternative locations for the pasture-based dairy. Final EIS Section 6.5 Alternative Location provides elaboration on the very extensive process undertaken to identify the site.

The Hawai'i Dairy Farms project emerged from a group of partners and affiliates, including Grove Farm, Finistere Ventures, Kamehameha Schools, Maui Land & Pineapple and Ulupono Initiative. The group conducted grass trials statewide to determine the best site for a rotational-grazing pasture based dairy. In addition to the grass trials, HDF coordinated with landowners of agriculturally-zoned lands in the State, as well as the Department of Agriculture, the Agribusiness Development Corporation, and the Trust for Public Land. The broader team identified, toured and evaluated six parcels of sufficient size: two on O'ahu; two on Hawai'i Island; and two on Kaua'i. Kaua'i was found to be the optimal location, as it met all the operational requirements for pasture-based dairy:

- Relatively flat, contiguous acres to move cows with minimal stress.
- Soils suitable to efficiently utilize applied nutrients for growth of forage,
- Adequate water for irrigation and operations.
- Suitable climate conditions for animals and grass growth,
- Agricultural-zoned land available for 20 years or more of sufficient acreage to support an economically viable dairy, preferably IAL, and
- Access to required operational support elements (trucking, pasteurization, work force, etc.).

In response to comments on the Draft EIS, Ulupono Initiative again searched for agriculturally-zoned land with potential long-term availability that may have become available in the past few years. An additional 1,300 acres of Grove Farm property on Kaua'i in the Māhā'ulepū area were recently vacated by Pioneer Seed Company. These fields are closer to resorts and residences, and do not provide further benefit to the project or community than the HDF site evaluated in this EIS. Alexander & Baldwin announced in January 2016 that Maui lands in sugarcane will be transitioned to diversified agriculture in the future.

However, water rights and access for diversified agriculture must be settled through a forthcoming process, and water availability is currently unknown. Thus Uluono Initiative, which conducted the research, is unaware of any new property meeting the requirements for a pasture-based dairy that has become available since its initial evaluation.

Milk Products Processing Alternative

While it may be ideal for Hawai'i Dairy Farms to have an on-island milk-processing partner, it is logistically, financially and technically difficult to start such a business in conjunction with developing the first pasture-based dairy farm in the State. The most feasible and sustainable plan is to process HDF's milk with an existing provider on O'ahu or Hawai'i Island. In the future, on-island processing may be a more feasible option. For more information on the purpose and need for the project, see Final EIS Section 2.0.

Soils

Application of manure provides organic matter that will dramatically improve soil health and allow nutrients from manure to be accessible to grow the grass crop. Traditionally, soil has been the largest area of storage for carbon on earth. However, human disruption of the carbon cycle throughout periods of modern industrialization has released excess carbon into the atmosphere and into the oceans, resulting in a lack of stable carbon that was previously stored in soils. Photosynthesis is the greatest catalyst of transferring carbon from the air into soil. Once in soils, carbon feeds soil microbes that assist plants in acquiring nutrients and create stable forms of soil carbon. Microbes such as mycorrhiza effectively transport a variety of needed nutrients effectively into plants, including nitrogen and phosphorus.

The State of Hawai'i Department of Health (DOH) Clean Water Branch (CWB) conducted a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Po'ipū/Kōloa watershed. DOH CWB expressed concern in the survey results that the number of injection wells and cesspools in the Po'ipū/Kōloa watershed are impacting the waters of the Waiopili Ditch. This is largely from the different geological and hydrological composition of the watersheds. Groundwater in the highly urbanized Po'ipū/Kōloa watershed is calculated to move an average of 10 feet per day. The groundwater in the Māhā'ulepū sub-watershed has a calculated velocity on the order of 1.2 feet per day. The Sanitary Survey identifies the Kōloa karst topography and lava tube system that straddles the Po'ipū/Kōloa watershed and the Māhā'ulepū sub-watershed as a possible subterranean transport of injection well and cesspool effluent to the Waiopili Ditch.

Soils in the Māhā'ulepū sub-watershed are formed by the poorly permeable alluvium that covers the valley floor. Alluvium is highly weathered lava that forms silty clay layer, which is described as "poorly drained". The classification of soils as poorly drained indicates a relatively slow rate water movement within soil and to surrounding areas. Poorly drained is not an indication of low or poor infiltration. Infiltration refers to the ability of water to enter the soil surface, whereas "drainage" refers to the movement of water within or from the soil profile. This slow movement allows for attenuation (reduction) of bacteria, pathogens, and nutrients from manure.

Section 4.3 of the EIS characterizes soil conditions, and anticipated impacts from effluent and supplemental nutrient application. Herd Size and Management

The herd size for HDF is consistently represented as the potential maximum number of cows guided by the results of the nutrient analysis which reflects the carrying capacity of the land (EISPN Section 2.3 *Proposed Action*; EIS Section 1.2 *Proposed Project*). The distinction between the herd sizes and permit differences is explained in the EIS Section 2.4 *Planned Dairy Development on Māhā'ulepū Agricultural Lands*. During the public scoping meeting, participants expressed an interest to understand impacts of the committed herd size (up to 699 mature dairy cows). HDF agreed to analyze and present impacts at both the committed and contemplated (up to 2,000 mature dairy cows) herd size. Therefore, the probable impacts of the potential contemplated herd size are also analyzed and clearly identified in the Draft and Final EIS.

HDF is committed to establishing a herd of up to 699 mature dairy cows to demonstrate the pasture-based system as an economically and environmentally sustainable model for Hawai'i. Precision agricultural technology that monitors cows' health, grass productivity, and effluent management will be used to ensure environmental health and safety, as well as best management practices, and help determine the ultimate carrying capacity of the land.

With proven success at a herd size of 699, HDF will contemplate the possibility of expanding the herd in the future.

For dairy operations with 700 or more mature dairy cows, regardless if the operation is feedlot or pasture-based, additional regulatory review and permitting by the State Department of Health would be required. The application process for a National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) permit includes public notification and input. At the discretion of HDF, management may choose to submit an application to expand operations up to the carrying capacity of the land, which is estimated to be up to 2,000 productive milking dairy cows. Permit process compliance would be followed at such time HDF may decide to pursue an expanded operation.

All impacts described in the EIS are for both the committed and contemplated herd sizes, as noted in the preceding response to issue 2. Chapter 4, Sections 4.15 through Table 4.27-1, identifies qualitative and quantitative impacts from the two different herd sizes. Sections 4.1 – 4.14 present resource conditions and probable impacts that will not differ between the herd sizes. Impacts that may change with dairy operations at different herd sizes begin with Section 4.15, Demographic and Economic Conditions. Probable impacts and mitigation from the committed herd size of up to 699 mature dairy cows are presented in Sections 4.15 through 4.20. Probable impacts and mitigation for the contemplated expansion of the herd potentially up to 2,000 mature dairy cows are presented in Sections 4.21 through 4.26. A side-by-side comparison of the varying impacts is contained in Table 4.27-1.

Management of the calves and dry cows is discussed in EIS Sections 3.7 *Offsite Herd Management by Kaua'i Ranchers* and Section 3.8 *Contemplated Herd Size*. Section 4.26.2 *Potential Secondary Effects* notes that HDF will provide a source of calves for the local ranching industry, possibly allowing ranches to replace their existing cow-calf operations and instead procure live calves. Each ranch will determine its capacity based on business and operational goals.

Economics

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAJ>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 22, 2016

Subject: Comments on Draft Environmental Impact Statement – Hawaii Dairy Farm

Aloha,

I am a long term Kauai resident and am employed at the Grand Hyatt Kauai. I am gravely concerned about the proposed Dairy Farm in Mahaulepu Valley.

As the Director of Sales and Marketing with over 30 years of hospitality experience, I am certain that our business will cease to exist as we know it today. In interviews conducted in 2015, 46% of our guests indicated they may not return if there is a dairy. Based on my history with negotiating high end groups, I also know that if there is ANY chance of odor or flies, groups will simply not select our resort, there are many choices in the islands and they will not take that risk.

Below are a few of my primary concerns.

- From a simple Risk/Reward viewpoint, the dairy is creating 5 direct jobs and 6 indirect jobs. The dairy puts at risk the thousands of jobs of those employed in the Koloa/Poipu area. The dairy will produce \$60,000 in tax revenues for the State and \$51,000 in revenues for the County and will put at risk the livelihood and property values of residences and businesses in Koloa/Poipu which currently generate over \$28,000,000 in property taxes alone, not to mention reduced GET, TAT, employment and income taxes.
- Section 4-4 (p.96) of the Draft EIS, table 4.1-1 is a chart of monthly rainfall data for the area dated from 1904-1983. Making a statement on the average rainfall in the area using data ending more than 33 years ago seems wrong and brings into question why they would use such data. It certainly doesn't include the 30 days and 30 nights of rain in March 2006.
- We don't want to be a test center; the Dairy plan is very experimental with no other successful examples cited in the world of a rotational grazing operation in a tropical climate with the number of cows planned. Much less one less than two miles upstream from the ocean.
- The Draft EIS states that due to Kauai's rural nature, most homes are within one mile of some agricultural activity, which may be true, but not within one mile of an industrial animal operation. Most cattle ranging currently are in much lower densities. We have seen the problems caused and remember the smell from the Anahola dairy.
- It is just difficult to believe that "The dairy will not adversely affect residents, recreational activities, guests at nearby resorts, or diminish property sales or values in the area." And that "no noticeable odors, flies, discharge or waste will reach resort or residential areas". Many other experts have done analyses that indicate otherwise.
- The projected odor detection map figure 4.19-1 indicates that in a worst case scenario the odor will travel no more than 1 mile yet experts, other than those hired by HDF for the Draft EIS, have determined that it has the potential to travel across virtually all of Koloa/Poipu.

We have nearly 1000 employees here at the Grand Hyatt, many that do not have the ability or wherewithal to send a letter. I was stopped in the hallway by a concerned housekeeper that collected over 200 signatures opposing the dairy. She wanted their voice to be heard. On behalf of all of them, I urge you to please scrutinize this plan very carefully.

Sincerely,

Katy S. Britzmann, Director of Sales & Marketing
Grand Hyatt Kauai Resort & Spa

CC:
Laura McIntyre
Environmental Planning Office
Hawaii State Department of Health
1250 Punchbowl Street
Honolulu, HI 96813
Laura.McIntyre@doh.hawaii.gov
Or DOH.EPO@doh.hawaii.gov

Jeff Overton
Principal Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii, 96813
HDF@group70int.com

Amy Hennessey
Hawaii Dairy Farms, LLC
PO Box 1690
Koloa, HI 96756
info@hawaiidairyfarms.com

We, the undersigned are in opposition to the dairy farm. We fear that our jobs will be in jeopardy. We in unity with the best of agreement, say "we don't want it here."

Bradley Alford
Eugene Brown
Yvonne Dabigcon

John Davis

Michelle Klein
Kurt Klein
Theresa Hare

A'DIE Amy SMITH

2 Jumbaga
Jumbaga

Thomas Parbay Jr.
Storley Mckenry J.

Neelon Linn

Edgar King

Sean Thomas
Manda Rita

Walter Miller
Luis Casal

Jagan
J. Dagnino
William Mead
Miguel Schojda

Samuel Alatorre
[Signature]

[Signature]
Luis C. [Signature]
Cecilia Buena Vista
[Signature]

[Signature]

[Signature]
John Jones
Julian Lopez

[Signature]
[Signature]
Cynthia Ponce
[Signature]
[Signature]

Cheryl Pardo
M. Albano
Cecilia [Signature]

M. White
[Signature]
Susan Muller

[Signature]

Diana Kumbulwa
Vicki Wong

[Signature]
Ken J. [Signature]

[Signature]
M. Caplan
Bob [Signature]

[Signature]
Joe [Signature]

Chad Lewis

Amber Lewis
James Lewis
Emily Weinstein

[Signature]
C. Pardo

L. Duarte

J. Duarte

R. Yamase

K. Yamase



January 3, 2017

Katy S. Britzmann
Director of Sales & Marketing
Grand Hyatt Kauai Resort & Spa
1571 Poipu Rd
Kōloa, Hawai'i 96756

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Katy S. Britzmann:

Thank you for your letter dated July 22, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. We acknowledge receipt of your petition sheets with 206 signatures attached. The following responses are offered to your comments:

Economics

We acknowledge the economic concerns you raised as the resort sales and marketing director, and those shared by the employees who signed your petition. Several decades ago, the resort complex was built into this sensitive coastline which fronts a large agricultural region, and surrounded by natural watershed area. Inputs to the environment today are both natural and man-made from the resort and farms, including airborne dust, vehicle and maintenance equipment exhaust fumes, hardscape and parking lot runoff, soils erosion, landscape and golf course fertilizers and chemicals, human waste treatment and disposal, equipment noise, horse manure at the beach and horse ranch odors, feral birds, animals and pest insects. Acknowledging these existing environmental effects, these factors have not diminished the ongoing success of this resort. With the upcoming addition of a properly managed dairy operation on designated Important Agricultural Land two miles away in the upper reaches of Māhā'ulepū valley, the Final EIS studies show there will be no adverse effects to the resort and the surrounding resort community.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP
Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
RIBA, AIB

Craig Tokahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

[Handwritten signatures and names in blue ink on lined paper:]
C. Kent Oda
Abe Kubanawa
Daisha Kubanawa
Ashley Kubanawa
Rashad Kubanawa
Daedraan Kubanawa
Cristofal Alvarado
Lyne Lewis
Jenson Alvarez
Doreen Alvarez
Linda Miki
HONG GUY
Emanuel City
Christina Nishimoto
Norman Y. Hong
Tom Young
Paul T. Matsuda
Mi Ry Kim
Craig Tokahata
Ralph E. Portmore
Hiroshi Hida
Kaeo Ueda

Rainfall

Two official sources of rainfall were used to characterize conditions at the HDF site. Table 4.1-1 in the EIS shows average monthly rainfall data for a period of nearly 70 years, at a weather station sited at 100 feet elevation monitored by McBryde Sugar from the early sugar plantation years until the station was discontinued in 1983 (Giambelluca et al., 2013). The rainfall data was used in the Rainfall Atlas of Hawai'i as monthly maps to allow analysis of year-to-year variations statewide over the period between 1920 and 2007 (Frasier 2012 in Giambelluca et al., 2013). The second rainfall data station at the HDF site is Māhā'ulepū 941.1 station, sited at 80 feet elevation and monitored from 1905 to present by Grove Farm. Data from this station is reported to the NOAA National Climatic Data Center, and was used to calculate sizing of the effluent ponds using rainfall data for the most recent 30-year period, from January 1984 through December 2013, when planning for HDF began.

Pastoral Rotational Grazing Dairy Examples

Successful pastoral dairies exist at numerous locations in New Zealand, as well as suitable farming regions in the United States. Several rotational grazing dairy operations located in Florida and Georgia operate successfully, with farms containing over 2,000 animals. Successful rotational grazing dairies also exist in Maryland and North Carolina, along with Missouri. Numerous articles and publications on rotational grazing dairies are cited in Progressive Dairyman and other industry news sources.

Odor and Pest Insects

Unlike a traditional confinement dairy facility that must collect and store all manure produces until future disposal, the majority of manure from a pastoral-grazing operation will be deposited directly on the pasture where it will break down and be incorporated into the soil within a one- to three-day period. Manure collected from the milking parlor – totaling that of two hours per day per cow - will be washed into a settling pond for re-use on the pastures. Manure is cycled through the ponds on a regular basis guided by irrigation needs; over a maximum of 45 days, all effluent from the ponds is completely utilized and replaced.

Without a dairy in operation, computer-generated modeling was used to determine the potential impact. Results for the committed herd size of 699 mature dairy cows using typical effluent irrigation conditions show that odors may be detectable by 50 percent of the sensitive population once per 200 hours, or just 44 hours per year, within one-quarter of a mile south of the dairy farm boundary. For wet periods, odor could extend approximately 2.151 feet (less than one-half of a mile) beyond the southern boundary. The closest public use areas beyond the odor extent south of HDF are a stable and golf course, both approximately 0.5 miles further south, and the closest residential and resort units are 1.3 miles beyond the possible odor extent (EIS Figure 4.19-1).

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location – paddocks south of the taro farm – the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas. The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaua'i and those species already in Māhā'ulepū Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Dairy Flies/ flying waste particles/NO GOOD

kyle brockett <kylebrockett@hotmail.com>

Sun 6/12/2016 8:44 PM

To:HDF <hdf@group70int.com>;

Every place in the world with cow poop has flies. Including biting flies. Why would you risk the health of Poipu for this. Flying dust particles with a wind headed right for a resort is obviously going to happen.

For what benefit???

A rich man's profit.....

You will create 11 jobs.. WOW

You will reduce the price of milk almost nothing. WOW

No need to risk it....

Thanks, Kyle Brockett

Sent from Windows Mail

"fair,independent" EIS performed by the company hired to do the work??????

Kyle Brockett <brockett6@gmail.com>

Thu 6/16/2016 1:39 PM

To:HDF <hdf@group70int.com>;

C:ginny.pressler@doh.hawaii.gov <ginny.pressler@doh.hawaii.gov>;

Group 70. Your websites states you are an architectural firm.

1) How many dairies have you done environmental impact statements for?

2) Did you review all the groundwater issues in New Zealand and across America these practices have had on the groundwater?

3) The dairies own website states the flies will be treated with chemicals to control them. Will these chemicals seep into the ground?

4) What is the plan for keeping the dried excrement particles from blowing in the 30-40 mph winds that are common in the area? (Did you research the harmful effects of these particles and the kids who have become sick from these particles)

5) Would it not be "fair practice" to use a 3rd party company who has not been paid by the dairy to perform a fair and independent eis?

I am very concerned the architectural company hired to develop this dairy is the same one who is performing a "fair" EIS.

Makes no sense at all to 99% of everyone... Very disappointed an independent group was not used. This seems unfair. Keith

EIS/questions

Kyle Brockett <brockett6@gmail.com>

Fri 6/17/2016 2:28 PM

To: HDF <hdf@group70int.com>;
C: gimny.pressler@doh.hawaii.gov <gimny.pressler@doh.hawaii.gov>;

Group 70, Your EIS mentions nothing about the polluted streams that have been continually tested the past 2 years by the Surfrider foundation and have been chronically polluted.

Why no mention of these polluted streams?

Why has the DOH said that posting the streams as polluted look like you were favoring one party over another?

Do you consider the Surfrider foundations tests to be untrue or the Surfrider not a valid group?

DEIS VOL 2 page 19 says you have not explored where the dry ditches run off to...

Why not?

Where do your run off ditches lead?

There is not mention about the fly population or dust particles.

Why not? How will the flies be contained from spreading to residential areas?

Please respond... The rivers are polluted and you want to add more pollution, more stink and more and more manure containing antibiotics to our environment.

Why?

Industrial dairy/Mahalepu Valley/Stream polluted

kyle brockett <kylebrockett@hotmail.com>

Fri 6/17/2016 2:59 PM

To: info@surfrider.com <info@surfrider.com>;
C: HDF <hdf@group70int.com>; gimny.pressler@doh.hawaii.gov <gimny.pressler@doh.hawaii.gov>; replekawkakima@capitol.hawaii.gov <replekawkakima@capitol.hawaii.gov>; replekiokaka@capitol.hawaii.gov <replekiokaka@capitol.hawaii.gov>;

To whom it may concern,

As you should know from your own testing the stream running through the Mahalepu valley is 28000 times over federal standards for pollution. The DOH in Hawaii has not posted warning signs because "it would show favoritism" in the lawsuit the Hyatt is currently in against the dairy.

My friends have been sick from this stream, people have gotten ear infections from the stream and every time it has been tested it has been off the charts polluted. Not a little polluted but off the charts. The water is literally brown.

The Hawaii Dairy farms hired Group 70 international to do their work. They are an architectural firm. So who do you think they hired to do a fair Environmental impact statement. Yes Group 70 international... Not a 3rd party group but the group they have already paid to develop the dairy.

Does that seem fair ?

Their draft EIS has changed tune from their initial "ZERO DISCHARGE" claim they originally made. Now they admit there will be discharge in an already polluted area that is off the charts polluted. Page 19 Vol. 2 of their EIS even claims they have no idea where there drainage ditches go and have "not been explored" ..

- 1) Why have you not filed a lawsuit to clean up this chronically polluted river flowing into the ocean?
- 2) Doesn't a river 28000 times over federal standards in pollution deserve warning signs?
- 3) Your testes on your website show the pollution levels so why not do anything about it?
- 4) This dairy will have discharge as noted in their own EIS prepared by their own company. Why are you not doing anything about this?
- 5) At what point do you try to protect the ocean, reef and people of the surrounding area ?

I was one of your very first members. I have supported you guys for years. Now it is time to stand up to these billionaires and protect this beautiful place that has been destroyed and needs to be fixed before it gets further destroyed.

Please respond and let me know what you intend to do. If you do nothing when on your own website this is the most polluted stream in Hawaii it will be very disappointing and I will stop supporting you.

Thanks, Kyle Brockett.

initiated a series of investigations into water quality issues. The Sanitary Survey findings resulted in an expression of concern by DOH CWB that the number of injection wells and cesspools in the adjacent Waikomo watershed, which includes Kōloa and Po'ipū, are impacting the waters of the Waioipili Ditch.

The geological and hydrological composition of the highly urbanized Po'ipū/Kōloa watershed differs from Māhā'ulepū sub-watershed, resulting in different rates of groundwater movement. Groundwater velocity under the proposed HDF site is on the order of 1.2 feet per day, while the groundwater under the Po'ipū-Kōloa watershed area averages 10 feet per day. The faster movement of groundwater reduces the attenuation period of bacteria, viruses, and nutrients that occurs with movement through soils.

The Part 1 Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors to the fecal indicator bacteria (FIB) levels in ditches running through Māhā'ulepū Valley. CWB noted that Waioipili Ditch is a man-made drainage ditch on private property, and is not an inviting recreational body of water utilized by people. Further testing is needed to more clearly identify whether the source(s) of FIB is human or animals, and DOH CWB has partnered with a University of California laboratory to more definitively determine the source of the fecal contamination in Waioipili Ditch. Results will be published as Part 2 of the Waioipili Ditch Sanitary Survey. The Waioipili Ditch Sanitary Survey, Kauai Part 1 can be accessed on the DOH Clean Water Branch website under "Library" (<http://health.hawaii.gov/cwb>).

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainageway (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass; keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Waioipili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waioipili Ditch will be improved by active management of the dairy site.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaua'i and those species already in Māhā'ulepū Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

As stated in EIS Section 3.0, HDF will not treat cows with bovine growth hormone, referred to as rBST or rBGH.

Roughly 90 percent of goods used in the state, including daily food requirements of residents and visitors, arrive in Hawai'i via ocean and air shipping. The recent announcement by Hawai'i Governor Ige at the 2016 World Conservation Congress in Honolulu, to double local food production in the state by 2030, reflects yet another initiative to advance agricultural self-sufficiency within the State. HDF's objectives to produce more than 1 million gallons of milk annually for local consumption through growing more than 70 percent of the herd's feedstock within the HDF site will play a large role in the food sustainability movement in Hawai'i.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Dairy farm

Sonja Brockett <sonjabrockett@gmail.com>

Sat 6/11/2016 7:19 AM

To: HDF <hdf@group70int.com>;

Where do I vote NO!!!!!!!!!!!!!! Sonja Brockett.... 621 KAHALA

Sent from my iPad



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Sonja Brockett
sonjabrockett@gmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā‘ūlepū, Kōloa District, Kaua‘i, Hawai‘i
Response to Comment on Draft EIS

Dear Sonja Brockett:

Thank you for your email dated June 11, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawaii's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawaii's dairy industry.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OECKKAUAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read "Jeffrey H. Overton".

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Dairy at Maha'ulepu

Edna Bronzino <alohasweetpea80@gmail.com>

Sun 7/24/2016 8:31 PM

To: doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; Keith.kawaoka@doh.hi.gov <Keith.kawaoka@doh.hi.gov>; info@hawaiidairyfarms.com <info@hawaiidairyfarms.com>; HDF <hdf@group70nt.com>; Friends of Maha'ulepu <friendsofmahaulepu@hawaiiantel.net>; gary@garyhooser.com <gary@garyhooser.com>;

I am extremely concerned and fearful of the dairy coming to Maha'ulepu for many reasons. The dairy cows will produce 143lbs of wet manure per cow per day and this will produce biting flies, offensive odors, negative air quality. Since this dairy site is within 750 ft of two of three large county wells which will be negatively effect our drinking water , example: Kewaunee, Wisconsin dairy waste has destroyed their potable water leaving them with more polluted water than many third world countries. My family including my grandchildren love to hike ,swim and embrace the magical sacred beauty of Maha'ulepu. Most people who visit Maha'ulepu have the same feeling. It would be a disgrace to destroy it.Kauai is a small amazingly beautiful island whd's environment,health of all living things and economics will be negatively effected by this dairy. Clearly this site is not well suited for a large dairy. Please do not allow this disaster to happen. Whatever happened to the statement that "Ulupono won't do anything that isn't environmentally sound". Mahalo.

Sincerely, Edna Bronzino

Dairy at Maha'ulepu

Edna Bronzino <alohasweetpea80@gmail.com>

Sun 7/24/2016 7:05 PM

To: doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; Keith.kawaoka@doh.hi.gov <Keith.kawaoka@doh.hi.gov>; info@hawaiidairyfarms.com <info@hawaiidairyfarms.com>; HDF <hdf@group70nt.com>;

My grandchildren Olivia age 10 and Drew age 7 wanted to write this letter.They said if the dairy comes to Maha'ulepu they won't be able to hike there because it will smell horrible and "the ocean won't be safe to swim in and it will hurt the sea turtles and the (endangered) monk seals." Drew said "the whole island will be destroyed because people won't want to come here- maybe we will have to move". Olivia shared " it will only be good for the dairy people - hotels will lose business and shops will lose business because no one will want to visit Kauai". Please don't let the dairy farm destroy our home-Kauai". Mahalo

Sincerely,

Olivia Blackmer age 10 and Drew Blackmer age 7

Kalaheo,HI

Sent from my iPhone

Sent from my iPhone



Edna Bronzino
January 3, 2017
Page 2 of 2

January 3, 2017

Edna Bronzino
alohaSweetpea80@gmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Edna Bronzino:

Thank you for your email received July 24, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 Hydrology and 4.17 Surface Water Resources & Nearshore Marine Environment and Appendices E and F contain further information on the analyses.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 Geology of Māhā'ulepū and Vicinity displays the volcanic geological history of the area.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

PRINCIPALS

Francis S. Oda, Arch.D.
FAA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucicola
AICP, LEED AP

James L. Stone, Arch.D.
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Higb
AIA

Proposed Dairy Farm at Mahaulepu

Kathy <katmo@sbcglobal.net>

Sun 7/24/2016 7:14 PM

To: jfm@hawaiidairyfarms.com <jfm@hawaiidairyfarms.com>; HDF <hdf@group70int.com>; doh_epo@doh.hawaii.gov <doh_epo@doh.hawaii.gov>; friendsofmahaulepu@hawaiiantel.net <friendsofmahaulepu@hawaiiantel.net>;

Greed is trumping common sense. It doesn't take a rocket scientist to figure out the various ways a Dairy Farm will cause destruction to Mahaulepu and the surrounding areas. Just for giggles, I'd like to know, where do the corporate decision makers live and where do they vacation?

We have been regular visitors to the south side of Kauai from California for 15 years. We're hoping to hear someone is awake at the controls, and stops this terrible irreversible mistake.

Bob and Kathy Brouchoud
Palo Alto, CA

Sent from my iPhone



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Bob and Kathy Brouchoud
katmo@sbcglobal.net

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Bob and Kathy Brouchoud:

Thank you for your email received July 24, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

FW: Against the Industrial Dairy Proposed for Māhā'ulepū

From: Deborah Burnham <aquacranial@gmail.com>

Date: July 24, 2016 at 11:48:59 AM HST

To: keith.kawaoka@doh.hawaii.gov

Subject: Against the Industrial Dairy Proposed for Māhā'ulepū

Aloha Dr. Kawaoka,

This is to make clear my position against the industrial dairy proposed for Māhā'ulepū. My main objection is the clear threat to the water supply for Po'ipu and Koloa considering that the aquifer supplying the wells for this area has no protection from the cows' waste, which they will produce in huge quantities. I have become aware that water pollution is now an expensive problem in New Zealand after use of a less dense version of the proposed model for industrial grazing on Kauai.

I ask you to do your part to protect Kauai from the economic and health impact of this industrial dairy project.

Māhelo.

Living peace,

Deborah Burnham, PT
Integral Health Consultant

Headache and Neck Pain Solutions

808-651-4534

aquacranial@gmail.com

meditationhawaii.org

brahmakumaris.org

<http://livingvalues.net>

"Love is, without a doubt, the basis of everything."

Dr. Eben Alexander

"There is no nourishment like happiness."

ShivBaba

[Introducing Brahma Kumaris video](#)

[Tai Chi for Arthritis Introduction and Thirty Minute Beginner Class](#)



GROUP 70
INTERNATIONAL

PRINCIPALS

Francis S. Oda, Arch.D.,
FAA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Rucolla
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matusuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Deborah Burnham
aquacranial@gmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawaii
Response to Comment on Draft EIS

Dear Deborah Burnham:

Thank you for your email received July 24, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Water is essential for life. Hawaii must become as efficient as possible in its use of limited fresh water supplies due to the need for fresh water for increasing resident and visitor populations. More than 9 percent of the State's drinking water comes for groundwater sources, while much of the water used for agriculture irrigation comes from surface water sources.

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipu area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 Geology of Māhā'ulepū and Vicinity displays the volcanic geological history of the area.

Deborah Burnham
January 3, 2017
Page 2 of 2

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhāʻulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

HDF will be the first dairy in Hawai'i to employ rotational-grazing, which utilizes manure as a valuable resource. This is a fundamental difference and advantage over conventional feedlot dairy operations, which typically have insufficient land to recycle the nutrients for uptake by forage plants and instead rely on imported feed and large storage lagoons to hold manure. The rotational-grazing method is cost-effective as it reduces the need to import fertilizer and feed, and minimizes potential impacts to the environment by using 100 percent of the manure as nutrients to grow the majority of the forage for the herd. Benefits of pasture grazing include, but are not limited to, improved soil health, and increased animal health and productivity. The dairy will feature modern facilities and practices that will comply with all applicable Federal and State environmental standards.

Successful pastoral dairies exist at numerous locations in New Zealand, as well as suitable farming regions in the United States. Several rotational grazing dairy operations located in Florida and Georgia operate successfully, with farms containing over 2,000 animals. Successful rotational grazing dairies also exist in Maryland, North Carolina, and Missouri. Numerous articles and publications on rotational grazing dairies are cited in Progressive Dairyman and other industry news sources.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAJ>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

To Whom It May Concern:

I am writing to you as a resident of Kauai to express my support of Hawaii Dairy Farms' draft Environmental Impact Statement (DEIS). The DEIS has found that Hawaii Dairy Farms will be beneficial to the economy, agricultural industry, land and community.

I am a small business owner and active member of the local business community, and I am well aware of how difficult it is to make a living on Kauai. The key to strengthening our economy is to diversify viable industries, such as agriculture, and reduce our dependence on imports. Hawaii Dairy Farms addresses both of these as it will revitalize the dairy industry and its pasture-based farm greatly reduces reliance on importing feed for their cows. The DEIS states that once in operation, Hawaii Dairy Farms will boost the local economy by creating \$6 million to \$9 million in annual operating expenditures providing net revenues to County and State governments.

I am also a father and grandfather. It is important to me that Kauai provides more locally produced food for my children and grandchildren and all of our residents so that we can be more sustainable and food secure should our import schedule be disrupted for any reason. Local milk will also be much fresher and healthier than the milk imported from California that is available in our grocery stores today.

I was pleased to read in the DEIS that Hawaii Dairy Farms will take good care of the environment by protecting water resources, minimizing flies, and improving soil quality. In addition, odor from the farm will not affect visitors or residents and home values will not be negatively impacted.

Hawaii Dairy Farms has been very forthcoming in the information that they have shared with the community. Their gesture to undergo a voluntary EIS shows that they are willing to be transparent and do their best for the environment and community. Hawaii Dairy Farms DEIS has my full support. Thank you for your consideration.

Sincerely,
Lesther Calipjo
Garden Isle Collision Repair, LLC
dba Kauai Foreign Cars
1890 Leleiona Street
Lihue, HI 96766

FW: Hawaii Dairy Farm on Kauai

From: George C. [mailto:gmc545@yahoo.com]
Sent: Monday, July 25, 2016 12:28 PM
To: Ron Kouchi <senkouchi@capitol.hawaii.gov>; Bernard Carvalho <mayor@kauai.gov>; Wong, Alec Y <alec.wong@doh.hawaii.gov>; Dee Morikawa <repmorikawa@capitol.hawaii.gov>; Asuka, Brandon T <Brandon.T.Asuka@hawaii.gov>; Gardner, Carrice N <Carrice.Gardner@hawaii.gov>; David Y. Ige <dige@governor.hawaii.gov>; Pressler, Virginia Ginny, M.D. <Ginny.Pressler@doh.hawaii.gov>; Oshiro, Peter S. <peter.oshiro@doh.hawaii.gov>; Pruder, Sina L <sina.pruder@doh.hawaii.gov>; McIntyre, Laura <Laura.McIntyre@doh.hawaii.gov>
Subject: Hawaii Dairy Farm on Kauai

Dear Senator Kouchi,

I strongly urge you to do everything in your power to preserve Kauai's south shore by rejecting the proposed factory farm in Mahaulepū.

If this operation goes forward, we will see the ruination of south shore beaches and marine life. The stench of cow urine and flies will drive visitors away; leading to the devastation of Kauai's economy, a loss of jobs, and a devaluation of real estate.

What possible gain can outweigh this? And for whom? Please consider the legacy of preserving what is best for the people and the Aina.

Mahalo for your attention.

Sincerely,

George Carrick,
Property Owner and Hawaii Income Tax Payer.



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

George Carrick
gmc545@yahoo.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear George Carrick:

Thank you for your email of July 24, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waipili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 *Nearshore Marine Waters*, and Appendix F.

George Carrick
January 3, 2017
Page 2 of 2

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kauai community, and will allow for evaluation of possible contamination sources.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

FW: Outrageous for HDF to submit multiple versions of their EIS

On Friday, June 24, 2016 4:34 PM, ANDREA CASSIDY <2berk2@sbcglobal.net> wrote:

As a taxpayer and landowner on Kauai, I am dismayed about the irresponsible submissions by HDF creating confusion and mistrust in the comment and review process. How is any person or organization supposed to have fair notice of a plan if there are different versions of the plan being submitted?

As public officials, you have a duty to make sure the process is fair and legal. This is a moving target which impairs the public's right to respond and any future decisions will be tainted.

Please require HDF to resubmit their draft EIS and restart the time for comments.

Andrea and Michael Cassidy
Kahala at Poipu Kai, unit 914



PRINCIPALS

Francis S. Ode, Arch.D.
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheri B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihai
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucicola
AICP, LEED AP

James L. Stone, Arch.D.
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hidb
AIA

January 3, 2017

Andrea and Michael Cassidy
2berk2@shgloabai.net

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Andrea and Michael Cassidy:

Thank you for your email of June 24, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

In preparation to develop the Draft EIS, HDF listened to public concerns, retained knowledgeable consultants to conduct technical analyses, refined data gathered from field trials on site, and further incorporated U.S. standards and best management practices to create a world-class design for the environmentally sound pasture-based, rotational-grazing dairy. These technical studies and ground-level trials provided additional field-tested data to refine the Waste Management Plan (WMP). It is common practice to periodically update a WMP as site conditions change or are better known to ensure the regulators are reviewing the most current information. HDF prepared a summary of the changes for the Wastewater Branch to highlight the refinements. On July 13, 2016, DOW Wastewater Branch acknowledged that its questions on the updates to the WMP had been addressed by HDF, and that WWP had no further comments at that time. The WMP is not a component of the EIS, however, all relevant information in the updated WMP was incorporated into the DEIS to ensure consistency and transparency for public review and disclosure.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Fear of Proposed Dairy at Mahaulepu

Kat Clark <katillac765@hotmail.com>

Mon 7/19/2016 10:02 PM

To: HDF <hdf@group70int.com>;

To Whom It May Concern,

My concerns for the proposed dairy at Mahaulepu run deep. As a resident of the South Shore, a mother to four small children and a Kauai county citizen, I feel that I must express my thoughts and fears for what will happen if Hawaii Dairy Farms (HDF) is allowed to move forward with their poorly planned, industrial dairy.

As you and I know, Mahaulepu is one of the more pristine and "untouched" portions of the island of Kauai. It is a prized local and tourist destination that provides scenic beaches, surfing, hiking, fishing and recreation. It is home to rare and endangered species who rely on the beautiful natural habitat to thrive. These habitats and activities will be severely threatened by the proposed dairy.

Each month the Surfrider Foundation samples the streams and waters around Kauai. They test for bacterial levels and provide this as public information. For many months, the Waiopiil Stream and Gillin's beach at Mahaulepu have been extremely polluted with off the charts bacterial counts caused by fecal waste. Concerned residents of Kauai attempted to legally post warning signs on state land informing the public of the toxic and dangerous levels of bacteria present in the waters of Mahaulepu. Less than 5 hours after posting warning signs, they were removed by unknown persons. Now HDF wants to bring in more feces that will sky rocket bacterial counts of Mahaulepu's already polluted waters.

The proposed dairy provides extremely poor and unproven logistics for waste management. The proposal made by HDF has changed multiple times. While that might be seen as a good thing, or proof that they are trying to better their plan, the truth is, there is still no proven plan in place to address the issues of waste. These issues are: clay soil incapable of absorbing large amounts of bovine waste, heavy rains that will flood affluent ponds and create mass run off, and toxic gases emitted by tons and tons manure.

The proposed dairy is a reckless experiment and money making operation. HDF and billionaire Pierre Omidyar are willing to threaten the South Shore and everyone in it to export milk to be sold for the same average 5\$ per gallon. They will use pesticides, insecticides, hormones and antibiotics. They will use GMO feed to fatten their cattle rather than the initial proposal of grass feeding. They will bring more than 2000 cows on to less than 600 acres of clay based soil at the top of a lush, sub tropical valley that runs off into protected reefs and oceans.

The amount of bovine waste, both fecal and urine, produced by one dairy cow each day is roughly 1.15 pounds. If you multiply that number by 2000 you come up with 230,000 pounds of fecal waste per day. This multiplied by 30 days equals 6,900,000 pounds of bovine waste per month. Where will that go? Where will it spill to once feeble affluent ponds are full or heavy rains come down unexpectedly and frequently? It will flow along the top of the dense clay, down through the already polluted streams of Mahaulepu valley, flooding our county drinking water wells and eventually emptying in to our beautiful oceans.

The argument may be made that Mahaulepu valley is designated as agricultural land and that a dairy fits in that category. While I do understand this argument, I believe it is flawed and irresponsible. I fully support local food production on Kauai and all of the islands of Hawaii. Sustainable agriculture is a key element to our future success. However, I also believe it is paramount that local food production must remain responsible and safe for the land, the people and the wild animals of the islands. When the threat to the local families, the tourism economy, and eco systems is so great that the effects cannot knowingly be measured or planned for, local government MUST err on the side of caution. Local government MUST act in the best interest of all of those who are under the potential threat of the recklessness, avariciousness and experimentation of HDF. Local government MUST protect and serve the very citizens who elected them to do so.

We can stop this disaster with your help. You can rise above the temptation to allow a very powerful billionaire business man to reek irreversible havoc on Kauai's South Shore. You can hear the people, heed their concerns, and use your elected power to demand that the health of the people, the land, the oceans and the island come before the money. You can save us. Please do.

Sincerely,
Kat Clark



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AIA, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Niheli
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucicola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matusuda
PE, LEED AP

Ma Ry Kim
IBBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Kat Clark
Katillac765@hotmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Kat Clark:

Thank you for your email of July 18, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Complaints from the public citing the high levels of enterococcus in Waioipili Ditch and public concerns about the proposed dairy prompted the Hawai'i State Department of Health (DOH) Clean Water Branch (CWB) to conduct a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Waikomo watersheds. DOH CWB conducted water sampling within the Waioipili Ditch and areas upstream, and initiated a series of investigations into water quality issues. The Sanitary Survey findings resulted in an expression of concern by DOH CWB that the number of injection wells and cesspools in the adjacent Waikomo watershed, which includes Kōloa and Po'ipū, are impacting the waters of the Waioipili Ditch.

The geological and hydrological composition of the highly urbanized Po'ipū/Kōloa watershed differs from Māhā'ulepū sub-watershed, resulting in different rates of groundwater movement. Groundwater velocity under the proposed HDF site is on the order of 1.2 feet per day, while the groundwater under the Po'ipū-Kōloa watershed area averages 10 feet per day. The faster movement of groundwater reduces the attenuation period of bacteria, viruses, and nutrients that occurs with movement through soils.

The Part 1 Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors to the fecal indicator bacteria (FIB) levels in ditches running through Māhā'ulepū Valley. CWB noted that Waioipili Ditch is a man-made drainage ditch on private property, and is not an inviting recreational body of water utilized by people. Further testing is needed to more clearly identify whether the source(s) of FIB is human or animals, and DOH CWB has partnered with a University of California laboratory to more definitively determine the source of the fecal contamination in Waioipili Ditch. Results will be published as Part 2 of the Waioipili Ditch Sanitary Survey. The Waioipili Ditch Sanitary Survey, Kauai Part 1 can be accessed on the DOH Clean Water Branch website under "Library" (<http://health.hawaii.gov/cwb>).

Kat Clark
January 3, 2017
Page 2 of 2

HDF will be the first dairy in Hawai'i to employ rotational-grazing, which utilizes manure as a valuable resource. This is a fundamental difference and advantage over conventional feedlot dairy operations, which typically have insufficient land to recycle the nutrients for uptake by forage plants and instead rely on imported feed and large storage lagoons to hold manure. The rotational-grazing method is cost-effective as it reduces the need to import fertilizer and feed, and minimizes potential impacts to the environment by using 100 percent of the manure as nutrients to grow the majority of the forage for the herd. Benefits of pasture grazing include, but are not limited to, improved soil health, and increased animal health and productivity. The dairy will feature modern facilities and practices that will comply with all applicable Federal and State environmental standards.

There has been no rainfall event that would exceed the capacity of the effluent ponds since rainfall has been recorded in Maha'ulepū Valley. The effluent pond capacity has been designed to exceed the regulatory requirement of containing the 25-year, 24-hour rainfall event. Under the committed herd size of 699 mature dairy cows, the ponds could hold an additional 45 percent volume; under the contemplated herd size of up to 2,000 mature dairy cows, the ponds could hold an additional 12 percent volume. An emergency containment berm has also been added to the design, providing additional capacity equivalent to 30 days of effluent for the potential contemplated herd size up to 2,000 mature dairy cows.

The planned improvements and operations at Hawai'i Dairy Farms are compatible with and supportive of State of Hawai'i and County of Kaua'i land use policies, plans and control related to the natural and social environment. The Proposed Project is consistent with and permitted by applicable land use designations and, as discussed in EIS Section 5.0, will contribute a wide range of benefits to further established goals, objectives and policies. In particular, Hawai'i Dairy Farms is consistent with the State and County initiatives for food sustainability and the long-term intended use of Important Agricultural Land on Kaua'i. The dairy is also consistent with the provisions of the State of Hawai'i Agricultural Functional Plan, and long-range planning for diversified agricultural use of Maha'ulepū lands under the County of Kaua'i General Plan and the South Kaua'i Community Development Plan.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 22, 2016

State of Hawai'i
ATT: Laura McIntyre
Department of Health
1250 Punchbowl Street
Honolulu, HI 96813

Group 70 International, Inc.
ATT: Jeff Overton
925 Bethel Street, 5th Floor
Honolulu, HI 96813

Hawai'i Dairy Farms, LLC
PO Box 1690
Koloa, HI 96756-1690

Friends of Maha'ulepū
P.O. Box 1654
Koloa, HI 96756

RE: Hawai'i Dairy Farm's ("HDF") May 2016 Draft Environmental Impact Statement (DEIS)

To whom it may concern,

This is a response to the Hawai'i Dairy Farm's proposed dairy on Kauai, Hawaii. The project site is located in Maha'ulepū Valley on 557 acres. The proposed dairy project is situated on top and adjacent to the Koloa aquifer and source of drinking water for the south shore of Kauai primarily via Koloa F well. The soils as described in the DEIS section 4.3 and listed in Table 4.3-1 (page 4-8) find Ka'ena Clay (KavB) and Kalihi Clay (Ke) as comprising sixty percent (60%) or 335.9 acres of the project site.

1) DEIS 4.3 Soils

A NRCS custom soil resource report for the project site describe the soils as "very limited" capacity for manure disposal or disposal of manure through irrigation. The report describes the capability of the soils and the degree that the soils are suited for a type of agricultural activity. As the report states the ratings are based on the soil properties that affect absorption. The properties that affect absorption include; depth to a water table and saturated hydraulic conductivity. Numerical ratings are shown as decimal fractions indicate the severity of individual limitations. They indicate gradations between a soil feature that has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The NRCS Water Features report provides hydrologic soil groups and water table saturation zone. The four hydrologic soil groups are Group A through Group D. Soils are assigned one of the four groups, Group A soils have high infiltration rate to Group D soils having very low



infiltration rate and high water table. Additional information is provided for the water table by the column labeled "Water Table" which provides depth to the top (upper limit) and base (lower limit) measured in feet of the saturation zone.

The predominate soils, Ka'ena Clay (KavB) and Kalihi Clay (Kc), are both rated as 1.00 or the *greatest negative impact* for manure disposal or disposal of manure through irrigation. In addition, these soils are rated as hydrologic soil Group D with an upper limit water table of 2-5 feet.

Conclusion:

The DEIS 4.3 Soils is delinquent in addressing these soil limiting features. The DEIS should discuss these specific soil limitations and address scientifically why these predominate soils are capable since the project, as proposed, relies on manure disposal or disposal of manure through irrigation.

2) The DEIS is incomplete and vacant of any discussion of the high water table.

The DEIS provides no discussion of the water table for the project site. The Archeological Inventory Survey, Revised May 2016 (AIS Draft 4) does provide documentation of the existence of the high water table. The AIS, pages 132-139 describes the results of Stratigraphic Trenches dug on the project site. The AIS states that the "water table was exposed" and in the case of Trench 6 "the water table was reached at 0.9 m below the ground surface", (pg136).

Median nitrate concentration and percent of wells from which water exceeds the MCL are highest for shallow ground water (up to 100 feet deep). The water table in shallow wells is closer to the land surface and to potential sources of contamination, such as fertilizers and manure (Mueller and others, 1995).

Conclusion:

With the soils report acknowledging limitations due to a high water table and data specifically describing found water table levels the DEIS must document and address this important water table issue.

3) The DEIS 4.16.1 Hydrology

The DEIS describes the water analysis conducted for the EIS and states results of the "confined aquifer". This is contrary to the Source Water Assessment Program Report- Kauai Department of Water Supply, specifically the Koloa Well F Koloa-Poipu (DOW) well sheet. The well sheet provides the characteristic heading Upper Aquifer Type: *Unconfined*. This report also list the water as fresh and most important, designates the aquifer uniqueness as *Irreplaceable* (Attachment A).

The DEIS does note that the project will need and obtain permits for monitoring wells, however, the DEIS does not provide an action plan or an immediate response plan to any well contamination. Commercial cattle operations, such as dairies and feed lots, are documented

sources of well water contamination. As discussed by other respondents, municipal and domestic wells throughout the country are found to be severally contaminated by these commercial operations.

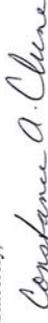
Conclusion:

The DEIS should provide a detailed response to the *Unconfined* and *Irreplaceable* designation of the public wells within the project site. A real, workable well contamination plan must be addressed prior to further project review.

Summary:

Hawai'i Dairy Farm's proposed dairy site is located in an area of very limiting soil, high water table, an irreplaceable aquifer and municipal wells providing drinking water for the south side of Kauai. The economic and environmental hazards have not been adequately addressed by the DEIS, and as such, should not be approved.

Sincerely,



Constance A. Clune
P.O. Box 860
Lawai, HI 96765

Enclosed: Attachment A



January 3, 2017

Constance A. Clune
P.O. Box 860
Lawai, Hawaii 96765

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Constance A. Clune:

Thank you for your letter dated July 22, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) has mapped and classified soils for more than 95 percent of the United States. Comments received during the initial scoping for this EIS included a "Custom Soils Resource Report for Island of Kaua'i, Hawai'i." The report was generated from the USDA NRCS website, which allows any internet user to define an area of interest, customize data results, and generate a Custom Soil Resource Report. The user can select or deselect parameters based upon which data the user would like to display. These user-generated reports are not evaluated by NRCS.

Application of manure provides organic matter that will dramatically improve soil health and allow nutrients from manure to be accessible to grow the grass crop. Traditionally, soil has been the largest area of storage for carbon on earth. However, human disruption of the carbon cycle throughout periods of modern industrialization has released excess carbon into the atmosphere and into the oceans, resulting in a lack of stable carbon that was previously stored in soils. Photosynthesis is the greatest catalyst of transferring carbon from the air into soil. Once in soils, carbon feeds soil microbes that assist plants in acquiring nutrients and create stable forms of soil carbon. Microbes such as mycorrhiza effectively transport a variety of needed nutrients effectively into plants, including nitrogen and phosphorus.

The State of Hawaii Department of Health (DOH) Clean Water Branch (CWB) conducted a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Po'ipu/Kōloa watershed. DOH CWB expressed concern in the survey results that the number of injection wells and cesspools in the Po'ipu/Kōloa watershed are impacting the waters of the Waioipili Ditch. This is largely from the different geological and hydrological composition of the watersheds. Groundwater in the highly urbanized Po'ipu/Kōloa watershed is calculated to move an average of 10 feet per day. The groundwater in the Māhā'ulepū sub-watershed has a calculated velocity on the order of 1.2 feet per day. The Sanitary Survey identifies the Kōloa karst topography and lava tube system that straddles the Po'ipu/Kōloa watershed and the Māhā'ulepū sub-watershed as a possible subterranean transport of injection well and cesspool effluent to the Waioipili Ditch.

Soils in the Māhā'ulepū sub-watershed are formed by the poorly permeable alluvium that covers the valley floor. Alluvium is highly weathered lava that forms silty clay layer, which is described as "poorly drained".

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Pu Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACP

Hiroshi Hidai
AIA

Attachment "A"

**KOLOA WELL F
KOLOA-POIPU (DOW)**

USGS ID :	9996-02	SYSTEM ID :	408-034
LOCATION OF THE SOURCE:		LATITUDE :	XXX
SOURCE OWNER OR USER:	Kaula Dws	LONGITUDE :	XXX
DATE OF CONSTRUCTION:	1998		
GROUND ELEVATION:	130 feet above mean sea level	WELL DEPTH:	377 feet below ground surface
CASING DIAMETER:	16 inches	SOLID CASING to	123 feet below ground surface
		PERFORATED CASING to	175 feet below ground surface
INITIAL WATER LEVEL:	25.86 feet above mean sea level	INITIAL CHLORIDE:	84 ppm
PUMP CHARACTERISTICS		SPECIFIC CAPACITY:	gpm/ft
		PUMP CAPACITY:	gpm
AQUIFER CHARACTERISTICS		AQUIFER SECTOR:	Lihue
		AQUIFER SYSTEM:	Koloa
UPPER AQUIFER HYDROLOGY:	Basal		; Fresh water in contact with seawater
UPPER AQUIFER TYPE:	Unconfined		; Where water table is upper surface of saturated aquifer
UPPER AQUIFER GEOLOGY:	Dike		; Aquifers in dike compartments
UPPER AQUIFER USE STATUS:	Potential use		
UPPER AQUIFER UTILITY STATUS:	Drinking		
UPPER AQUIFER SALINITY in mg/l:	Fresh (<250)		
UPPER AQUIFER UNIQUENESS:	Irreplaceable		
UPPER AQUIFER VULNERABILITY:	High		
LOWER AQUIFER HYDROLOGY:			; Fresh water in contact with seawater
LOWER AQUIFER TYPE:			; Where water table is upper surface of saturated aquifer
LOWER AQUIFER GEOLOGY:			; Aquifers in dike compartments
LOWER AQUIFER USE STATUS:			
LOWER AQUIFER UTILITY STATUS:			
LOWER AQUIFER SALINITY in mg/l:			
LOWER AQUIFER UNIQUENESS:			
LOWER AQUIFER VULNERABILITY:			
WELL GEOLOGY DESCRIPTION:			

Printed: 16-Mar-04

appendix B-1

PRELIMINARY RESULTS

The classification of soils as poorly drained indicates a relatively slow rate water movement within soil and to surrounding areas. Poorly drained is not an indication of low or poor infiltration. Infiltration refers to the ability of water to enter the soil surface, whereas "drainage" refers to the movement of water within or from the soil profile. This slow movement allows for attenuation (reduction) of bacteria, pathogens, and nutrients from manure. Section 4.3 of the EIS characterizes soil conditions, and anticipated impacts from effluent and supplemental nutrient application.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 Geology of Māhā'ulepū and Vicinity displays the volcanic geological history of the area.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

Water is essential for life. Hawaii must become as efficient as possible in its use of limited fresh water supplies due to the need for fresh water for increasing resident and visitor populations. More than 9 percent of the State's drinking water comes for groundwater sources, while much of the water used for agriculture irrigation comes from surface water sources.

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

The proposed action is consistent with the public trust doctrine. The Hawai'i Constitution states that all public natural resources, including water resources, are held in trust by the State of Hawai'i for the benefit of the people of Hawai'i and that the State should "conserve and protect" those natural resources but also "promote the development and utilization of these resources." The Hawai'i Supreme Court has held that, as a result, the State has a "dual mandate." That mandate is 1) to conserve and protect the water resources of the State, which include both groundwater and surface water and but also 2) to allow for "maximum beneficial use" of those resources, including for agriculture. The Hawai'i Supreme Court has therefore expressly rejected the concept that "resource protection" is a categorical imperative. It has held that the State should allow "controlled development" that, while giving preference to public use, access and enjoyment, "promote[s] the best economic and social interests of the people of this state."

Based on this dual mandate, the State has developed the water code, which states that it should be "liberally interpreted to obtain maximum beneficial use of the waters of the State for purposes such as

domestic use, aquaculture uses, irrigation and other agricultural uses, power development and commercial and industrial uses" while also adequately providing for the "protection of traditional and customary Hawaiian rights, the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the State for municipal uses, public recreation, public water supply, agriculture and navigation. Such objectives are declared to be in the public interest."

The public trust doctrine therefore involves a balance--protection and conservation of the public natural resources of the State and a maximum beneficial use of those resources, including for agriculture. Designation of "important agricultural lands", including the HDF site, heightens the public interest in development of agriculture as the Hawai'i State legislature has declared that the people of the State have a "substantial interest in the health and sustainability of agriculture as an industry" and, when so designated, the policy of the State is to promote the long-term viability of agricultural uses on those lands, including by "promot[ing] the maintenance of essential agricultural infrastructure, including the irrigation systems." This serves the "compelling state interest in conserving the State's agricultural land resource base."

The proposed dairy farm will use water from Waita Reservoir for irrigation, which is also the water source for several other farmers and ranchers in the area, including a taro farmer. Non-potable water from Waita Reservoir, which uses water from upland streams, provided irrigation water to the sugar plantation that historically operated in the Māhā'ulepū area, and is used for recreational fishing. The reservoir is located west of the HDF site.

Potable water for the dairy farm will be drawn from deep groundwater wells that were installed by the sugar plantation that formerly operated on the site. The potable water will be used as drinking water for people working on the dairy farm and for the cows. As a result, the proposed action will advance both purposes of the public trust doctrine. The dairy farm will advance the important public interest in protecting and conserving agriculture in the State, including on important agricultural lands, and also further the goal of maximum beneficial use of the surface water and groundwater on those important agricultural lands.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

No dairy at Mahalaepeu.

Charlie Coe <chascoe6089@gmail.com>

Sat 8/27/2016 9:06 PM

To: HDF <hdf@group70int.com>;

Worst plan ever for this sensitive piece of paradise. Please do not think for a minute this will benefit anyone who lives here with love and respect for the island.



PRINCIPALS

Francis S. Oda, Arch.D.
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucicola
AICP, LEED AP

James L. Stone, Arch.D.
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Charlie Coe
chascoe6089@gmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Charlie Coe:

Thank you for your email received on August 27, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The Hawai'i Dairy Farms (HDF) project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands (IAL) to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Overall, the project provides long-term benefit and support of agricultural lands through continued use in keeping with zoning and IAL designation.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read "Jeffrey H. Overton".

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Testimony re recreational use at Maha 'ulepu and Waipoli Stream with photos submitted by Jenica K Waymen & Michael Coon / and concerns re pollution

Michael and Jenica Coon-Waymen <michaelandjenica@gmail.com>

Wed 7/20/2016 7:16 PM

To: doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; HDF <hdf@group70nrt.com>; jim@hawaiidairyfarms.com
<jim@hawaiidairyfarms.com>;

 4 attachments

Jenica wading at mouth of Maha'ulepu stream, Jan 7 2009.JPG; Jenica wading Maha'ulepu stream at its mouth on a high tide Nov 29 2009.JPG; People wading across stream just above the mouth, Maha'ulepu Nov 29 2009.JPG; Jenica wading Maha'ulepu stream at its mouth Jan 17 2014 b.JPG;

To,

Laura McIntyre
State of Hawaii, Department of Health, 1250 Punchbowl Street,
Honolulu, Hawaii, 96813

Jeff Overton
Group 70 International Inc.
925 Berthe Street, 5th Floor
Honolulu, Hawaii 96813

Hawaii Dairy Farms LLC
PO Box 1698, Kilauea, Hawaii
96756-1690

Albha,

We wish to give testimony to the use of the Waipoli Stream and surrounding area of Maha'ulepu Beach for recreation through our own experiences as well as tourists, guests and family.

For 4 to 5 months each year over the past 10 years, we often enjoyed visits to our favorite beach in Kauai, Maha'ulepu.

Since we do not have a 4 wheel drive vehicle, we parked our car and hiked along the beach, crossing the Waipoli Stream with bare feet.

This beach and stream is a popular way for visitors to enter and enjoy Maha'ulepu Beach as it is not possible to drive rental cars to Maha'ulepu along the road.

There are too many pot holes on the road and the car could be damaged. We damaged our own car on the pot hole filled road and thereafter walked along the beach and crossed through the Waipoli stream.

We enjoyed many days swimming in the ocean in the area of the Waipoli stream. As well we brought visitors and family to explore the archeological cave, and the tortoise and indigenous plant reserve. Afterwards, we swam in the ocean and relaxed on the beach around the stream area as a most fulfilling destination and highlight of friend's visits to Kauai.

Maha'ulepu is truly a unique, rare and natural experience... away from the tourist hotels and shops.
Maha'ulepu is the original authentic paradise Hawaii that people crave to experience.

When meeting visitors and tourists on crowded hotel beaches, we often suggested that they visit Maha'ulepu as the all time favorite natural beach. This is the beach which most resembles the vision of a natural, untouched, pristine tropical paradise.... that tropical paradise that many dream to find one day.

We are including photos of Jenica and also our friends, crossing the stream and walking in the shallow water around the Waipoli area.

Jenica's experience

On several occasions in 2013 and 2014, the stream was flooding. On one occasion, the rushing stream current was so high and strong that I lost my footing and fell in while crossing the stream. I injured myself on the rocks and swallowed the water. I was subjected to wearing clothing drenched in this sewage water for the day. My health was precarious at the time and I was not feeling well. We do not know if it was related to swallowing the polluted water, but I felt strangely ill at the time of falling in and swallowing the water. I did suspect that the stream was polluted from the way I was feeling. However, we could not know the stream was polluted for certain as there were no warning signs.

Despite Maha'ulepu is one of the most stunningly beautiful wild beaches in Kauai, we are deeply concerned to learn Waipoli is the most polluted stream in Kauai.

Why has the public not been warned about the pollution? Where is the responsibility to public health?

sincerely,

Jenica K Waymen B.A.

Michael Coon, MSc Marine Biologist

548 Beach Drive

Victoria BC, Canada

V8S 2M5

[1250.598.0650](tel:12505980650), phone

July 19, 2016



January 3, 2017

Jenica K. Waymen
Michael Coon
548 Beach Drive
Victoria BC, Canada
V8S 2M5
michaelandjenica@gmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Jenica and Michael:

Thank you for your email received July 20, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Waiopili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter-strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waiopili Ditch will be improved by active management of the dairy site.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and will allow for evaluation of possible contamination sources.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

OF COUNSEL

Ralph E. Portmore
FACIP
Hiroshi Hida
AIA

Jenica K. Waymen
Michael Coon
January 3, 2017
Page 2 of 2

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUJAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

concerns about inadequate DEIS for Hawaii Dairy Farms

Felicia Alongi Cowden <akamaimom@gmail.com>

Sun 7/24/2016 3:36 AM

To: Hawaii State Department of Health
Regarding: Concerns about inaccuracy of the Draft Environmental Impact Statement of the Hawaii Dairy Farms project at Maha'ulepū

The six-inch thick DEIS leaves out some of the most essential information that needs to be included.

1.) Waipoli Stream that drains the Mahaulepū valley into the ocean is already alarmingly contaminated with fecal bacteria at a scale that is off the charts of what the Department of Health tracks. Surfider Foundation has performed roughly two years of scientific study that demonstrate this area is already problematic and is essentially the most contaminated stream on the island, including those downstream from concentrated urban areas. It is hard to determine exactly where this consistent and alarming level of contamination is sourced.

2.) The efforts of Friends of Mahaulepū and Surfider (not the Department of Health) have surfaced the practice of Aqua Engineers placing the county bio-solids from the sewage treatment plants in the general area of Mahaulepū for eleven years. This practice has now stopped since the stream contamination indicated a problem. It is indeterminate that the bio-solids are the source of the high bacterial count in the stream because of the location not being too directly on the path to the water. There are "rumors" that honey-pots and cess-pools may also be the cause of the high bacterial count. All of this is left out of the study.

3.) The geologic structure of the area is not clearly determined and seemingly the drainage of the contaminated areas are moving in unexpected directions as is evidenced by the high stream contamination in what should be a relatively pristine natural valley.

4.) No health analysis is in the DEIS of the impacts of the animal vaccinations and routine antibiotic care of the herd of cattle into the water system.

5.) Municipal wells C, D, & F that feed the communities of Poipu and Kōloa are unconfined wells that are fed from the large Kōloa aquifer that will also hold the potential 2000 head of cattle who will excrete 2-3 million pounds of untreated sewage per month. It is staggering that the DOH would not question the impacts of this level of contamination to a key water supply in which two of the wells are within 750 feet from the sewage holding ponds. All of the sewage has application directly onto the clay soil with a low percolation rate. The nitrates will absorb and much of the rest will make it down to the stream and the ocean.

6.) No economic analysis is included in the DEIS on the potential tax base if the water in the Kōloa/Poipu area is contaminated, nor if the air environment becomes unpleasant with odor or fumes. This high property value area is about 25% of the tax base of Kauai and a more significant amount of the Transient Accommodation Taxes generated for the state.

7.) The proposal in the DEIS is a substantial variation from what was presented to the community in the public outreach held at Kōloa Elementary by HDF about 1.5 years ago. The water management plan changed substantially within less than a month before release of the DEIS. The 6 day rotation on the grass-fed areas is not substantial for recovery. 45 days is the normal recommended amount. The Department of Health allows for an unacceptable level of risk for little return with approval of this dairy.

8.) Group 70 who created the DEIS is also the developer of the dairy. In searching them on the internet, this is an organization that is a resort developer and not an agriculture or dairy organization. They are not appropriate for making this assessment. We would not have a dairy developer assess the impacts of a resort. The owner of the property Pierre Omydiar has an emphasis in resort development. Mahaulepū would make an ideal high-end development of world class potential. The community has fought hard to keep Mahaulepū pristine and natural. A common concern is for the investor to be essentially leveraging the community with the health-threatening incompatible use of a dairy, so as to be willing to settle for a resort instead. Regardless of the motivation, Group 70 is inappropriate to make this analysis and Mahaulepū is inappropriate for a dense animal operation.

9.) I have read much of the Friends of Mahaulepū's outreach to the DOH which uncovers a great deal of science as to the challenges of the placement of the dairy.

There is minimal value in a re-statement of the quality research and responses that have been placed before the Department of Agriculture, Health and the governor's office. It is very difficult to understand how the risk to the community is being ignored by the state government.

This dairy should not be placed in this inappropriate location which is too small, too close to the ocean and a municipal water system.

Please do not approve this Hawaii Dairy Farm.

Felicia Cowden
4191 Kilauea Road
Kilauea, HI 96754
808-652-4363

January 3, 2017

Felicia Alongi Cowden
4191 Kilauea Road
Kilauea, Hawaii 96754
akamaimom@gmail.com

Subject:

Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawaii
Response to Comment on Draft EIS

Dear Felicia Alongi Cowden:

Thank you for your letter dated July 22, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Complaints from the public citing the high levels of enterococcus in Waipoli Ditch and public concerns about the proposed dairy prompted the Hawai'i State Department of Health (DOH) Clean Water Branch (CWB) to conduct a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Waikomo watersheds. The EIS cites the findings of the Sanitary Survey, including the concern by DOH CWB that the number of injection wells and cesspools in the adjacent Waikomo watershed, which includes Kōloa and Po'ipū, are impacting the waters of the Waipoli Ditch.

The Part 1 Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors to the fecal indicator bacteria (FIB) levels in ditches running through Māhā'ulepū Valley. CWB noted that Waipoli Ditch is a man-made drainage ditch on private property, and is not an inviting recreational body of water utilized by people. Further testing is needed to more clearly identify whether the source(s) of FIB is human or animals, and DOH CWB has partnered with a University of California laboratory to more definitively determine the source of the fecal contamination in Waipoli Ditch. Results will be published as Part 2 of the Waipoli Ditch Sanitary Survey. The *Waipoli Ditch Sanitary Survey, Kauai Part 1* can be accessed on the DOH Clean Water Branch website under "Library" (<http://health.hawaii.gov/cwb>).



PRINCIPALS

Francis S. Ode, Arch.D.,
FAA, ACP, LEED AP

Norman G.Y. Hong
AAA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matusuda
PE, LEED AP

Ma Pu Kim
IBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

The drainageways and ditches installed in the late 1800s and early 1900s were developed to bring water to and through the site for sugarcane irrigation. HDF will protect water resources from runoff through both physical setbacks and effluent application limits.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainageway (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Waioipili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waioipili Ditch will be improved by active management of the dairy site.

Healthy cows are a priority for HDF, and antibiotics as prescribed by a licensed veterinarian may be used from time to time, to ensure cows remain healthy and are treated humanely. Guidelines set by Food and Drug Administration (FDA) will be followed to avoid any antibiotic adulteration of milk. Additionally, HDF will routinely conduct laboratory tests on milk for any trace of antibiotic residue. HDF will not treat cows with sub-therapeutic, preventative, or growth promoting use of antibiotics, ionophores or hormones (such as rBST), bovine growth hormones (rBST or rBGH).

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area.

Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. Groundwater velocity under the proposed HDF site is on the order of 1.2 feet per day, while the groundwater under the Po'ipū-Kōloa watershed area averages 10 feet per day. The faster movement of groundwater reduces the attenuation period – that is, reduced virulence of bacteria, viruses, and nutrients that occurs with movement through soils. The alluvial material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 Geology of Māhā'ulepū and Vicinity displays the volcanic geological history of the area.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional

setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix I.

The developer of the dairy is Hawai'i Dairy Farms (HDF); Group 70 International, Inc. (Group 70) is a consultant to HDF. As the consultant, Group 70 is responsible for the preparation and processing of the HDF EIS. The EIS was prepared in accordance with the requirements of Chapter 343 Hawai'i Revised Statutes and the "Environmental Impact Statement Rules" (Chapter 200 of Title 11, Hawai'i Administrative Rules). The environmental planning team at Group 70 has prepared several hundred Environmental Assessment and EIS documents over the past 40 years, and every document has been accepted by the responsible County, State and Federal agency. On numerous past EIS projects, the Hawai'i Chapter of the American Planning Association has recognized Group 70's professional work with Chapter awards for excellence in environmental planning. Part of the EIS scoping process involves Group 70's experienced team of technical sub consultants that are well-known and qualified in their respective fields of study. For this project, Group 70 is preparing the Hawai'i Dairy Farms EIS with the level of analysis required to properly evaluate and disclose the existing environmental conditions, probable impacts with mitigation, and potential cumulative and secondary effects.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner



EnviroWatch, inc.

www.envirowatch.org

envirowatch@envirowatch.org
ph/fc: 808-625-2175

PO Box 89-3062, Milliani, HI 96789

7/25/16

Testimony in strong opposition to the proposed Dairy Farm at Mahaulepu, Kauai, Hawaii.

As President of EnviroWatch Inc. I am writing to you in opposition of the industrial dairy being proposed by Hawaii Dairy Farm. We believe the dairy is not compatible to the area and will have a substantial negative impact on the native plants, animals, cultural and archeological sites, and the marine environment in the area.

We are also concerned with the negative sociological and economic impacts the dairy will have on the Island residents. We believe that the area should be used to farm food crops that have less of an impact.

We reserve the right to make amendments to this letter if future circumstances allow.

Thank you,

Carroll Cox



PRINCIPALS

Francis S. Oda, Arch.D.,
FAA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruzola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Carroll Cox
P.O. Box 89-3062
Milliani, Hawaii 96789

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Mahaulepu, Koloa District, Kauai, Hawaii
Response to Comment on Draft EIS

Dear Carroll Cox:

Thank you for your letter dated July 25, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The planned improvements and operations at Hawaii Dairy Farms are compatible with and supportive of State of Hawaii and County of Kauai land use policies, plans and control related to the natural and social environment. The Proposed Project is consistent with and permitted by applicable land use designations and, as discussed in EIS Section 5.0, will contribute a wide range of benefits to further established goals, objectives and policies. In particular, Hawaii Dairy Farms is consistent with the State and County initiatives for food sustainability and the long-term intended use of Important Agricultural Land on Kauai. The dairy is also consistent with the provisions of the State of Hawaii Agricultural Functional Plan, and long-range planning for diversified agricultural use of Mahaulepu lands under the County of Kauai General Plan and the South Kauai Community Development Plan.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

As part of the EIS process, the HDF project is subject to a historic preservation review by the State Historic Preservation Division under Hawaii Revised Statute Chapter 6E and Chapter 13-284. An Archaeological Inventory Survey (AIS) and a Cultural Impact Assessment were conducted by Scientific Consultant Services for the proposed project. Sections 4.7 and 4.8 of the EIS provide an evaluation of archaeology and cultural resources, with the full reports in Volume 2, appendices G and H.

MYA CURTIS <myacurtis@msn.com>

Mon 7/18/2016 11:05 AM

To: HDF <hdf@group70int.com>;

I am firmly against this dairy. I have worked for the Hyatt for 26 years and many guests say they would not revisit the Hyatt with a dairy so close!

Traditional and historic use of the Māhā'ulepū area includes intensive sugarcane cultivation throughout the entire valley (including the project area), as evidenced by the infrastructure in the valley. Early 20th century maps also document the extent of the fields throughout the Kōloa area, showing the entirety of the current project area consisted of sugarcane lands. Based on the research and comments received from the community, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights or any ethnic group related to numerous traditional cultural practices will not be impacted by establishment of the dairy.

The State Historic Preservation Division accepted the AIS on December 19, 2016 (Appendix G). SHPD concurs with the significance assessments and mitigation recommendations in the AIS, which identifies the 14 plantation-era sites within the project area as significant only under Criterion d (Information potential). The letter states no further work is recommended for these sites (50-30-10-2251 through 2262). Two sites outside the Project Area, an enclosure (Site - 2250) and a petroglyph complex (Site - 3094), were assessed as significant under Criterion d (Information potential) and e (Cultural value). The SHPD letter states that the current proposed project will not affect these two sites, and no further mitigation is recommended for the project.

Based on the AIS and CIA technical reports, no significant cultural resources are located on the HDF property. Access to adjacent properties will continue to be the responsibility of the land owner, Mahaulepu Farm, LLC.

As a part of the EIS, alternatives were evaluated that could attain the objectives of the action's purpose and need, and were compared with environmental benefits, costs, and risks of each reasonable alternative against those of the proposed dairy project. Further discussion of alternatives can be found in EIS Section 6. Growing other plants and crop types does not achieve the action's purpose and need in regards to Objective 1 – reducing the dependence of the state on imported milk.

Of all the alternative actions and locations considered, the planned agricultural operations of Hawai'i Dairy Farm is the only approach that achieves project objectives and meets each of the five Evaluation Criteria described in EIS Section 2.3.4.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OE/QC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Kauai Dairy Farm

Eric P Davis <hanalelep@gmail.com>

Tue 7/19/2016 1:44 AM

To: HDF <hdf@group70int.com>;

As one who has experience living near a dairy farm I am appalled that this project is even being considered. Despite the KDF best intentions, on any given day the stench, flies, waste water effluent will despoil one the most pristine places left on earth. The ES is a nice bit of fluff but it does not conceal the fact that a very few people will benefit at the expense of everyone else. Kauai is a beautiful place with so many challenges please consider redirecting you resources to projects that benefit Kauai, not plunder it.

Respectfully,
Eric P Davis
Princeville, HI
hanalelep@gmail.com



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yulín
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matusuda
PE, LEED AP

Mi Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Eric P. Davis
hanalelep@gmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Eric P. Davis:

Thank you for your email of July 19, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Roughly 90 percent of goods used in the state, including daily food requirements of residents and visitors, arrive in Hawai'i via ocean and air shipping. The recent announcement by Hawai'i Governor Ige at the 2016 World Conservation Congress in Honolulu, to double local food production in the state by 2030, reflects yet another initiative to advance agricultural self-sufficiency within the State. HDF's objectives to produce more than 1 million gallons of milk annually for local consumption through growing more than 70 percent of the herd's feedstock within the HDF site will play a large role in the food sustainability movement in Hawai'i.

HDF will be the first dairy in Hawai'i to employ rotational-grazing, which utilizes manure as a valuable resource. This is a fundamental difference and advantage over conventional feedlot dairy operations, which typically have insufficient land to recycle the nutrients for uptake by forage plants and instead rely on imported feed and large storage lagoons to hold manure. The rotational-grazing method is cost-effective as it reduces the need to import fertilizer and feed, and minimizes potential impacts to the environment by using 100 percent of the manure as nutrients to grow the majority of the forage for the herd. Benefits of pasture grazing include, but are not limited to, improved soil health, and increased animal health and productivity. The dairy will feature modern facilities and practices that will comply with all applicable Federal and State environmental standards.

Eric Davis
January 3, 2017
Page 2 of 2

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC. The dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Lori Decker
2659 Puuholo Rd
Koloa HI 96756

July 24, 2016

Laura McIntyre
State of Hawaii Dept of Health
1250 Punchbowl Street
Honolulu HI 96813

Jeff Overton
Group 70 International Inc
925 Bethel Street 5th Floor
Honolulu HI 96813

Amy Hennessey
Hawaii Dairy Farms
PO Box 1690
Koloa HI 96756



RE: Hawaii Dairy Farms Draft Environmental Impact Statement

Dear Ms McIntyre,

In February 2014 Hawaii Dairy Farms spokesperson Amy Hennessey assured the Koloa-Poipu community that their proposed state-of-the-art New Zealand model dairy was a zero-discharge operation, the proposed dairy operation would control the flies by introducing wasps, and stated many times since that "activists" were spreading misinformation and fear, misrepresenting the facts about their proposed dairy operation.

I am one of these "activists", "a self-interested individual" as Amy Hennessey wrote in today's Garden Island newspaper, a resident of Kauai since 1986. I am an educated widow and small business owner who has served the Koloa-Poipu community by giving free piano lessons after school to children for 20 years. I am concerned with the economic and environmental impact of the proposed experimental dairy operation sited too near our beloved Maha'ulepu-Koloa-Poipu community.

It is interesting that the Hawaii Dairy Farms draft EIS no longer refers to the dairy farm operation being modeled after the grass-fed dairies of the island of New Zealand, as stated on the Hawaii Dairy Farms' website and by its spokespersons at Koloa community meetings, because it is now well documented that the island of New Zealand's many streams and rivers are contaminated by dairy cow urine-mamure run off during heavy rainfall over extended periods, resulting in the poisoning of marine life. Those New Zealand contaminated rivers and streams flow to the ocean, as would happen should the dairy be developed in Mahaulepu Valley.

Hawaii Dairy Farms draft EIS states that the proposed operation will NOT be a zero-discharge operation, another departure. The EIS acknowledges there will be discharges to the Waiopii Stream/Ditch which flows downstream to the ocean over 1.7 miles of clay-based soil. The EIS utilized a chart of monthly rainfall data dated from 1904-1983. That rainfall chart ended 33 years ago, and leaves out the 2006 30 days and 30 nights rain event for the Mahaulepu-Koloa-Poipu area. The EIS must include a study prepared by an independent experienced consultant with up-to-date historic rainfall figures, and must take into account 2006.

Manure particles will be sprayed as well as carried in to the ditches and downstream into the ocean and storm water flows. Referring to raw, untreated manure as "nutrients" and "fertilizer" does not mean it will not foul the Mahaulepu-Poipu-Koloa air, streams and ocean.

The EIS did not provide an accurate study of the **projected discharge in heavy rain events** and provide adequate solutions to contain the dairy discharge. The EIS should contain such studies by independent consultants.

The introduction of dung beetles to control the **biting fly** population is not a sound solution because of the vast number of dung beetles required, and the fact dung beetles are seasonal. The EIS did not provide a reliable biting fly control system. The EIS must contain a feasible fly control system prepared by an independent expert.

The proposed dairy milking shed would produce a large volume of **wastewater** made up of manure, urine, milk and water, which if discharged directly into watercourses can have significant environmental impacts. The proposed wastewater would be stored in 2-million gallon pits, or "effluent ponds", and would be used to irrigate pastures. The **overhead wastewater irrigation** plan would send the manure-urine-milk-water mixture into the air. The EIS must provide a study on the exact distance the wastewater irrigation particles will travel on dust particles in Kauai tropical winds.

The proposed dairy operation is located on top of the Koloa Aquifer. It is inconceivable there would be no **nitrate leaching** from the experimental dairy operation into the aquifer. The EIS must include a study of the specific effect dairy cow urine nitrates on the Koloa Aquifer by an independent qualified expert consultant.

The **air quality problems** caused by gases emitted from the decomposition of dairy cow wastes and by the dust generated by animal activity and farming practices are well documented by many experts in their respective fields of farming, animal, air, water, and ocean study. The EIS must include a detailed study on the air quality specifically for Kauai's tropical environment. Such study should be prepared by an independent consultant.

There will certainly be **excessive noise pollution** caused by **crying bellowing dairy cows and calves** during Poipu-Koloa's quiet nights. Sound echoes throughout our community for miles. The experimental dairy's EIS must provide an independent study of the adverse effect of this specific type of noise on the Poipu-Koloa area.

There will certainly be **excessive light pollution** from the **proposed milking shed** during Poipu dark night and early mornings. The experimental dairy's EIS must provide a study of the projected light pollution from the proposed State-of-the-art milking parlor on the Mahaulepu-Koloa-Poipu area residents and wildlife.

For the experimental dairy's EIS to state **"The dairy will not adversely affect, residents, recreational activities, guests at nearby resorts, or diminish property sales or values in the area"** insults the intelligence of long-time residents and business owners of the Poipu-Kauai community. The EIS does not adequately provide the necessary studies required to reach this broad over-reaching conclusion. An independent economic impact study must be included in the EIS.

The experimental dairy EIS **did not cite one successful example in the world of a rotational grazing operation in a tropical climate with the number of cows planned, less than two miles upstream from the ocean, on clay-base soil.** Our sacred Mahaulepu Valley should not become a test center for an experimental dairy operation.

I understand the experimental dairy operation requires an enormous amount of potable water daily, and the land owner has promised Waita Reservoir water to the experimental dairy operation in its lease. However there must be other suitable Kauai experimental state-of-the-art dairy sites away from existing residential communities and their water wells. **The EIS did not adequately study alternative Kauai sites.**

I've enjoyed the natural beauty and serenity of the Mahaulepu-Poipu-Koloa area for thirty years. Therefore I ask that the EIS be amended to include all the requested studies in this letter.

Sincerely,


Lori Decker

James Design Shoppe of Hawaii Ltd
PO Box 1214
Koloa HI 96756

July 22, 2016

Laura McIntyre
State of Hawaii Dept of Health
1250 Punchbowl Street
Honolulu HI 96813

Amy Hennessy
Hawaii Dairy Farms
PO Box 1690
Koloa HI 96756

RE: Hawaii Dairy Farms DRAFT Environmental Impact Statement

Dear Ms McIntyre,

The air quality problems caused by gases emitted from the decomposition of dairy cow wastes and by the dust generated by animal activity and farming practices are well documented by many experts in their respective fields of farming, animal, air, water, and ocean study. For the experimental dairy plan to state **"The dairy will not adversely affect residents, recreational activities, guests at nearby resorts, or diminish property sales or values in the area"** insults the intelligence of long-time residents and business owners of the Poipu-Kauai community. We know the air pollutants from dairy cows can cause respiratory illness, lung inflammation and increase vulnerability to respiratory diseases like asthma. **The Hawaii Dairy Farm EIS must include an economic impact study prepared by an independent qualified consultant.**

The draft EIS **did not cite one successful example in the world of a rotational grazing operation in a tropical climate with the number of cows planned, less than two miles upstream from the ocean, on clay-base soil.** Our sacred Mahaulepu Valley should not become a test center for an experimental dairy operation.

We understand the experimental dairy operation requires an enormous amount of potable water daily, and the land owner has promised Waita Reservoir water to the experimental dairy operation in its lease. However there must be other suitable Kauai experimental state-of-the-art dairy sites away from existing residential communities and their water wells.

The Draft EIS did not study alternative Kauai sites as required. Nor did the EIS adequately study the distance aerosolized manure and urine will travel with Kauai trade winds when "effluent" is spread through overhead irrigation.

The EIS must include a study of alternative Kauai sites for the experimental dairy operation, as well as provide a detailed study of the distance their overhead wastewater irrigation system will travel in our tropical isle winds.

Sincerely,


Lori Decker
President

Coastline Cottages Inc
2660 Puuholo Road
Koloa HI 96756

July 22, 2016

Laura McIntyre
State of Hawaii Dept of Health
1250 Punchbowl Street
Honolulu HI 96813

Group 70 International
925 Bethel Street 38th Floor
Honolulu HI 06813

Amy Hennessey
Hawaii Dairy Farm
PO Box 1690
Koloa HI 96756

RE: Hawaii Dairy Farms DRAFT Environmental Impact Statement

Dear Ms McIntyre,

It is very difficult to believe that "The [proposed experimental] dairy will not adversely affect residents, recreational activities, guests at nearby resorts, or diminish property sales or values in the area" and that "no noticeable odors, flies or discharge of waste will reach resort or residential areas", as stated in the experimental dairy's EIS. Many other experts have done analysis that indicate otherwise.

The experimental dairy's EIS does not provide adequately detailed scientific studies related to the economic effects of biting flies, air pollution, noise pollution, light pollution, and water pollution to local Poipu businesses and workers caused by an experimental dairy operation in nearby beloved Mala'ulepu Valley.

The EIS is missing an economic impact study, and such a study needs to be prepared by an independent consultant and included in the EIS. A proposed state-of-the-art experimental dairy of any size in Maha'ulepu Valley will certainly cause a permanent economic disaster for the Poipu visitor industry. Word will quickly spread on social media not to go to Poipu. Why would visitors come to Poipu? There are many other beautiful places to relax by a pool or on a beach that doesn't have biting horse flies swarming their heads, trying to bite their ears.

There are many broad, and some disingenuous, statements in the Draft EIS which insult the intelligence of long-time residents and business owners of the Poipu-Koloa community. **Perhaps the most ludicrous is their proposed fly control plan, is the introduction of "local" dung beetles to the proposed site.** "High populations of dung beetles will bury the dung pats in one to three days" is preposterous on its face. Using the proposed dairy's 699 cow figure and 90 pounds/day of dairy cow liquid manure, one would require **25 MILLION DUNG BEETLES PER DAY** to eat the manure. This is NOT an effective solution because dung beetle activity is seasonal while manure will be produced year-round with flies breeding continuously. **The EIS must include a credible fly control solution for Kauai's tropical climate.**

There will certainly be excessive noise pollution from crying, bellowing dairy cows and calves during Poipu's quiet nights. **Night sound echoes and the EIS needs to include a study of that specific noise pollution.** There will certainly be light pollution from the proposed milking parlor during Poipu's dark nights and early mornings. **The EIS needs to include a study of the light pollution caused by the proposed twice/day milking operation.**

Sincerely,


Lori Decker
President



PRINCIPALS

Francis S. Oda, Arch.D.
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
IBA, AIB

Craig Takahata
AIA

OFF COUNSEL

Ralph E. Portmore
FACP

Hiroshi Hida
AIA

January 3, 2017

Lori Decker
2659 Puuholo Road
Koloa, Hawaii 96756

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Maha'ulepu, Koloa District, Kauai, Hawaii
Response to Comment on Draft EIS

Dear Lori Decker:

Thank you for your email of July 27, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

HDF will be the first dairy in Hawaii to employ rotational-grazing, which utilizes manure as a valuable resource. This is a fundamental difference and advantage over conventional feedlot dairy operations, which typically have insufficient land to recycle the nutrients for uptake by forage plants and instead rely on imported feed and large storage lagoons to hold manure. The rotational-grazing method is cost-effective as it reduces the need to import fertilizer and feed, and minimizes potential impacts to the environment by using 100 percent of the manure as nutrients to grow the majority of the forage for the herd. Benefits of pasture grazing include, but are not limited to, improved soil health, and increased animal health and productivity. The dairy will feature modern facilities and practices that will comply with all applicable Federal and State environmental standards.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Malahaupu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-foot from drainage way (totaling 70-foot in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Waioipili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waioipili Ditch will be improved by active management of the dairy site.

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waioipili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of both physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 *Nearshore Marine Waters*, and Appendix F.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaula'i community, and will allow for evaluation of possible contamination sources.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaula'i and those species already in Māhā'ulepū Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

There has been no rainfall event that would exceed the capacity of the effluent ponds since rainfall has been recorded in Māhā'ulepū Valley. The effluent pond capacity has been designed to exceed the regulatory requirement of containing the 25-year, 24-hour rainfall event. Under the committed herd size of 699 mature dairy cows, the ponds could hold an additional 45 percent volume; under the contemplated herd size of up to 2,000 mature dairy cows, the ponds could hold an additional 12 percent volume. An emergency containment berm has also been added to the design, providing additional capacity equivalent to 30 days of effluent for the potential contemplated herd size up to 2,000 mature dairy cows.

The groundwater engineer consulting to HDF estimated the potential nutrients that could leave the site from HDF operations as two percent of nitrogen (totaling 10,000 pounds per year), and one percent of phosphorus (totaling 900 pounds per year). This would not occur as chronic daily releases, rather, contributions would be limited to periods of major rainfall events that exceed 0.8 inches. Such rainfall events are estimated to occur, on average, 10 days annually. No effluent application would be conducted two days prior to, during, and two days after such weather events per best management practice guidelines. The estimate of nutrients leaving the site is the same for both the committed herd size of 699 mature dairy cows and the contemplated herd size of up to 2,000 mature dairy cows.

To provide perspective, nutrient inputs from the adjacent Kōloa-Po'ipū region were also calculated. Nitrogen input to the marine environment in the Po'ipū region is calculated to be 38,510 pounds annually, or 3.5 times more than the estimate of potential nutrient throughput from HDF. Phosphorus for both domestic wastewater and landscape fertilization in the region is estimated to be 1,260 pounds annually, or 1.4 times greater than the potential discharge from HDF. The nutrient inputs from domestic uses in the Po'ipū region are constant throughout the year and no mitigation is applied to reduce the quantities.

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 *Geology of Māhā'ulepū and Vicinity* displays the volcanic geological history of the area.

Unlike a conventional feedlot dairy facility that must collect and store all manure produced until future disposal, the majority of manure from a pastoral-grazing operation will be deposited directly on the pasture where it will break down and be incorporated into the soil within a one- to three-day period.

Without a dairy in operation, computer-generated modeling was used to determine the potential impact. Results for the committed herd size of 699 mature dairy cows using typical effluent irrigation conditions show that odors may be detectable by 50 percent of the sensitive population once per 200 hours, or just 44 hours per year, within one-quarter of a mile south of the dairy farm boundary. For wet periods, odor could extend approximately 2.151 feet (less than one-half of a mile) beyond the southern boundary. The closest public use areas beyond the odor extent south of HDF are a stable and golf course, both approximately 0.5 miles further south, and the closest residential and resort units are 1.3 miles beyond the possible odor extent (EIS Figure 4.19-1).

HDF has elected to restrict slurry application to periods when wind speeds are between 9 and 20 mph. With application at the most impactful location, paddocks south of the taro farm, the odor from slurry application barely crosses the southern boundary. Due to wind speeds within this range occurring on average 243 days of the year, the 99.5th percentile is reduced to potentially perceiving the odor just 29 hours per year.

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location – paddocks south of the taro farm – the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas. The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

Dairy operations will generate noise in keeping with agricultural zoning of the parcel. Those within hearing range would be farmers working nearby parcels. Noise from the dairy will not exceed the DOH threshold, and will not contribute to excessive noise in the region.

Per the advisement of the U.S. Fish and Wildlife Service and the State Division of Forestry and Wildlife, HDF will follow best practices and operational procedures to protect any protected animal species. While there are almost no suitable roost trees within the dairy site, HDF will not disturb, remove or trim woody plants greater than 15 feet tall during the Hawaiian hoary bat pupping season. No affect to bats is expected from activities and operations of the dairy farm. All outdoor lights installed as part of the project will be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights and man-made structures. A predator control program will be implemented and maintained to reduce threats to waterbirds or nēnē transiting through or possibly nesting. An Endangered Species Awareness and Protection Plan will be completed in consultation with USFWS and DOFAW prior to dairy construction and operations, to ensure that dairy operations would not result in deleterious impacts to protected wildlife.

The Hawai'i Dairy Farms project emerged from a group of partners and affiliates, including Grove Farm, Finistere Ventures, Kamehameha Schools, Maui Land & Pineapple and Ulupono Initiative. The group conducted grass trials statewide to determine the best site for a rotational-grazing pasture based dairy. In addition to the grass trials, HDF coordinated with landowners of agriculturally-zoned lands in the State, as well as the Department of Agriculture, the Agribusiness Development Corporation, and the Trust for Public Land. The broader team identified, toured and evaluated six parcels of sufficient size: two on O'ahu; two on Hawai'i Island; and two on Kaua'i. Kaua'i was found to be the optimal location, as it met all the operational requirements for pasture-based dairy:

- Relatively flat, contiguous acres to move cows with minimal stress;
- Soils suitable to efficiently utilize applied nutrients for growth of forage,
- Adequate water for irrigation and operations;
- Suitable climate conditions for animals and grass growth,
- Agricultural-zoned land available for 20 years or more of sufficient acreage to support an economically viable dairy, preferably IAL, and
- Access to required operational support elements (trucking, pasteurization, work force, etc.).

In response to comments on the Draft EIS, Ulupono Initiative again searched for agriculturally-zoned land with potential long-term availability that may have become available in the past few years. An additional 1,300 acres of Grove Farm property on Kaua'i in the Māhā'ulepū area were recently vacated by Pioneer Seed Company. These fields are closer to resorts and residences, and do not provide further benefit to the project or community than the HDF site evaluated in this EIS. Alexander & Baldwin announced in January 2016 that Maui lands in sugarcane will be transitioned to diversified agriculture in the future. However, water rights and access for diversified agriculture must be settled through a forthcoming process, and water availability is currently unknown. Thus Ulupono Initiative, which conducted the research, is unaware of any new property meeting the requirements for a pasture-based dairy that has become available since its initial evaluation.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Dairy Farm Proposal at Maha'ulepū

Richard DeMarco <RFDDeMarco@hawaii.rr.com>

Wed 7/20/2016 1:35 PM

To: HDF <hdf@group70int.com>;

Aloha,

I am writing to express my concerns regarding the discrepancies and omissions in the Draft Environmental Impact Statement pertaining to the above proposed project.

Last-minute changes were submitted by Hawaii Dairy Farms which do not appear in the current DEIS.

Several issues, such as impact on the endangered cave spider and effect of feed supplements and hormones in the waste stream, were either glossed over or not mentioned at all.

For these reasons I believe that HDF should withdraw its documents, resubmit a comprehensive plan with all parts of the plan in one document so the public can knowingly comment on the actual project being proposed.

Only then will the public be able to make informed comments on the plan.

Respectfully submitted,

Richard DeMarco
Makaleha Farms
Kapa'a



PRINCIPALS

Francis S. Odeh, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACP

Hiroshi Hida
AIA

January 3, 2017

Richard DeMarco
RFDDeMarco@hawaii.rr.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Richard DeMarco:

Thank you for your email on July 20, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

In preparation to develop the Draft EIS, HDF listened to public concerns, retained knowledgeable consultants to conduct technical analyses, refined data gathered from field trials on site, and further incorporated U.S. standards and best management practices to create a world-class design for the environmentally sound pasture-based, rotational-grazing dairy. These technical studies and ground-level trials provided additional field-tested data to refine the Waste Management Plan (WMP). It is common practice to periodically update a WMP as site conditions change or are better known to ensure the regulators are reviewing the most current information. HDF prepared a summary of the changes for the Wastewater Branch to highlight the refinements. On July 13, 2016, DOW Wastewater Branch acknowledged that its questions on the updates to the WMP had been addressed by HDF, and that WWB had no further comments at that time. The WMP is not a component of the EIS, however, all relevant information in the updated WMP was incorporated into the DEIS to ensure consistency and transparency for public review and disclosure.

There are no known caves or lava tubes found at or adjacent to the dairy farm property. The nearest cave of the Kōloa Lava Tube System, which provides habitat for two endemic cave species, the Kaua'i Cave Wolf Spider and the Kaua'i Cave amphipod, is located 0.75 miles from the dairy farm property. There is no evidence of lava tubes or caves on the property, and no such features have been reported for the area near the HDF site. No cave invertebrate species will be affected by the dairy farm.

Based on hydrological knowledge derived from all drilled wells analyzed by Nance, the downslope movement of ground water from below the pastures toward the habitats of listed arthropods will not reach into the referenced habitats. Recognizing that the food supply of the wholly saprophagous amphipod is organic matter derived from roots and other decaying plant debris, and since nitrogenous and phosphoric nutrients will promote plant growth, their effects, if anything at all, can be expected to expand the food supply in this oligotrophic subterranean ecosystem.

Richard DeMarco
January 3, 2017
Page 2 of 2

Healthy cows are a priority for HDF, and antibiotics as prescribed by a licensed veterinarian may be used from time to time, to ensure cows remain healthy and are treated humanely. Guidelines set by Food and Drug Administration (FDA) will be followed to avoid any antibiotic adulteration of milk. Additionally, HDF will routinely conduct laboratory tests on milk for any trace of antibiotic residue. HDF will not treat cows with bovine growth hormones (rBST or rBGH).

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner



Hawaii Dairy Farm
Group 70
Department of Health

July 20, 2016

HDF, DOH, Group 70

I am very upset and disappointed by your failure to respond to the comments in my letters that you requested and received from me in February of 2016. Please answer my current questions, which were not significantly addressed in your DEIS.

1. The HDF ad says that you will protect the water resources in Mahaulepu. How will adding an eventual herd of 2,000 cows with an out put of 150 tons of manure per day, help to protect the already polluted stream, where people go for recreation.
2. As per the EPA, Daily consumption for the herd will be 3 million gallons of water taken from our water supplies. Can you possibly think that this is a fair exchange?
3. You originally stated that you were following the New Zealand Model for the farm. Now we hear that you are modeling the proposed dairy after "the Concord Plan" what is the "Concord Plan"? Where is it being implemented? Please give me the contact information of the person in charge.
4. What proof do you have that our wells and water sources will be protected.
5. What makes you think that there will be no impact on home and resort values in the area? Your DEIS does not contain a sufficient Economic Impact Study, considering that 150 tons of manure will be accumulating and compounding daily. A professional appraisal estimates that surrounding homes at \$3 billion. When devalued by the negative effects of the dairy, property tax revenue will be greatly reduced. So, the taxes in other parts of the island will need to be raised. Also an estimated 2,600 jobs down wind of the dairy are expected to be affected by the biting flies.
6. The \$600,000 in tax breaks that you hope to get will definitely not be off set by the \$51,000 that you will claim that the County will receive. Definitely an economic impact, but no mention in your DEIS.
7. In similar feedlot operations in other areas, the communities are stuck with the destruction that is caused by these industrial animal operations. These mega-farms take resources from their locations, while buying their supplies from large suppliers in other areas, and giving nothing to the local economy.
8. Why is there no mention in your DEIS of any concrete steps that you plan to take to mitigate air-born, water-born, or bug carrying contaminants, along with the economics of these issues? Why does the DOH Refuse to post signs at Mahaulepu Beach?
9. So how can you even think of polluting/or permitting an industrial sized dairy in a location that threatens our livelihood and an island treasure such as Mahaulepu?

DIANE DE VRIES
2597 KALOKE RD.
KALAHUE HI
96741

With all the ag land on Kauai, it is totally unconscionable to start an industrial dairy in an area with clay soil, in close proximity to our wells, and in this irreplaceable area. Certainly with all of your wealth and influence, you can find a more suitable location.

I look forward to each of your replies,

Sincerely,



Diane de Vries

Enclosures: February letter to HDF, Kauai DOH, Group 70
Post Office Proof of your receipt of my letters

Hawaii Dairy Farm
Department of Health
Group 70



February 18, 2015

HDF, Department of Health, and Group 70

I think that locating a mega-dairy above the beautiful pristine area, Mahaulepu will be an irrevocable mistake! Here are my objections to HDF's plan that includes an eventual herd of 2,000 dairy cattle. This affects me, because I live on the South Shore, and I believe it will affect all of Kauai.

Because of the amount of waste and the unproven waste management system that HDF plans to use, I believe that the estimated 51 million Lbs of wet manure and 600,000 gallons of urine over a 6 months period, will be an uncontrollable amount, regardless of the effluent ponds, which other mega-dairy companies have found to leak. The runoff will eventually drain into streams that run into the ocean and will cause irrevocable damage to the fragile coral colonies that are currently struggling to survive there. Mahaulepu, and Popu Beach, which are considered world class attractions and known for good swimming, will be ruined - lost forever.

The state of Hawaii is devising a policy that will mandate that all Kauai residents must convert to septic systems, in order to protect the waters that surround the island. Imagine the damage from run-off from 2,000 cows, should HDF's system fail. An estimated 51 million Lbs. of wet manure and an unthinkable 600,000 gallons of urine over a six months period, would find its way into our ecosystem. Also the National Tropical Botanical Garden, which is located on the South Shore and extends to the ocean, is home to thousands of rare plants in carefully controlled Microsystems, could be lost forever. Certainly there is some other place, possibly on a bigger island, for an experimental mega-dairy.

Considering the economic wellbeing of the community, imagine the impact of biting flies and dairy stench on the visitor industry, which is the largest business enterprise in the South Side economy. No more dining on restaurant lanais, strolling to shops, sitting on hotel balconies, walking on the beach, watching the sunset, golfing at the Grand Hyatt. Visitor services of many kinds will no longer be able to make it.

So, it won't take long for the travel websites to "get wind" of "the big problem on Kauai". Tourism, upon which we rely will be a thing of the past. Just when we were getting a handle on unemployment, hundreds of visitor industry workers will be without work. This would be disastrous for a small island, and could result in more burglaries as people are unable to find work.

Housing values would be sure to drop. People's life savings down the drain - all because a billionaire is unwilling to look at relocating his business venture. Home values in other areas located near mega-dairies have suffered.

As stated at the EIS presentation on Feb. 19th 2015, HDF plans to leave a large portion of excrement on the ground to fertilize the feed grass. This would be on clay soil, and would it would eventually find its way to streams, the ocean, and also into near by wells. Two of these are the drinking water sources for the town of Koloa, and area of Lawai. HDF makes no mention of the proximity to the wells in their reports. This problem of contamination would certainly be heightened during a hurricane or even a big storm, such as Kauai residents refer to as "Forty Days and Forty Nights" that we experienced in the past. Even small storms could result in contamination.

Our wonderful world class environment is sure to be degraded by the addition of mega amounts of Methane gas, effluent run-off, and trampling cattle hooves. Also in need of consideration is the extremely rare Blind Cave Spider, one that has developed without eyes, and lives only in a cave on the Mahaulepu coast line. This extremely rare creature is currently being studied by scientists. Disturbing it's ecosystem and the special conditions that it needs to thrive, would result in a huge loss to all of Kauai. Fresh and costal waters that we have respected need to be kept in good condition and out of harm's way.

Our already over burdened roadways will surely be impacted by tanker trucks carrying milk for export from of Kauai. No plan to handle this in the HDF report. It seems that off island business owners are not really concerned with how their business impact our small island.

As per the above stated examples, an experimental mega-dairy is inappropriate for the Mahaulepu area. HDF seems insensitive to this fact, and to the realization that their business is not welcome at this location. The New Zealand Mega-Dairy Model is reportedly a huge failure. We don't need a mega-failure on Kauai.

Sincerely,

Diane de Vries

Diane de Vries

PS Form 3811, February 2004
Domestic Return Receipt
(Transfer from service label)

2. Article Number
7014 2200 0001 4470 1488

3. Service Type
 Registered Mail
 Certified Mail
 Registered Mail
 Return Receipt for Merchandise
 Restricted Delivery (Extra Fee)
 Insured Mail
 C.O.D.

4. Restricted Delivery? (Extra Fee)
 Yes
 No

1. Article Addressed to:
 GFORD INTERNATIONAL
 925 BETHEL ST
 5TH FLOOR
 HONOLULU, HI 96813

D. Is delivery address different from item 1? Yes No
 If YES, enter delivery address below:

B. Received by (Printed Name)
 LAUREL TAYLOR

C. Date of Delivery
 2/11/15

A. Signature
 [Signature]

SENDER: COMPLETE THIS SECTION

PS Form 3811, February 2004
Domestic Return Receipt
(Transfer from service label)

2. Article Number
7014 2200 0001 4470 1472

3. Service Type
 Registered Mail
 Certified Mail
 Registered Mail
 Return Receipt for Merchandise
 Restricted Delivery (Extra Fee)
 Insured Mail
 C.O.D.

4. Restricted Delivery? (Extra Fee)
 Yes
 No

1. Article Addressed to:
 STATE OFFICIALS
 DEPT. OF HEALTH
 1250 PUNCHBOWL ST.
 HONOLULU, HI 96813

D. Is delivery address different from item 1? Yes No
 If YES, enter delivery address below:

B. Received by (Printed Name)
 A. STAIRMAN

C. Date of Delivery
 2/11/15

A. Signature
 [Signature]

SENDER: COMPLETE THIS SECTION ON DELIVERY

PS Form 3811, February 2004
Domestic Return Receipt
(Transfer from service label)

2. Article Number
7014 2200 0001 4470 1495

3. Service Type
 Registered Mail
 Certified Mail
 Registered Mail
 Return Receipt for Merchandise
 Restricted Delivery (Extra Fee)
 Insured Mail
 C.O.D.

4. Restricted Delivery? (Extra Fee)
 Yes
 No

1. Article Addressed to:
 HAWAII DAIRY FARMS
 P.O. BOX 1690
 KOLOA, HI 96956-1690

D. Is delivery address different from item 1? Yes No
 If YES, enter delivery address below:

B. Received by (Printed Name)
 J. GARMAZ

C. Date of Delivery
 2/11/15

A. Signature
 [Signature]

SENDER: COMPLETE THIS SECTION



January 3, 2017

Diane deVries
3597 Kaloke Road
Kalaheo, Hawaii 96741

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawaii
Response to Comment on Draft EIS

Dear Diane deVries:

Thank you for your email of July 21, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Unfortunately, opponents to the dairy have contradicted findings of HDF's Hawai'i-based expert consultants by using wildly different assumptions and, in several cases, incorrect data. In most cases, the assumptions are based on poorly-managed conventional feedlot dairy operations on the mainland. HDF stands by the environmental analyses conducted for the EIS, which uses reasonable and diligent processes to disclose all probable impacts and demonstrates the dairy will not create nuisance impacts downstream or beyond surrounding agricultural lands.

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainageway (totaling 70-feet in width) to keep cows away from surface waters.

PRINCIPALS

Francis S. Ode, AIA, AIA, ASIO, LEED AP
Norman G.Y. Hong
AIA

Sherly B. Saaman
AIA, ASIO, LEED AP

Roy H. Nihel
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucolla
AICP, LEED AP

James L. Stone, AIA, AIA, LEED AP

Katherine M. MacNeil
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hidb
AIA

Diane deVries
January 3, 2017
Page 2 of 5

Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Waioipili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waioipili Ditch will be improved by active management of the dairy site.

The amount of potable water to be used for the committed herd size is one-hundredth of that stated in your letter. Per Sections 4.16 of the EIS, once fully operational at the committed herd size of 699 mature dairy cows, the dairy will utilize 30,000 gallons per day (gpd), which is 0.03 million gallons per day (MGD) of potable (drinking water quality) water from groundwater provided through an on-site well. Should HDF decide, in the future, to expand to the contemplated herd size of up to 2,000 mature dairy cows, potable water demand will increase to 84,800 gpd (0.085 MGD) (EIS Section 4.22). These demands are a small fraction of the 3 MGD produced by the on-site, existing Māhā'ulepū 14 well during the sugarcane plantation era. All potable water used as wash water will be re-applied to pasture and thus remain a part of the evapotranspiration cycle. Long-term groundwater supply impacts are not anticipated to be significant.

We believe you are referring to the Cornell Net Carbohydrate and Protein System (CNCPs) model. This model incorporated U.S. standards and best management practices for a world-class, environmentally sound design, and allows for an accurate accounting of manure and nutrients specific to the type of cow and type of grass to be used at HDF. Ground-level trials at the HDF site provided additional field-tested data to refine the Waste Management Plan (WMP). It is common practice to periodically update a WMP as site conditions change or become better known to ensure the regulators are reviewing the most current information.

HDF updated its 2014 WMP for up to 699 mature dairy cows to reflect refinements identified during the planning process and field-tested data. Review of a Waste Management Plan is a function of the Wastewater Branch of the Department of Health (DOH) in accordance with the *DOH Guidelines for Livestock Management*. DOH Wastewater Branch has reviewed the updates, and verified that comments have been sufficiently addressed. Waste management plans are prepared in accordance with NRCS practices and by qualified Technical Service Providers (TSP). The TSP for the Nutrient Balance Analysis was Red Barn Consulting, Inc., as shown in Appendix D (EIS Volume 2), Nutrient Balance Analysis, and Chapter 8 of the EIS, Preparers of the EIS.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 Geology of Māhā'ulepū and Vicinity displays the volcanic geological history of the area.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhāulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

Comments by KipPatrick about the adverse economic impacts of the dairy appear to be based on nuisance parameters and footprints of conventional feedlot dairies found on the mainland, not on those of the planned Dairy which will be a modern facility that uses rotational pasture-grazing. Results of technical studies presented in this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort and residential areas. The review of property values adjacent to beef cattle operations in the Kōloa region reveals newer homes with large square footage in a luxury residential community with 2016 assessed values of \$1,297,150 per lot, to \$2,893,100 per lot with a home. The proposed dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area.

Successful pastoral dairies exist at numerous locations in New Zealand, as well as suitable farming regions in the United States. Several rotational grazing dairy operations located in Florida and Georgia operate successfully, with farms containing over 2,000 animals. Successful rotational grazing dairies also exist in Maryland, North Carolina, and Missouri. Numerous articles and publications on rotational grazing dairies are cited in Progressive Dairyman and other industry news sources.

Complaints from the public citing the high levels of enterococcus in Waipii Ditch and public concerns about the proposed dairy prompted the DOH Clean Water Branch (CWB) to conduct a "Sanitary Survey" of the Māhāulepū sub-watershed and the adjacent Waikomo watersheds. DOH CWB conducted water sampling within the Waipii Ditch and areas upstream, and initiated a series of investigations into water quality issues. The Sanitary Survey findings resulted in an expression of concern by DOH CWB that the number of injection wells and cesspools in the adjacent Waikomo watershed, which includes Kōloa and Po'ipū, are impacting the waters of the Waipii Ditch.

The geological and hydrological composition of the highly urbanized Po'ipū/Kōloa watershed differs from Māhāulepū sub-watershed, resulting in different rates of groundwater movement. Groundwater velocity under the proposed HDF site is on the order of 1.2 feet per day, while the groundwater under the Po'ipū-Kōloa watershed area averages 10 feet per day. The faster movement of groundwater reduces the attenuation period of bacteria, viruses, and nutrients that occurs with movement through soils.

The Part 1 Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors to the fecal indicator bacteria (FIB) levels in ditches running through Māhāulepū Valley. CWB noted that Waipii Ditch is a man-made drainage ditch on private property, and is not an inviting recreational body of water utilized by people.

Further testing is needed to more clearly identify whether the source(s) of FIB is human or animals, and DOH CWB has partnered with a University of California laboratory to more definitively determine the source of the fecal contamination in Waipii Ditch. Results will be published as Part 2 of the Waipii Ditch Sanitary Survey. The *Waipii Ditch Sanitary Survey, Kauai Part 1* can be accessed on the DOH Clean Water Branch website under "Library" (<http://health.hawaii.gov/cwb>).

The Hawai'i Dairy Farms project emerged from a group of partners and affiliates, including Grove Farm, Finistere Ventures, Kamehameha Schools, Maui Land & Pineapple and Ulupono Initiative. The group conducted grass trials statewide to determine the best site for a rotational-grazing pasture based dairy. In addition to the grass trials, HDF coordinated with landowners of agriculturally-zoned lands in the State, as well as the Department of Agriculture, the Agribusiness Development Corporation, and the Trust for Public Land. The broader team identified, toured and evaluated six parcels of sufficient size: two on O'ahu; two on Hawai'i Island; and two on Kauai. Kauai was found to be the optimal location, as it met all the operational requirements for pasture-based dairy:

- Relatively flat, contiguous acres to move cows with minimal stress.
- Soils suitable to efficiently utilize applied nutrients for growth of forage,
- Adequate water for irrigation and operations,
- Suitable climate conditions for animals and grass growth,
- Agricultural-zoned land available for 20 years or more of sufficient acreage to support an economically viable dairy, preferably IAL, and
- Access to required operational support elements (trucking, pasteurization, work force, etc.).

In response to comments on the Draft EIS, Ulupono Initiative again searched for agriculturally-zoned land with potential long-term availability that may have become available in the past few years. An additional 1,300 acres of Grove Farm property on Kauai in the Māhāulepū area were recently vacated by Pioneer Seed Company. These fields are closer to resorts and residences, and do not provide further benefit to the project or community than the HDF site evaluated in this EIS. Alexander & Baldwin announced in January 2016 that Maui lands in sugarcane will be transitioned to diversified agriculture in the future. However, water rights and access for diversified agriculture must be settled through a forthcoming process, and water availability is currently unknown. Thus Ulupono Initiative, which conducted the research, is unaware of any new property meeting the requirements for a pasture-based dairy that has become available since its initial evaluation.

Soils in the Māhāulepū sub-watershed are formed by the poorly permeable alluvium that covers the valley floor. Alluvium is highly weathered lava that forms silty clay layer, which is described as "poorly drained". The classification of soils as poorly drained indicates a relatively slow rate water movement within soil and to surrounding areas. Poorly drained is not an indication of low or poor infiltration. Infiltration refers to the ability of water to enter the soil surface, whereas "drainage" refers to the movement of water within or from the soil profile. This slow movement allows for attenuation (reduction) of bacteria, pathogens, and nutrients from manure.

Section 4.3 of the EIS characterizes soil conditions, and anticipated impacts from effluent and supplemental nutrient-application.

Diane deVries
January 3, 2017
Page 5 of 5

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

3868 Mamaki Street
Koloa, HI 96756

Wednesday, July 20, 2016

Jim Garmatz
Hawaii Dairy Farms, LLC.
PO Box 1690
Koloa, HI 96756



Dear Mr. Garmatz:
I am writing in hopes of alerting you to the myriad threats to public safety if the Hawaii Dairy Farms, LLC. is allowed to build and operate the proposed factory farm at the Maha'ulepu site. This pristine area is a routine recreation destination for hundreds of visitors and locals. On any day of the week throughout the year it is hard to find adequate parking, which is undeveloped, because so many people go there to enjoy a piece of undeveloped tropical splendor and some of the best snorkeling in the state. I'm sure you, yourself, have taken time to see what all the fuss is about and found an incredibly beautiful recreational setting.

If this proposed dairy is developed the entire area, not only Maha'ulepu, but much of the south shore, will become dangerously polluted and rendered unusable for recreation. The DEIS has conflicting information all through the second volume, but especially concerning the water table, and it is evident from the facts provided that all of the water supply for Koloa will be contaminated with dangerous levels of nitrates. Further, the marine eco systems will be poisoned by the increased levels of nitrates. All these statements may be verified in the draft Environment Impact Statement current under review by Friends of Maha'ulepu and other concerned citizens.

My husband and I have been residents of the south shore area of Kauai for eleven years and have enjoyed riding our bikes down the dusty road to the beaches and archeological dig located in Maha'ulepu area. Culturally, this region is highly significant. Botanically, the native plant nursery is productive, growing culturally significant plants to reforest the Makawahi Caves archeological dig area within Maha'ulepu. The proposed dairy is directly upstream from all these precious and active positive impact operations. If the dairy is allowed to operate, all these positive ventures will be corrupted by the deluge of pollution produced by the introduction of 2000 cows, with all the urine and feces they produce.

Please consider the facts and step up to relocate the Hawaii Dairy Farms. This proposal honestly does not make any sense, and demonstrates no logical thinking.

Sincerely,



Myra VanOrnum Deyden

Myra VanOrnum Deyden
January 3, 2017
Page 3 of 3

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 24, 2016

Mr. Jeff Overton
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813

Subject: Hawaii Dairy Farms
Environmental Impact Statement Preparation Notice Response
Draft Environmental Impact Statement Comments
Maha'ulepu Road
Kaua'i, Hawaii

Dear Mr. Overton,

I am in receipt of Group 70's reply to my February 2015 letter commenting on your Environmental Impact Statement Preparation Notice. My fears are not assuaged and in fact are heightened exponentially by information flowing in from experts versed in the overwhelmingly challenging issues presented by CAFOs as well as those conducting research in the area. My questions and concerns were not directly addressed; I got a letter that in most cases generally addressed the issues raised.

That Group 70 developed HDF's plan AND did the EIS is a source of unmitigated concern. That your months of research and analysis failed to unearth any negative impacts of an operation of this size is preposterous. Although the literature is rife with the huge challenges associated with industrial sized dairies, as the consulting firm that took on the task of developing the plan it probably seems impossible to point out to HDF or the public, any of the health, economic, etc. consequences of this type of operation.

"The Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy". Group 70 response, pg.13.

*****Since 2014 water samples taken from the Waipii Stream have consistently revealed astronomically high levels of fecal bacteria counts according to tests conducted by DOH and Surfrider Kauai Blue Water Task Force. Normal would be less than 130 per 100 ml on a single day and a geometric mean of less than 35. Numbers have been as high as 28,000. Regardless of the source of the contamination - biosolids waste site, etc. - no operation of any size should be developed in the valley. Everyone responsible needs to locate the source and resolve this crisis. If in fact HDF has any concern for the environment and its preservation, why is it not actively pursuing a resolution to this glaring problem? Is it because the solution will be costly and most certainly delay any further dairy development? So HDF has been exonerated by DOH; it is still the current leasee and it seems incumbent on a



responsible corporation to address this dangerous health/environmental issue. Why are you choosing not to tackle the problem before proceeding further?

"CWB noted that Waioipili Ditch is a man-made drainage on private property and is not an inviting recreational body of water utilized by people". Group 70 response, pg. 14

"State DOH surveys and environmental sampling/testing program is not utilized recreationally by bathers." HDF VOL. 1 DEIS pgs. 6 - 23

****There is documented evidence, including photos taken by Eileen Kechioian and delivered to DOH, of adults and children swimming and wading in the Waioipili estuary where its waters pool on the sand before flowing into the ocean water. It is also a sustenance fishing ground; the area has been used by locals and visitors alike for many activities. Refer to the To-Hawaii.com site which describes the Maha'ulepu area as "pristine, beautiful and UNDEVELOPED". I'll insert my own sentiments here: We have the responsibility to keep it this way !! More comments from this same site: "Near Gillin's Beach is a site known as the Maha'ulepu cave, which is actually a sandstone sinkhole and an ongoing archaeological project. It is sometimes gated off. On Sundays, there is an interpreter on site who explains what it is and how it was used as an ancient habitation site. Ancient artifacts have been found here." "Windsurfing is a popular activity here (Kawailoa Bay)". "The area (Ha'ula Beach) is mainly frequented by local fishermen and occasionally by some horseback riders." One comment under the Maha'ulepu Beaches Overview: Good area for exploring, hiking and beachcombing. From another site, Kaula Beach Scoop, Gillin's Beach: Boogie boarding and windsurfing are popular recreational activities on this beach." My comment: The bitter irony of the situation is lost on no one. The dairy will destroy the area most loved by the eponymous Elbert Gillin, longtime supervising engineer at Grove Farm. From The Gillin Beach House site: Walk the waterline, explore the reefs, swim in the lagoon. Snorkel, surf, windsurf, hike or simply relax on the porch.

Has your research turned up evidence of this area not being used recreationally?

"Irrigation water supply is provided to the farm from Waita Reservoir." Group 70 response, pg. 3

"In strong language, the Hawaii'i Supreme Court described the public trust doctrine as "the right of the people to have the waters protected for their use (which) demands adequate provision for traditional and customary Hawaiian rights, wildlife, maintenance of ecological balance and scenic beauty, and the preservation and enhancement of the waters..."

"For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including land, water, air, minerals and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State. All public natural resources are held in trust by the State for the benefit of the people." HAWAII'S THOUSAND FRIENDS, Public Trust Doctrine Symposium section

Water, water, water. A large part of my concerns are about water and I think it still fair to ask why this proposed operation is entitled to draw from Waita - this was an unanswered question. The highest court in the state has confirmed what is written in our constitution: That water is to be protected for use by the people. In the same vein we are entitled to protection from contamination of our drinking wells by any proposed operation, for any reason. We want guarantees of protection of our waters from any and all contamination and unfair usage. Please provide this.

Group 70 response, pg 3, "The effluent storage ponds....."

What plans are there for managing effluent pond levels in storm season? For safe drainage of the primary and secondary ponds without contamination of our aquifers? How will effluent be prevented from leaching into ground water ?

Diseases - salmonellosis, leptospirosis, mastitis, enzootic bovine leucosis, John's Disease can be found in raw effluent and milk. It's advised that pastures should not be grazed for at least three weeks after effluent spraying. (Victoria State Gov. Dept. of Environment and Primary Industries). Proposed conditions are already crowded. How will HDF manage proper rotational grazing - ie, three weeks allowance post-spraying - to ensure herd health? What preventive measures are there in your plan for the above mentioned diseases?

HDF Volume 1 DEIS pgs. 3-18 "Should animals die at the site, they will be buried at a designated area....." ****. What provisions are being made to ensure that pathogens from carcasses do not contaminate the ground water and that they are not unearthed in storms? Where will the burial site be located?

"The Maha'ulepu property is not known to experience flooding conditions." Group 70 response, pg. 6

A letter sent to you in February 2015 by William

Schimmelfennig states that he has seen the whole lower section under a foot of water back in his hunting days. In the 80's a huge waterfall cascaded off Mt. Haupu - the water went to the area of the proposed dairy.

In the DEIS overview it is stated that "The rotational-grazing method utilizes 100 percent of the cows' manure as fertilizer for pasture grass...." HDF's July 2014 plan states that each cow is expected to deposit at least 143 lbs. of wet manure per day - the initial herd will deposit 3 million lbs. per month. ****-How could all of this massive amount of manure possibly be used as fertilizer ? How does HDF plan to prevent runoff and leaching into the ground water, inevitable occurrences?

"Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM)".

Per Dr. Pete Goodell, IPM advisor with the Statewide IPM Program University of California Cooperative Extension, one of the keys to IPM is its dependence on information. He calls it an information intensive approach that requires scientific based knowledge as well as years of experience in a particular area of expertise

and discipline. It is stated that efficacy increases by using a combination of methods - biological control (support natural enemies), chemical control (pesticides), cultural controls (reduce pest establishment, reproduction & dispersal & survival, mechanical & physical controls (traps, etc.) ***** Does the dairy have on staff someone who is knowledgeable and qualified to administer the IPM program? Does HDF plan to use chemical controls? If yes, what kinds of chemicals do you plan to use and what safeguards are you planning to prevent them from leaching and contaminating the aquifers?

Dr. Kirby C. Stafford III, Vice Director, state entomologist at the Connecticut Agricultural Experiment Station writes in part in the 'Fly Management Handbook, A Guide to Biology, Dispersal, and Management of the House Fly and Related Flies for Farmers, Municipalities and Public Officials, "A great source of flies can be neglected piles of manure on a farm prior to application. If daily or immediate application is not feasible, proper storage at the delivery site is essential." (Farm and Animals, pg. 16). ***** Does HDF have plans for a proper storage facility for manure waiting to be applied to pasture land? This is a vital step in fly management.

Purdue University, Purdue Extension, CAFOs, Contained Animal Feeding Operations - Insect Considerations, Susan Steeves - Agricultural Communications, Ralph Williams - Entomology
"Generally flies are just pests for animals and people, but large numbers of the insects can agitate livestock. When animals are overly stressed, their weight may drop, affecting meat quality and quantity. In the case of chickens and dairy cows, egg and milk production can be significantly affected." *****The cows will be the primary target of the flies and thensans barriers they'll come after humans. There is mention of dung beetles and egrets for fly control. Have you calculated and will HDF be able to provide the millions of dung beetles and however many egrets that will be needed to assure herd and human health? We otherwise face billions of flies wreaking havoc in the South Side and beyond. Visitors and residents alike will be gravely affected. What are the chances of visitors returning after suffering from painful bites while trying to enjoy all that the South Side has to offer? Add to that noxious odors and polluted waters and we have a Kafkaesque scenario in paradise.

Amy Hennessey, HDF's director of communications, states in her letter published in the 7/24/16 Garden Island that comparing their pasture-based, rotational grazing model "is like comparing pineapples to mangoes." ***** I'm guessing she means theirs is a more humane model but will there be less manure dropped on the ground with their model? Will there be fewer flies spawned? Will there be less odor? Less air, water, ground contamination? Less land devaluation? HDF's initial herd will be comprised of 699 cows. Will the name of the model upon which the dairy is based change any of the above?

Please provide us with a detailed economic impact study of how the dairy will

affect the South Side and the island. My concerns about job losses and property devaluation were not addressed.

"As such, the dairy will notdiminish property sales or property values in the area." Group 70 response, pg. 11

The following excerpts are from an article entitled 'Concentrated Animal Feeding Operations and Proximate Property Values', written by John A. Kilpatrick and published in The Appraisal Journal, July 2001. He was a partner and senior analyst with Mundy Associates, LLC, an economic, market and valuation firm specializing in complex real estate matters headquartered in Seattle, WA at the time this article was written. Dr. Kilpatrick is now CEO of Greenfield Advisors, a 34-year-old real estate advisory firm and one of the country's leading experts in the area of real estate valuation. He and his firm have worked on property damage disputes connected to everything from the Exxon Valdez to property damaged by Katrina to the BP oil spill to real estate lawsuits concerning Chinese drywall.

"Concentrated animal feeding operations (CAFOs) are often called "feedlots." They may include facilities where animals are raised or where animals are brought for slaughter. The common denominator is a large, perpetual inventory and density of animals.

Currently, the USDA and the EPA estimate that livestock in the United States produces 130 times the amount of manure produced by the entire human population of this country. Spills from CAFOs have killed fish in several states; phosphorus in land and water has been correlated with livestock density; and manure has caused eutrophication and degradation of U.S. waterways.

The trend toward CAFOs has been rapid and pronounced in the U.S., but federal and state laws generally are considered to have some gaps. In addition to water quality issues resulting from manure and waste run-off, these facilities attract flies and other insects and pests that parasitize the insects.

CAFOs AND THE VALUE OF NEARBY REAL ESTATE

A CAFO impacts the value of proximate properties to the extent that the CAFO is viewed, in the market, as a negative externality. As an externality, it is typically not considered to be economically "curable" under generally accepted appraisal theory and practice. Some of this loss in value may be attributable to stigma, when there are unknowns and risks associated with ownership of the property.

IMPAIRMENT AND VALUE - AN OVERVIEW

From an economic perspective, the rights enjoyed by a fee-simple owner fall into three categories:

1. Right of use and enjoyment
2. Right of exclusion
3. Right of transfer

An impairment often places a restriction on the right of use without some economic compensation. This is illustrated in the potential restrictions that may be placed on

the use of real estate due to a physical impairment and can thus limit the property to something less than its highest and best use. For example, odor or flies from a nearby CAFO will restrict the use and enjoyment of impaired property without compensation.

Physical impairment, such as the odor or flies, in effect is a trespass on property rights and violates the right of exclusion.

EFFECTS OF NEGATIVE EXTERNALITIES ON PROPERTY VALUES

Real estate economics and appraisal practice uniformly recognize that many externalities such as contamination may have a negative impact on property values. For example, appraisers are required by the Uniform Standards of Professional Appraisal Practice (USPAP) to consider the impacts of such contamination in the value estimation process.

OTHER PROXIMATE CONTAMINATION ISSUES

The issue of value loss for proximate contamination or other impacts has been considered in a number of studies, and includes how the citing of an externality, such as a CAFO, can impact nearby values. (Dr. Kilpatrick cites seven case studies that illustrate the impact of CAFOs on property value - excerpts continue below.)

They found a statistically significant pricing impact related both to the existence of a CAFO as well as the distance from the CAFO. In other words, not only does a CAFO have a significant impact on property value, but the nearer the CAFO, the greater the impact.

(In the University of Missouri study.....) An average vacant parcel within 3 miles of a CAFO experienced a value loss of about 6.6%. However, if that parcel was located within one-tenth of a mile from the CAFO (the minimum unit of measure in the study) and had a residence on it, then the loss in value was estimated at about 88.3%.

(In the Pasco, Washington Case Study.....) A 309-acre family farm that had been operated for many years produced alfalfa, asparagus, corn, apples, peaches, nectarines, cherries, melons, and a range of garden produce. A CAFO was adjacent to the residence (about 1/4 mile away), and consequently the farm product was impacted by dust, flies, fly fecal matter and odor.

SUMMARY AND CONCLUSIONS

The above suggests that the establishment of a CAFO may result in value diminution to other nearby properties. The amount of the value loss is typically an inverse function of distance (closer properties diminish more), a function of property type (newer, nicer residences lose more), and a function of property use (farm will lose value due to diminished productivity and comparative marketability to other farm lands). While the appraisal profession has only begun to quantify the loss

attributable to CAFOs, it is clear from the above case studies that diminished marketability, loss of use and enjoyment, and loss of exclusivity can result in a diminishment ranging from 50% to nearly 90% of otherwise unimpaired value.

While there is little disagreement that a CAFO has an impact on surrounding property values, the degree of impact is clearly a function of the interplay of these factors.¹¹

Dr. Kilpatrick, one of the most highly respected experts in his field, was the guest speaker at a public forum on Kauai recently. His work spans continents, not states and his knowledge is equally broad.

Regardless of the model upon which the dairy is based, we deserve to know the economic impact of this operation. And if HDF is in fact committed to doing the right thing, this is the next step.

Thank you for your attention to these matters.

Sincerely,

Ellen Beata

CC: Ms. Laura McIntyre
State of Hawaii, Department of Health
1250 Punchbowl Street
Honolulu, HI 96813

Hawaii Dairy Farms, LLC
P.O. Box 1690
Koloa, HI 96756-1690

Examples of Properties Devalued by Factory Farms

Studies & Reports

In describing the economic costs of CAFOs to rural communities, the recent Union of Concerned Scientists report stated that "because property values are reduced near CAFOs, the residential tax base may suffer as well."

~ Doug Guinan-Sherman, Union of Concerned Scientists, *CAFOs Uncovered: The Untold Costs of Confined Animal Feeding Operations*, at 61 (April 2008).

The recent Pew Commission report on industrial farm animal production described the various negative impacts that factory farm facilities have on the environment, public health, animal welfare, and rural communities. The report did not directly address declining property values, but did note the negative influence factory farms have on rural social capital and the rights of neighbors to enjoy their own properties.

~ Pew Commission on Industrial Farm Animal Production, *Putting Meat on the Table: Industrial Farm Animal Production in America*, at 40-49 (April 2008).

A 2012 report by Dr. John Kilpatrick of Greenfield Advisors evaluates a Colorado property and the impacts a nearby CAFO has on its value. The report explains that the principles within the report would be applicable to the appraisal of any property near a CAFO.

~ John A. Kilpatrick, *In re: Delta County* (Aug. 22, 2012).

This report was prepared to assist local boards of health who have concerns about CAFOs in their communities and to help them "understand their role in developing ways to mitigate potential problems associated with CAFOs." The report states that "[t]he most certain fact regarding CAFOs and property values are that the closer a property is to a CAFO, the more likely it will be that the value of the property will drop." It also noted that "[d]ecreases in property values can . . . cause property tax rates to drop, which can place stress on local government budgets."

~ Carrie Hribar, National Association of Local Boards of Health, *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities*, at III, 11 (2010).

A technical report for the Pew Commission report discussed various CAFO studies and found that: "Industrialization of animal agriculture leads to the reduced enjoyment of property and the deterioration of the surrounding landscape, which are reflected in declining home values and lowering of property tax assessments. Recurrent strong odors, the degradation of water bodies, and increased populations of flies are among the problems caused by CAFOs that make it intolerable for neighbors and their guests to participate in normal outdoor recreational activities or normal social activities in and around their homes."

~ Pew Commission on Industrial Farm Animal Production, *Community and Social Impacts of Concentrated Animal Feeding Operations*, at 31.

The National Association of Realtors has put together a "field guide" that explains what CAFOs are and how they can impact property values. The guide lists several studies and notes that, while a few studies have found a positive impact, "most studies have found a negative relationship between feedlots and property values."

~ National Association of Realtors, *Field Guide to Impacts of Animal Feedlots on Property Values* (Sept. 2013).

In Iowa, one 1996 study found that proximity to a hog CAFO decreased neighboring property values in the following order: 40% within ½ mile; 30% within 1 mile; 20% within 1.5 miles, and, 10% within 2 miles.

~ William J. Weida, *The CAFO: Implications for Rural Economies in the U.S.* 1 (Colo. College & GRACE Factory Farm Project 2004) (citing Padgett & Johnson).

Another Iowa study found that there may be a 1-10% reduction in property values of residences upwind of new CAFO facilities, and that the drop in value "helps explain opposition by rural residents to large-scale feeding operations."

~ Joseph A. Herriges et al., *Living with Hogs in Iowa: The Impact of Livestock Facilities on Rural Residential Property Values* 19-20 (Iowa State Univ. Ctr. for Agric. Dev. Working Paper 03-WP 342 (Aug. 2003)).

A 1999 study in Missouri found that the average loss of land value within three miles of a CAFO was \$112/acre.

~ Mubarak Hamed et al., *The Impacts of Animal Feeding Operations on Rural Land Values* 2 (Cnty. Policy Analysis Ctr., Univ. of Mo., May 1999) (finding that "there is a relationship between proximity to a CAFO and the value of property").

Studies cited by Dakota Rural Action found that property within a 3-mile radius of a CAFO loses 6.6% in property valuation, and property within 0.10 mile of a CAFO loses up to 88% in property valuation.

~ Dakota Rural Action, *CAFO Economic Impact* (June 2006) (citing North Central Regional Center for Rural Development (1999-06), Stepel et al. (1998)).

A Sierra Club study reported that county assessors in at least eight states lowered property taxes for neighbors of factory farms.

~ William J. Weida, *Nutrient Management Issues* (GRACE Factory Farm Project, Apr. 4, 2001) (citing Sierra Club, *Property Tax Reductions* (Mar. 13, 2000)).

A study in Berks County, Pennsylvania evaluated the impact of potential local disamenities on neighboring properties. It found that the impacts of CAFOs on neighboring property values did not vary significantly by species or by differences in the sizes of the operations.

~ Richard Ready & Charles Abdalla, *The Impact of Open Space and Potential Local Disamenities on Residential Rural Property Values in Berks County, Pennsylvania* 1 (Penn. State Univ., Staff Paper No. 363, June 2003).

This study evaluated the influence of proximity to swine facilities on the sale price of residential properties, using a GIS-based hedonic model. The study reported that "[r]esults indicate a negative and significant impact on property value from hog operations." The study also found that the modeling "may be a promising technique for establishing setback guidelines, for assessing property value damages resulting from animal operations, and for evaluating potential property value impacts to surrounding properties when siting a new CAFO."

~ Milla et al., *Evaluating the Effect of Proximity to Hog Farms on Residential Property Values: A GIS-Based Hedonic Price Model Approach*, 17 *URISA Journal* 27, 30-31 (2005).

A Putnam County, Missouri study found a \$58/acre loss of value for properties within 1.5 miles of a CAFO facility.

~ William J. Weida, *The Evidence for Property Devaluation Due to the Proximity to CAFOs* 6 (Col. College & GRACE Factory Farm Project, Jan. 21, 2002).

Three different North Carolina studies, described in a presentation at the University of Kentucky, found that proximity and animal density have significant, negative impacts on the market values of residential properties.

~ Michael Thomas et al., *A Comparison of Three Recent Hedonic Models of Hog Farm Discommodity in Coastal North Carolina: Evidence of Diseconomies of Scale and Brown Zones* (May 2003) (citing studies of Bruton, Ansine et al., and Kim).

A 2008 University of Northern Iowa study analyzed house sales in Black Hawk County, Iowa to determine the effect of hog CAFOs on property values. It found "large adverse impacts suffered by houses that are very close (within 3 miles) to and directly downwind from a CAFO."

~ H. Isakson & M. D. Ecker, *An Analysis of the Impact of Swine CAFOs on the Value of Nearby Houses* 19 (Univ. of N. Iowa Technical Report, July 23, 2008).

A 1996 newsletter from EPA's National Center for Environmental Economics reported on an early North Carolina State University study that used hedonic analysis to make various findings on factory farms and their negative impacts on residential land values.

~ USEPA, National Center for Environmental Economics, *Effects of Hog Operations on Residential Property Values*, 3:12 Newsletter (Dec. 1996).

A recent white paper by the Institute of Science, Technology and Public Policy reported on the negative impacts hog CAFOs have in Iowa, including "marked[] and consistent[]" decreases in land values and quality of life in areas near CAFOs. The report noted a study finding that "[p]roximity to a CAFO can reduce the value of a home by 40%."

~ Institute of Science, Technology and Public Policy, *Concentrated Animal Feeding Operations (CAFOs): Assessment of Impacts on Health, Local Economies, and the Environment with Suggested Alternatives* 3, 6 (post February 2007) (citing study of Park, Lee, and Seid).

Articles

This 2001 article in the *Appraisal Journal* explains how CAFOs can negatively impact proximate property values, and lists several factors that should be considered in valuing those properties.

~ John A. Kilpatrick, *Concentrated Animal Feeding Operations and Proximate Property Values*, 39:3 Appraisal J. 301 (2001).

A 2012 press release reported that property owners in Illinois were awarded a 12.5% reduction in their property value based on the effects of a neighboring swine CAFO. The reduction applied retroactively from the time the CAFO was constructed.

~ CRAPC & ICCAW, *Neighbors of Illinois Swine CAFO Claim Victory in Property Tax Appeal* (Sept. 6, 2012).

A 2007 article in the *Agriculture and Human Values* journal evaluated studies on industrialized farming and community impacts from the 1930s forward. It reported predominantly detrimental effects, including a decline in real estate values for residences close to hog CAFOs.

~ Lobao & Stoffelahn, *The Community Effects of Industrialized Farming: Social Science Research and Challenges to Corporate Farming Laws*, Agric. & Human Values (2007).

In Waseca County, Minnesota, a county assessor designed a "smell location chart" to determine reductions in values of properties near feedlots. Factors in the percentage of reduction allowed included the proximity to the feedlot, the number of animals, and the presence of a manure lagoon.

~ Douglas Clement, *Knee Deep in Feedlot Faeces*, *FoodGazette*, July 2001.

In January 2007, Indiana residents turned out to testify before the state legislature on a CAFO moratorium bill. One woman testified that a businessman was "'driven to suicidal thoughts because he was unable to sell his home after six years because of the odor from a nearby CAFO.'" Another testified that "'[d]ecreased property value because of CAFOs mean [sic] decreased revenue from property taxes, which means less money for our schools.'"

~ Jondi Schmitt, *Hoosiers Voice CAFO Concerns: Proposed Bill Would Put Three-Year Moratorium on Start of Construction*, *South Bend Tribune*, Jan. 30, 2007.

The Indiana House passed a bill in February 2007 that would prohibit new CAFOs within 1 mile of cities, towns, schools, and health facilities. One representative who supported the bill said he "want[ed] the pork industry to grow" in Indiana, but that growth could happen "while having respect to our neighbors." "CAFOs do decrease property values," he said.

~ Niki Kelly, *General Assembly: House Restricts Feed Farms*, *The Journal Gazette*, Feb. 22, 2007.

A Michigan Land Use article reported that a tax tribunal reduced the assessments for properties adjacent to CAFOs. It ordered local officials to reduce the taxable values of at least five rural homes by 35% based on problems with stench from a hog livestock factory, and on "slim sale chances" for the homes.

~ Patty Cantrell, *Michigan Tax Tribunal Recognizes Hog Factory Stench* (Mich. Land Use Inst., Dec. 7, 1999).

This 2004 paper debunked assumptions underlying CAFO-proponent arguments, including those regarding CAFOs and property use. It noted: "CAFOs generate odor, air and water pollution, all of which have a direct impact on neighboring properties. The closer the neighboring property, the more severe the impact is likely to be. . . . The resulting loss of exclusive use by neighboring properties lowers their values and ultimately also lowers the taxes generated from these properties. Suing the offending party for these nuisance activities could potentially compensate the neighboring property owners. To prevent this, factory farming interests have attempted to sponsor legislation to prohibit nuisance suits for agricultural pollution."

~ William J. Weida, *Considering the Rationales for Factory Farming* (for presentation) 10 (Mar. 5, 2004).

Clark County, Illinois established assessment abatements for fifty residential homes around a hog CAFO in the following order: 30% reduction within 1/2 mile; 25% reduction within 3/4 mile; 20% reduction within 1 mile; 15% reduction within 1 1/4 miles; 10% reduction with 1 1/2 miles.

~ William J. Weida, *The Evidence for Property Devaluation Due to the Proximity to CAFOs* 6 (Col. College & GRACE Factory Farm Project, Jan. 21, 2002).

A 2006 article in the *Journal of Ecological Anthropology* recognized the ill effects of factory farms on neighboring properties: "In addition to their negative effects on the local economy and tax base, large corporate operations are the source of environmental issues that threaten the property values of rural and urban residents. This strains the economic base and places higher burdens of taxation on remaining residents."

~ Barbara J. Dilly, *Tax Policy and Swine Production in Iowa*, *United States*, 10 J. Ecological Anthropology 45, 48 (2006).

A Peoria, Illinois newspaper reported that county officials lowered property values for at least 20 people with homes within two miles of a large sow farm and its odor. The tax board decreased assessments by 30% for neighbors with 1 1/2 miles of the operation, and 10% for those within 2 miles of the facility.

~ *Board Smells Lower Land Values near Hog Farm*, *The Journal Star*, May 6, 1998, at A1.

An Iowa paper reported on the results of the University of Northern Iowa study mentioned above. One interviewee said that his neighbor had been offered \$1 million for his land before plans for a hog lot were announced, but that after the announcement, "the would-be buyer walked away." "He lost almost \$1 million right there And it's not necessarily smell. It's psychological They don't want anything to do with them (hog lots) if they see them." Another interviewee, who had recently bought land in the area, said she "would not have bought the house and all the surrounding property . . . at above market value . . . if a CAFO was going to be built a mile away. . . . And to tell you the truth, I'll sell my property at a huge loss to move away if they build these things."

~ *UNI Study: Hog Lot Cuts up to 15% off Nearby Home Values*, Waterloo Courier, Mar. 12, 2007.

A 2006 letter to the Editor in opposition to proposed legislation that would weaken Michigan's environmental laws described the "severe pollution" that CAFOs cause. The author explained that the growing number of CAFOs in Michigan was "threatening our public health, our rural communities and the viability of Michigan's 52,000 farms." She also noted that "[t]he stench from CAFOs has led to reductions in property values of up to 70 percent by the Michigan Tax Tribunal for nearby residents no longer able to enjoy or sell their homes."

~ Anne Witwole Letter to the Editor, *Animal Sewage from Livestock Farms Threatens Communities*, Kalamazoo Gazette, May 15, 2006.

In February 1998, residents of Caribou, Maine petitioned the city council for a temporary ban on factory pig farms. Among concerns were "strong odor from waste, surface and ground water contamination and plummeting property values."

~ Gloria Flannery, *Caribou Councilors Seek Ban on Piggery: Fears of Pollution, Odor Lead to Ordinance Proposal*, Bangor Daily News, Feb. 25, 1998.

In an article summarizing newspaper coverage of concerns about large-scale swine facilities (LSSF) in Illinois, a "distinct undercurrent" of claims against the facilities was that they were "difficult for communities." Specifically, "[s]ources were concerned that LSSF were socially disruptive: they went against traditional community values, destroyed the community's history, violated ethics of neighborliness, and created community conflict. In addition, they were concerned that the community would have to develop infrastructure capacity to handle the effects of LSSF, paying for social services, schools, and health care for migrant workers and cleaning up spills and abandoned lagoons. Those opposed to LSSF also maintained that the large-scale operations had no overall economic benefit for communities because they displaced more jobs than they created, decreased property values and made alternative industries, such as tourism, less viable."

~ A.E. Reiser, *Newspaper Coverage of Controversies about Large-Scale Swine Facilities in Rural Communities in Illinois*, 83-11 J. Animal Sci. (Nov. 1, 2005).

Coverage of the 2007 Food and Family Farm Presidential Summit in Iowa noted that "many neighbors say the [CAFOs] stink up the air and foul the water, devastate their property values, and drive small farmers out of business."

~ Jennifer Jacobs, *Candidates Tout Their Farm Credentials*, Des Moines Register, Nov. 11, 2007.

Cases

In a 2013 decision by the Idaho Board of Tax Appeals, a property owner was awarded a 20% reduction in his residential property assessment due to his property's proximity to a CAFO. As evidence, the

property owner explained that his property was and would be negatively impacted by the CAFO because of dust and odors, impaired views, nearby (or migrating) contamination and disease, loud noises, etc. He also presented an appraiser working paper that summarized CAFO impacts on nearby property values, a summary of a study done in a neighboring county that quantified property value decreases based on proximity to CAFOs, and a real estate broker's letter that estimated a decrease in his property's value of 20-30%. The Board found that the County should have made appraisal adjustments based on these factors, and ordered a 20% reduction relying primarily on the neighboring county study, the appraisal paper, and the real estate broker's statement.

~ *In the Matter of the Appeals of Joe Morton*, Nos. 12-A-1377 & 12-A-1379 (Idaho Bd. of Tax Appeals, April 22, 2013).

In a 1997 Indiana Tax Court case, property owners asserted that a state board did not adequately consider the negative effects a proximate hog operation had on their neighborhood when assessing their property. To support their claim that odors from the operation impaired the enjoyment of their property, the plaintiffs presented two jars of air taken from their yard to the hearing officer. The Tax Court held that the plaintiffs met their burden of proving their assessment was incorrect based on the proximate hog operation's effect on the desirability of their neighborhood. Relevant evidence that the plaintiffs presented included the two jars of air "redolent with swine" (though unopened, the hearing officer conceded they would smell bad), and verbal testimony about how the odor impaired the enjoyment of their property (they were unable to play tennis, open windows, or hang clothes out).

~ *Corey v. State Bd. of Tax Comm'rs*, 674 N.E.2d 1062, 1063, 1065-66 (Ind. Tax. Ct. 1997) (reversing state board's assessment on these grounds).

In a case before Indiana's Court of Appeals that was basically a zoning challenge to a proposed CAFO, some people who lived near the proposed CAFO presented evidence that their property values would decline if the CAFO were built. They presented testimony by their Township Assessor, who said:

The first thing that has to happen if this hog operation goes in, is the neighborhood value will have to be lowered from a good to a fair or a poor [T]here's some houses like Flyms [sic], Bowmans and Jerry Marsh's, David Helt's there's some of them that that the Sexton's house, there's two of them there that are pretty new houses, Steve Bowman's sister just built a new house up there. I wouldn't be surprised if they wouldn't drop 30 percent, I don't think it would be out of the question. So the property values will decrease in this area.

The Court held that the testimony was enough to show that the people near the proposed CAFO would "suffer a pecuniary loss" if the CAFO permit were granted.

~ *Sexton v. Jackson County Bd. of Zoning Appeals*, 884 N.E.2d 889, 893-94 (Ind. App. 2008).

In 2002, a Nebraska Court held that a tax commission should have considered the effect of a nearby factory farm on a taxpayer's property value. The taxpayer presented evidence from an appraiser who "considered that a potential buyer would take into account the odor produced by the hog farrowing facility", and adjusted the property's value downward for that and other reasons. The Court made several strong statements illustrating its conviction that factory farms impact neighboring property values:

In the context of negotiations between a willing buyer and seller to arrive at fair market value, the neighboring hog facility and the house's location would unquestionably affect the market value of Livingston's house. Any other conclusion would mean that two identical houses, one

located next to the railroad switching yard and the other next to the country club golf course, have identical values – an obviously arbitrary and illogical conclusion that no reasonable person would reach. . . .

That many potential buyers would not look favorably upon the hog facility, and judge the home's value with reference thereto, is demonstrated by some well-known Nebraska cases in which homeowners have successfully sued hog facility owners for damages caused by interference with the use of their nearby homes. . . .

No reasonable fact finder could conclude that in the real estate marketplace, a potential buyer would not notice, and react economically, to having a large hog facility very nearby while living in a remote location.

–*Livingston v. Jefferson County Bd. of Equalization*, 640 N.W.2d 426, 431, 437 (Neb. Ct. App. 2002).

In another Nebraska tax case, the state Supreme Court held that an assessor's valuation was "arbitrary and unreasonable" because it did not apply external/locational depreciation to a home that was near a cattle feedlot. The property owner provided testimony about problems with dust, trucks, and flies from the nearby feedlot. In addition, the well for the home was connected to the cattle-watering facility.

–*Darnall Ranch, Inc. v. Banner County Bd. of Equalization*, 753 N.W.2d 819, 830–32 (Neb. 2008).

In a 1999 South Dakota case, the Court upheld the decision of a land commission to deny a permit for the siting of a hog confinement facility based on, among other things, devaluation of surrounding real estate.

–*Coyote Flats, LLC v. Sanborn County Comm'n*, 596 N.W.2d 347, 352, 356 (S.D. 1999).

An appellate court in Illinois has recognized that factory farms can decrease neighboring property values. In *Nickels v. Burnett*, the Court upheld a preliminary injunction against building an 8,000-head hog CAFO based in part on "extensive evidence in the form of affidavits and scholarly articles authored by the expert affiants demonstrating that, if the hog facility were to begin operation, plaintiffs would experience substantially harmful health effects and a significant loss of value to their land." The Court found the "harms described were substantially certain to occur should the hog facility begin operations in its present proposed location."

The neighboring plaintiffs alleged that the facility would devalue their properties (among other things). The plaintiffs introduced the affidavit of a professional appraiser, who stated that neighboring property values would be reduced by 18-35%. They also presented affidavits from two doctors who concluded, respectively, that "years of downwind exposure to Hydrogen Sulfide even in low doses can cause permanent brain damage and . . . any exposure must be avoided;" and that "locating the proposed hog facility 3/4 of a mile or less away from homes is likely to cause medical and psychological symptoms to the people living in those homes." Another expert opined that "subjecting the Schmidt and Klein families (the families living closest to the site of the proposed hog operation), to the hog operation odors will significantly increase the likelihood that the two families will experience health problems and that it will cause significant detrimental effects on the quality of their lives." In his opinion, "subjecting the other 13 families, whose homes are located within 3/4 of a mile from the proposed hog operation, to the emissions generated by the proposed hog operation will increase their risk of health problems."

–*Nickels v. Burnett*, 798 N.E.2d 817, 820, 826 (Ill. App. Ct. 2003). Brief of Appellees at 7-10.

In Pasco, Washington, an appraisal done for litigation purposes found an over 50% reduction in value of a family farm impacted by neighboring CAFO dust, flies, fecal matter, and odor. The CAFO settled the lawsuit by relocating the plaintiffs and buying their farm.

–John A. Kilpatrick, *Concentrated Animal Feeding Operations and Proximate Property Values*, 39:3 Appraisal J. 301, 305 (2001).

In Michigan, a horse farm appealed its property tax assessment because it was located near a large scale pork processing facility. The horse farm got a 50% reduction based on airborne externalities and flies.

–John A. Kilpatrick, *Concentrated Animal Feeding Operations and Proximate Property Values*, 39:3 Appraisal J. 301, 305 (2001).

In a 2002 Iowa nuisance case, the Court ordered a pork company to pay \$100,000 to homeowners when their home dropped \$50,000 in value after a nearby CAFO was built. The plaintiffs had alleged that the CAFO attracted bugs and harmed their physical and emotional health.

–*Associated Press, Judge Awards Iowa Couple \$100,000 in Hog Lot Lawsuit*, *Amarillo Globe-News*, Jan. 12, 2002.

In 1998 in Cedar County, Nebraska, property owners received an assessment reduction based on a neighboring CAFO. On the protest form to the tax board, the property owners stated: "Our neighbor has built a hog confinement and lagoon across the road from our house. This same neighbor has runoff from his cattle yards in to the road ditch 100ft from

our well. The nitrates in our water ha[ve] increased making it not safe to drink. We feel a valuation increase of \$35,340 is unfair." The board looked at the property and decided to assess a 25% locational depreciation.

–Great Plains Environmental Law Center, Case Studies, Cedar County, Property Valuation Protest Form (1998).

In January 2002, in Calhoun County, Iowa, a jury awarded \$76,400 in damages to four property owners who claimed a 4,000-hog operation within a mile of their properties diminished their property values. In another Iowa county, a Court had recently awarded \$100,000 to other property owners for decreased property values from a nearby hog feeding operation.

–*Jerry Perkins, Jury Sides against Hog-lot Firm: A Total of \$76,400 Will Go to Residents Near the Facility*, *Jan. 26, 2002*.

A 1998 newsblurb from Kansas reported that a jury awarded \$15,000 to retired farmers who live near a feedlot for diminished property values and loss of peace of mind.

–*Across the USA: News from Every State*, USA Today, June 22, 1998.

*This document does not contain legal advice.
Please consult a licensed attorney if you wish to obtain legal advice.*



January 3, 2017

Ellen Ebata
P.O. Box 1226
Kōloa, HI 96756-1226

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Ellen Ebata:

Thank you for your letter dated July 24, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

EIS Preparators

Group 70 International, Inc. (Group 70) is responsible for the preparation and processing of the HDF EIS. The EIS was prepared in accordance with the requirements of Chapter 343 Hawai'i Revised Statutes and the "Environmental Impact Statement Rules" (Chapter 200 of Title 11, Hawai'i Administrative Rules). The environmental planning team at Group 70 has prepared several hundred Environmental Assessment and EIS documents over the past 40 years, and every document has been accepted by the responsible County, State and Federal agency. On numerous past EIS projects, the Hawai'i Chapter of the American Planning Association has recognized Group 70's professional work with Chapter awards for excellence in environmental planning. Part of the EIS scoping process involves Group 70's experienced team of technical sub consultants that are well-known and qualified in their respective fields of study. For this project, Group 70 is preparing the Hawai'i Dairy Farms EIS with the level of analysis required to properly evaluate and disclose the existing environmental conditions, probable impacts with mitigation, and potential cumulative and secondary effects.

Waioipili Ditch Water Quality

The State Department of Health issued their March 2016 Sanitary Survey report which identifies water quality conditions at Waioipili Ditch. We rely on their expertise to document these existing conditions. We further acknowledge your anecdotal information on recreational uses of this man-made drainage ditch. These conditions are clearly unrelated to the future dairy which has yet to be constructed or operate.

Groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

Complaints from the public citing the high levels of enterococcus in Waioipili Ditch and public concerns about the proposed dairy prompted the Hawai'i State Department of Health (DOH) Clean Water Branch (CWB) to conduct a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Waikomo watersheds. DOH CWB conducted water sampling within the Waioipili Ditch and areas upstream, and initiated a series of investigations into water quality issues. The Sanitary Survey findings resulted in an expression of concern by DOH CWB that the number of injection wells and cesspools in the adjacent Waikomo watershed, which includes Kōloa and Po'ipū, are impacting the waters of the Waioipili Ditch.

The geological and hydrological composition of the highly urbanized Po'ipū/Kōloa watershed differs from Māhā'ulepū sub-watershed, resulting in different rates of groundwater movement. Groundwater velocity under the proposed HDF site is on the order of 1.2 feet per day, while the groundwater under the Po'ipū-Kōloa watershed area averages 10 feet per day. The faster movement of groundwater reduces the attenuation period of bacteria, viruses, and nutrients that occurs with movement through soils.

The Part 1 Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors to the fecal indicator bacteria (FIB) levels in ditches running through Māhā'ulepū Valley. CWB noted that Waioipili Ditch is a man-made drainage ditch on private property, and is not an inviting recreational body of water utilized by people. Further testing is needed to more clearly identify whether the source(s) of FIB is human or animals, and DOH CWB has partnered with a University of California laboratory to more definitively determine the source of the fecal contamination in Waioipili Ditch. Results will be published as Part 2 of the Waioipili Ditch Sanitary Survey. The *Waioipili Ditch Sanitary Survey, Kauai Part 1* can be accessed on the DOH Clean Water Branch website under "Library" (<http://health.hawaii.gov/cwb/>).

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainage way (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddock, Fencing and Setbacks in the EIS.

Public Trust Doctrine

The proposed action is consistent with the public trust doctrine. The Hawai'i Constitution states that all public natural resources, including water resources, are held in trust by the State of Hawai'i for the benefit of the people of Hawai'i and that the State should "conserve and protect" those natural resources but also "promote the development and utilization of these resources." The Hawai'i Supreme Court has held that, as a result, the State has a "dual mandate." That mandate is 1) to conserve and protect the water resources of the State, which include both groundwater and surface water and but also 2) to allow for "maximum beneficial use" of those resources, including for agriculture. The Hawai'i Supreme Court has therefore expressly rejected the concept that "resource protection" is a categorical imperative. It has held that the State should allow "controlled development" that, while giving preference to public use, access and enjoyment, "promote[s] the best economic and social interests of the people of this state."

Based on this dual mandate, the State has developed the water code, which states that it should be "liberally interpreted to obtain maximum beneficial use of the waters of the State for purposes such as domestic use, aquaculture uses, irrigation and other agricultural uses, power development and commercial

PRINCIPALS

Francis S. Oda, AIA, AIA, AIA, LEED AP

Norman G.Y. Hong, AIA

Sheryl B. Seaman, AIA, AIA, LEED AP

Roy H. Nihei, AIA, AIA, LEED AP

James I. Nishimoto, AIA

Stephien Yuan, AIA

Linda C. Miki, AIA

Charles Y. Kaneshiro, AIA, LEED AP

Jeffrey H. Overton, AIA, LEED AP

Christine Mendes Rucicola, AIA, LEED AP

James L. Stone, AIA, AIA, LEED AP

Katherine M. MacNeill, AIA, LEED AP

Tom Young, MBA, AIA

Paul T. Matsuda, PE, LEED AP

Ma Ry Kim, MBA, AIA

Craig Takahata, AIA

OF COUNSEL

Ralph E. Portmore, FAICP

Hiroshi Hidb, AIA

and industrial uses" while also adequately providing for the "protection of traditional and customary Hawaiian rights, the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the State for municipal uses, public recreation, public water supply, agriculture and navigation. Such objectives are declared to be in the public interest."

The public trust doctrine therefore involves a balance--protection and conservation of the public natural resources of the State and a maximum beneficial use of those resources, including for agriculture. Designation of "important agricultural lands", including the HDF site, heightens the public interest in development of agriculture as the Hawaii State legislature has declared that the people of the State have a "substantial interest in the health and sustainability of agriculture as an industry" and, when so designated, the policy of the State is to promote the long-term viability of agricultural uses on those lands, including by "promot[ing] the maintenance of essential agricultural infrastructure, including the irrigation systems." This serves the "compelling state interest in conserving the State's agricultural land resource base."

The proposed dairy farm will use water from Waia Reservoir for irrigation, which is also the water source for several other farmers and ranchers in the area, including a taro farmer. Non-potable water from Waia Reservoir, which uses water from upland streams, provided irrigation water to the sugar plantation that historically operated in the Māhā'ūlepū area, and is used for recreational fishing. The reservoir is located west of the HDF site.

Potable water for the dairy farm will be drawn from deep groundwater wells that were installed by the sugar plantation that formerly operated on the site. The potable water will be used as drinking water for people working on the dairy farm and for the cows. As a result, the proposed action will advance both purposes of the public trust doctrine. The dairy farm will advance the important public interest in protecting and conserving agriculture in the State, including on important agricultural lands, and also further the goal of maximum beneficial use of the surface water and groundwater on those important agricultural lands.

Rainfall and Effluent Storage Ponds

There has been no rainfall event that would exceed the capacity of the effluent ponds since rainfall has been recorded in Māhā'ūlepū Valley. The effluent pond capacity has been designed to exceed the regulatory requirement of containing the 25-year, 24-hour rainfall event. Under the committed herd size of 699 mature dairy cows, the ponds could hold an additional 45 percent volume; under the contemplated herd size of up to 2,000 mature dairy cows, the ponds could hold an additional 12 percent volume. An emergency containment berm has also been added to the design, providing additional capacity equivalent to 30 days of effluent for the potential contemplated herd size up to 2,000 mature dairy cows.

Animal Mortality

HDF has adequately planned its cemetery site and has incorporated Best Management Practices to protect water resources surrounding the HDF site. The animal cemetery is specifically located on the north side of the farm, in an area of relatively flat pasture. Site selection criteria for the cemetery paddock included protection from prevailing winds, and distance more than 100 feet away from any drainageway, 200 feet from any natural watercourse, 300 feet from any well, and more than 20 feet from any buildings. Within the cemetery paddock, pits will be sited based on soil suitability and slope. A containment berm will be created around the pit area to prevent both run-off on to, and from, the cemetery site. An area of approximately 5,000 square feet is needed for the animal cemetery at the contemplated herd size of up to 2,000 mature dairy cows, which is a fraction of a 3- to 5-acre paddock. Based on preliminary analysis, HDF does not

anticipate encountering groundwater in the cemetery paddock area. Pits will be lined as needed in accordance with NRCS Conservation Practice Standard, Animal Mortality Facility Code 316, to protect groundwater quality.

A containment berm will be created around the pit area to prevent both run-off on to, and from, the cemetery site. Six (6) pits, approximately 20' x 40' overall and 8 to 10' deep, are designed to accommodate carcasses of up to 150 cows and 360 calves or stillborn animals at the contemplated herd size. Individual pits within the area will be a minimum of 2-feet wide with a length appropriate to bury the carcass. Pits will be lined as required in accordance with NRCS Conservation Practice Standard, Animal Mortality Facility Code 316, to protect groundwater quality. Each animal carcass will be dusted on all sides with ground limestone. The bottom of each pit will be also dusted. Pits can be reused every 18 to 24 months, which is the typical time for a carcass to decompose.

Pit bottoms will be level, and carcasses will be placed in a single layer and covered with at least 2 feet of organic material. Multiple layers may be created with subsequent burials, or additional area within the cemetery paddock may be used as needed. Based on preliminary analysis, HDF does not anticipate encountering groundwater in the cemetery paddock area when excavating the pits. The paddock area will not be grazed.

HDF may also consider procuring and installing an incinerator to use for managing mortality on the farm. The incinerator would meet the appropriate guidance from NRCS Conservation Practice Standard - Animal Mortality Code 316 as well as State and EPA emissions regulations, to ensure no adverse air quality impact from the incinerator operations.

Flooding

An emergency preparedness plan for protection of animals has been prepared for HDF internal use that addresses hurricane, fire, and potential flooding hazard scenarios. HDF is not in a tsunami inundation area, so this scenario is not planned for in the disaster plan. The disaster plan relies upon knowledge of cow behavior, and is based on extensive guidance for livestock protection from NRCS, the Florida State Agricultural Response Team (SART), Pennsylvania State College of Agricultural Sciences, and Cornell University Cooperative Extension. The plan includes safety procedures during any disaster, follow up actions, and emergency contacts for assistance before, during or following the event. Further information is provided in EIS Section 4.6.2.

Nutrient Balance

Carrying capacity is determined by nutrient inputs and outputs. HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). A Technical Service Provided knowledgeable in NRCS Conservation Practices was retained to work with HDF technical advisors in determining a nutrient balance for the Māhā'ūlepū site. Application of manure can benefit soils by improving organic matter which helps to increase water-infiltration and improve the soils ability to support pasture growth and root establishment. Elements of the Nutrient Management Plan development for HDF are described in the EIS Section 3.5.4.2 *Nutrient Balance* and included in the *Nutrient Balance Analysis for Hawaii Dairy Farms* attached to the EIS and Appendix D. While manure is the primary source of nutrients for the Kikuyu crop, commercial nutrient application is still necessary. Even with the amount of manure produced on site, there remains a deficit of nutrients required for the crop beyond what is provided by the manure in order to maintain high forage productivity and soil health.

HDF is committed to establishing a herd of up to 699 mature dairy cows to demonstrate the pasture-based system as an economically and environmentally sustainable model for Hawai'i. Precision agricultural technology that monitors cows' health, grass productivity, and effluent management will be used to ensure environmental health and safety, as well as best management practices, and help determine the ultimate carrying capacity of the land. With proven success at a herd size of 699, HDF will contemplate the possibility of expanding the herd in the future.

For dairy operations with 700 or more mature dairy cows, regardless if the operation is feedlot or pasture-based, additional regulatory review and permitting by the State Department of Health would be required. The application process for a National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) permit includes public notification and input. At the discretion of HDF, management may choose to submit an application to expand operations up to the carrying capacity of the land, which is estimated to be up to 2,000 productive mature dairy cows. Permit process compliance would be followed at such time HDF may decide to pursue an expanded operation.

Integrated Pest Management

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaua'i and those species already in Māhā ūlepu Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

Pastoral Rotational Grazing Dairy Examples

Successful pastoral dairies exist at numerous locations in New Zealand, as well as suitable farming regions in the United States. Several rotational grazing dairy operations located in Florida and Georgia operate successfully, with farms containing over 2,000 animals. Successful rotational grazing dairies also exist in Maryland and North Carolina, along with Missouri. Numerous articles and publications on rotational grazing dairies are cited in Progressive Dairyman and other industry news sources.

Economics

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Comments by Kilpatrick about the adverse economic impacts of the dairy appear to be based on nuisance parameters and footprints of conventional feedlot dairies found on the mainland, not on those of the planned Dairy, which will be a modern facility that uses rotational pasture-grazing. Results of technical studies presented in this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort and residential areas. The review of property values adjacent to beef cattle operations in the Kōloa region reveals newer homes with large square footage in a luxury residential community with 2016 assessed values of \$1,297,150 per lot, to \$2,893,100 per lot with a home. The proposed dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the DEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://hinyurl.com/OEQCKKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

I oppose the planned Hawaii Dairy Farms facility on Mahaulepū

Errol EerNisse <errol@xmission.com>

Sun 7/24/2016 6:42 AM

To: doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; HDF <hdf@group70int.com>; jim@hawaiidairyfarms.com <jim@hawaiidairyfarms.com>;

Dear Sirs and Madam

I am a home owner in the Poipu Kai Resort, directly down wind from the proposed dairy farm. As a senior in college at South Dakota State University I worked part time on a dairy farm. I know the conditions that exist with such a facility.

I also mountain biked in the agricultural area of Mahaulepū years ago before it was closed to such activities. There is not enough land there to support the ultimate size of dairy farm proposed. Leave it alone so the small cattle operations that presently exist there can continue. How about a vegetable farm instead?

Errol P. EerNisse

Lanai Villas Z8

1722 Kelaukia Street

Koloa, HI 96756

and

1779 Yale Ave.

Salt Lake City, UT 84108

cell phone 801 201 1335

This email has been checked for viruses by Avast antivirus software.

<https://www.avast.com/antivirus>



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yulín
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mt. Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Errol EerNisse
errol@xmission.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Errol EerNisse:

Thank you for your email of July 24, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepū Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

The herd size for HDF is consistently represented as the potential maximum number of cows guided by the results of the nutrient analysis which reflects the carrying capacity of the land (EISPN Section 2.3 Proposed Action; EIS Section 1.2 Proposed Project). The distinction between the herd sizes and permit differences is explained in the EIS Section 2.4 Planned Dairy Development on Māhā'ulepū Agricultural Lands. During the public scoping meeting, participants expressed an interest to understand impacts of the committed herd size (up to 699 mature dairy cows). HDF agreed to analyze and present impacts at both the committed and contemplated (up to 2,000 mature dairy cows) herd size. Therefore, the probable impacts of the potential contemplated herd size are also analyzed and clearly identified in the Draft and Final EIS.

Errol EerNisse
January 3, 2017
Page 2 of 2

HDF is committed to establishing a herd of up to 699 mature dairy cows to demonstrate the pasture-based system as an economically and environmentally sustainable model for Hawai'i. Precision agricultural technology that monitors cows' health, grass productivity, and effluent management will be used to ensure environmental health and safety, as well as best management practices, and help determine the ultimate carrying capacity of the land.

With proven success at a herd size of 699, HDF will contemplate the possibility of expanding the herd in the future.

For dairy operations with 700 or more mature dairy cows, regardless if the operation is feedlot or pasture-based, additional regulatory review and permitting by the State Department of Health would be required. The application process for a National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) permit includes public notification and input. At the discretion of HDF, management may choose to submit an application to expand operations up to the carrying capacity of the land, which is estimated to be up to 2,000 productive milking dairy cows. Permit process compliance would be followed at such time HDF may decide to pursue an expanded operation.

As a part of the EIS, alternatives were evaluated that could attain the objectives of the action's purpose and need, and were compared with environmental benefits, costs, and risks of each reasonable alternative against those of the proposed dairy project. Further discussion of alternatives can be found in EIS Section 6.

Of all the alternative actions and locations considered, the planned agricultural operations of Hawai'i Dairy Farm is the only approach that achieves project objectives and meets each of the five Evaluation Criteria described in EIS Section 2.3.4.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAU>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner



July 22, 2016

Group 70 International
ATTN: Jeff Overton/Hawaii Dairy Farms
925 Bethel Street 5th Floor
Honolulu HI 96813

Department of Health (DOH)
ATTN: Laura McIntyre/Environmental Planning Office
1250 Punchbowl Street
Honolulu HI 96813

RE: DEIS for the Proposed Hawaii Dairy Farm in Maha'ulepu Kauai

I am writing to submit comments on the DEIS and urge the DOH to not issue NPDES permits to the Hawaii Dairy Farm project as proposed. I have a background as an ecologist, wildlife biologist, and environmental consultant with two M.S. in Ecology and Environmental Chemistry from the University of California, Davis and over 20 yrs. experience writing and reviewing EISs, Biological Opinions, Habitat Conservation Plans, Wetland Delineations and other environmental permitting documents in Hawaii and the west coast of the USA. I also worked extensively with over 100 strains of gram negative bacteria and have conducted water quality sampling in the Central Valley of California.

Because process is so important with environmental review, I want to express extreme concern with the inappropriate process that this project seems to have been forcing onto the community. There have been "shifting" project descriptions that the public is not able to access at one time. The public and the decision makers cannot evaluate a moving target. I concur with the Friends of Maha'ulepu and Kauai Council member Joanne Nukimura that the public must be given one official project to evaluate and the process must be transparent and fair and "meaningful". Poor planning and reactive planning usually cause this type of problem and it is unacceptable and unjust to the community in which this project would be located. Holding a fair and clear process must be pursued aggressively. Additionally, the appendices of the DEIS available to the public were oriented sideways thus making the Pdf nearly incomprehensible and very frustrating to try to access. This is not acceptable

First, I wish to make a few points as a resident of Koloa, whose inputs have not been incorporated into project design thus far. I love the rural community of Koloa. My children attend school in Koloa and my husband owns a food truck establishment which relies on visitors, many of whom return each year when they visit Kauai for vacation. We view Poipu and Maha'ulepu are our back yard.

Hundreds of families in Koloa and Poipu live less than 2 miles from what has been recognized globally as an outstandingly beautiful coast, the "crown jewel" of which is Maha'ulepu. We "local" families go to Maha'ulepu weekly with our children. Each week, dozens of families hold birthday parties, family reunions, cultural events, family hikes in the moonlight, and many other precious activities that cannot be done elsewhere. I along with many thousands of locals and visitors hike, swim, bird, botanize, bike, horseback ride, fish, care for native wildlife (e.g., Hawaiian Monk Seal watch), and hold lifetime special events in Maha'ulepu. I was married in Maha'ulepu and have attended several memorial services along its shores. Our

pre-schools and elementary schools and summer camps go there regularly as well (e.g., excursions to Makauwahi Cave).

Bottom line: Maha'ulepu is a "world-class" drop dead beautiful treasure of an area that smells great, looks great, and is quiet, tranquil, and can give an irreplaceable sense of closeness to nature, God, family, and a deep sense of peace. We need to do more to protect and restore this area. The experiences that thousands of people enjoy in Maha'ulepu each month are multiplied over the year, are invaluable and need to be fiercely protected.

Many in our community, from The Friends of Maha'ulepu, Sierra Club, National Tropical Botanical Garden, and The Surfrider Foundation to name a few, are striving to do just that because more than just consuming the beauty of the area, it is our *kuleana* or responsibility to protect it for future generations of humans and wildlife. The DEIS demonstrates in key economic and environmental outcomes that the proposed Hawaii Dairy Farm will harm Maha'ulepu and by extension the thousands of people who love it and rely on it for physical, spiritual, cultural, and emotional sustenance.

I respect and support agriculture and have worked extensively and productively with large and small-scale farmers, ranchers, and loggers in various communities across the USA. I worked for many years for the California Energy Commission on the siting of power plants throughout CA. I was hopeful when the Hawaii Dairy Farm project was unveiled that a small farm with locally produced, processed, and sold milk would directly and significantly benefit our island community on many levels. But, sadly, the DEIS and the manner in which the project proponents have interacted with the community to date, demonstrate that there are numerous and very serious problems with the proposed project as proposed in the DEIS.

Below I list the areas of the DEIS topics that I have determined, in my very limited time to examine the DEIS, are the most important. I reference and support detailed analyses provided by other subject experts.

1. **Economics:** The DEIS analysis is completely insufficient, incomplete and does not accurately disclose or mitigate for the direct, indirect, short and longterm extreme negative externalities that the project will cause to local landowners, renters, tourists, and businesses. I concur with the excellent and thorough analysis provided by Dr. John Kilpatrick's as a highly credible expert on the subject Dr. John Kilpatrick. The economic impacts alone are paramount and must be avoided. The economic benefits will clearly benefit an incredibly small few and have not been demonstrated in the DEIS.

The Po'ipu area is an enormously important and growing economic center with a high potential to incur significant adverse, and possibly irreversible, impacts to Kaula's, and the State's cumulative economy, if the project as proposed is located in Maha'ulepu. Inland "mauka" communities, many of my neighbors, also rely heavily on the economy of Po'ipu for jobs there. Diverse types of small businesses rely on the visitors and residents who are attracted by the beautiful environment of the area. Hospitality (including conventions, weddings, as well as hotels and timeshares), recreational tours, food service, retail, construction, real estate, will be harmed by the economic and environmental outcomes caused by this project. My husband's

successful small business will be potentially ruined because the project would adversely affect tourism which comprises approximately 75% of his customer base.

2. **Water Supply:** Based on information available to me about the project, the enormous amount of water that will be used each day by the proposed project is not going to be used for a reasonable-beneficial use, it may interfere with many existing legal uses, and is clearly not consistent with the public interest. A "concentrated feed operation" such as the Hawaii Dairy Farm that will benefit so few in our community (e.g., 4 jobs when 1,000s will be in immediate jeopardy) should not be permitted to use millions of gallons of our precious freshwater per day when there is already a looming water scarcity problem on the island (I reference Garden Island News Feb. 17 2016 as a very basic recent example). There is also a credible risk that the groundwater, that needs to be conserved and protected for beneficial uses in the future, will become contaminated by the project.

The Hawaii Water Code defines surface water as "water upon the surface of the earth in bounds created naturally or artificially including, but not limited to, streams, other watercourses, lakes, reservoirs, and coastal waters subject to state jurisdiction - and diffused surface water - that is, water occurring upon the surface of the ground other than in contained waterbodies." Haw. Rev. Stat. § 174C-Regardless of whether surface water is contained in streams or springs, or diffused in some other form, it is a public trust resource that must be managed for the benefit of present and future generations. This means *mauka* to *makai* (water from deep in the ground/mountains that flows downstream in various ways to ocean) and the DEIS does not convince me that this has been taken into account. The use of this amount in an area with shallow groundwater must not be authorized but the State.

3. **Water Quality:** I urge the Dept. of Health to not issue the project an NPDES permit for 699 cows, let alone 2,000. From my cursory read of the parts of the DEIS that I could see well, I think that waste water management, treatment, and discharged are not adequately addressed in the DEIS. Having spoken at length with Dr. Carl Burg, I concur with the comments that The Surfrider Foundation is submitting on this DEIS and urge decision makers to take this matter extremely seriously.

I am seriously concerned about wastewater released by the "concentrated feed operation". These waste effluents when released into the environment (via permit or accidentally) will be transported off site, downstream and into sensitive habitats relied upon by wildlife, fishers, and enjoyed by children. The water will from the project will contain high and variable levels of zoonotic organisms including bacteria (e.g. *Listeria spp.*, *Salmonella spp.*, *Escherichia coli*, *Campylobacter jejuni*, *Campylobacter coli*, and *Enterococcus spp.*), protozoa e.g. *Cryptosporidium parvum* and *Giardia duodenalis*), nitrates, phosphates, dissolved solids, anti-microbial pesticides residues and metabolites, and estrogen metabolites from the female cows which cause disruption of endocrine systems in aquatic organisms (see EPA Review 2013 of Livestock and Poultry Manure). Hormones can be impossible to remove from treated water without special methods that I did not read of in the DEIS. Water quality

impacts must be mitigated to prevent no harm, monitoring must be implemented. These are not demonstrated in the DEIS.

4. **Biological Resources:** I did not have time to prepare a detailed critique of the DEIS and had terrible problems reading the appendices. What I was able to read in the DEIS does not adequately describe or analyze the project's adverse effects on biological resources. The Hawaii Dairy Farm should not be located in an area with sensitive native birds and at a scale that will surely result in an increase in non-native, invasive, nuisance vertebrate species that harm listed native species inhabiting the habits of the project area and region. The DEIS fails to provide a monitoring and action plan to address a large problem that will result from the cows. The concentrated presence of 699-2,000 cows, their feces, and the proliferation of non-native insects, will increase the populations of non-native, invasive, nuisance animals such as rats (*Rattus spp.*), chickens (*Gallus gallus domesticus*), cattle egrets (*Bubulcus ibis*) and barn owl (*Tyto alba*). Barn owls are non-territorial and can nest in abundance in areas of high food and they are already common in Koloa and Po'ipu.

Barn owls are an asset on mainland farms and I personally have built many nest boxes and worked with orchardists and field and row crop farmers to enhance barn owl populations in CA. But in Hawaii, barn owls are not desired because they kill native birds such as wedge-tailed shearwater (*Ardenna pacifica*), which nest on the coast of Maha'ulepu and suffer significant mortality each year due to non-native predators. Furthermore rats, egrets, barn owls, kill native endangered waterbird eggs and chicks of koloa duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian coots (*Fulica alai*), Hawaiian goose (*Branta sandvicensis*), and Hawaiian moorhen (*Gallinula galeata sandvicensis*) that inhabit suitable wetland and grassland habitats in the area.

The proposed mitigation to prepare an avian species protection plan "after buildout" is unacceptable. The DEIS should have provided more detail about the plan as well as information on monitoring costs and costs to control invasive predatory/nuisance species. Invasive animal populations will reach higher levels quickly. Waiting until after build out is too late. The species that could be affected are endangered. Therefore no negative impact should be permitted, and the DEIS does not demonstrate effective mitigation of harm, and certainly it does not demonstrate net benefit to endangered native birds.

In addition, the DEIS does not adequately analyze impacts to aquatic biota. It is likely that there will be adverse and significant damage by the water effluent/discharge from the project, particularly near-shore and offshore corals, invertebrates and vertebrates that form the food chain. This is not simply an ecological question but also a practical one because many local fishermen rely upon the fishes and invertebrates off the coast of Maha'ulepu to feed their families on a daily basis.

Baseline water quality monitoring by The Surfrider Foundation shows existing high land-based contamination in several streams along the coast. The Hawaii Dairy Farm should not be permitted to add to existing water pollution through a discharge permit when the existing pollution still needs to be reduced and mitigated.

The project should be required to result in a net benefit to the environment and this is not demonstrated in the DEIS.

5. **Air Quality:** When evaluating the merits of air emissions, the benefits and mitigation or offsets must balance if not outweigh the impacts and the DEIS fails to do this. I did not have time to evaluate the air quality methods but I want to flag this as a priority topic that concerns me and which is related to other impacts of the project. The cows will generate many tons of a potent greenhouse gas in the form of methane-there is a plethora data as well as many peer reviewed studies of this exact topic from around the world (I sure links to [Johnson and Johnson 1995](#), and an [EPA overview](#) as a very basic start). The resulting emission of tons of methane alone is not a sustainable output into the environment when literally a handful of jobs will be created for the local community and community businesses unrelated to the dairy will not be established. Furthermore, sending tons of greenhouse gases into the atmosphere when the milk will be trucked off site, and shipped off island to be "processed", packaged, and then sold BACK to US its yet more barges and trucks is ludicrous and irresponsible in the year 2016.

The cows will also generate hundreds of tons of feces and dust per day which will stink, provide perfect habitat for millions of biting flies, and directly reduce the beautiful natural surroundings that many people use each day. Together, the types and levels of adverse impact to air resources are not acceptable and will generate more greenhouse gases without providing a truly LOCAL source of milk.

Based on air quality alone, the project defined in the DEIS is not the "sustainable" type of project that will benefit Kauai or the Earth in this day and age when international, national, state and local governments are striving to reduce greenhouse gas emissions.

6. **Pest Management:** Nuisance insects such as biting flies will proliferate and significantly harm the public's enjoyment of the coast line, resorts, parks, and other open spaces, which visitors pay a lot of money to enjoy. Rats will also proliferate. Farmers in the area may also be negatively impacted and their source of income may be directly reduced by the effects of pests produced by the "milk factory". The DEIS fails to adequately address these outcomes, the magnitude of which cannot be adequately offset by "good housekeeping". I worked for 2 summers as a groom and stall cleaner at large modern racehorse stables in New Jersey. Excellent housekeeping cannot come close to keeping up with the rapid rates of insect reproduction (except during areas with a cold winter). We used pesticides sprayed aerially in the barns and still had flies as well as complaints from neighboring farms and housing developments. I am highly doubtful of claims that daily mountains of manure piles from 700-2,000 cows can be diminished fast enough with "dung beetles" to prevent millions of flies from hatching.

Flies at various stages of their life cycle can be dispersed in several ways, and of course wind assisted flight will be a predominant means by which adults disperse away from the dairy. From those new locations, more flies will breed and hatch and disperse downwind from there and so on. IPM as listed in the DEIS must use

insecticides, the drift and residues of which will undoubtedly wind up in the milk, soil and water of Maha'ulepu. Rats may also proliferate to areas far off site. The resorts and businesses downwind will likely be forced to use more pesticides and rodenticides as well to address the exacerbated nuisances thereby resulting in higher costs for them and potential environmental impacts. The DEIS should show effective consultation with the tourism industry, agriculture and other businesses that will be affected by the pests generated from the project.

7. **Visual and Aesthetics:** Despite the DEIS assertion that the use will be compatible with existing aesthetics, I find it disingenuous an incomprehensible that the proposed "concentrated feed operation" will not severely destroy the visual and aesthetic beauty of the area, which also lies in the foreground of magnificent Ha'upu. The combined aesthetic damage due to dust, noise, odors along with the visual sight of 699-2,000 cows has been underestimated. I know it will not be a bad a Coalinga, CA (which I know well), but the recipient of this project is Maha'ulepu - a world class beauty. The siting of such an aesthetically impactful facility is not justified in a visually stunning location such as Maha'ulepu.

Today, Maha'ulepu makes an irreplaceable positive impact on all who go there. Residents and visitors are working hard with their hands, minds, hearts, and souls to protect and restore it for enjoyment by future generations and for the environmental health of our small island. The Hawaii Dairy Farm through its water pollution, dust, odors, noises, and nuisance biting flies, etc., will directly, immediately and perhaps permanently destroy that potential as well as quality of life on Kauai's south shore.

8. **Alternatives:** Alternative locations and project plans must be fully and thoroughly evaluated in a transparent process. The DEIS analysis provides too limited of an analysis; it lists a potential Puhī site is less suitable for reasons that are weakly presented in the DEIS, and seems to be biased. Factors listed against a Puhī site include presence of a perennial stream and a National Wildlife Refuge in the area. Maha'ulepu may not be officially designated as a National Wildlife Refuge, but I think many would vote that it should/could be. Plus, Maha'ulepu provides high public use opportunities and it too is home to sensitive aquatic habitats and native wildlife that will be adversely affects in the short and long term. The Hawaii Dairy Farm must take more carefully and thoroughly scope and analyze other locations. The DEIS fails to do this. I strongly recommend that the project is required to re-evaluate and analyze more suitable locations, reducing/lower capping herd size, and processing more milk on the island.

Conclusion

Based on the DEIS the Hawaii Dairy Farm project proposed for Maha'ulepu is not an economically or environmentally desirable, beneficial, or "sustainable" project because as proposed it will likely have severe and long-term, not "modest", adverse effects to Kauai's south shore, and Maha'ulepu in particular.

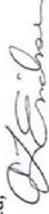
The proposed project will cause a large number of adverse economic and environmental impacts that the DEIS does an inadequate job of analyzing. The DEIS analysis does not provide information adequate to support the issuance of key environmental permits (e.g., water discharge). The mitigation to offset impacts is not sufficient in the DEIS because the impacts are not accurately derived. The economic and environmental adverse "externalities" or impacts it will cause will far outweigh the very small benefits to a select few.

My recommendation is that the DEIS must be revised to improve its analyses in critical areas particularly analysis of alternatives. Hawaii Dairy Farms must be held accountable to stringently scrutinize alternatives to their project location and design, as they relate to economic, water consumption, water discharge, biological impacts, air quality, and visual/aesthetic impacts. The project could be re-located and/or re-designed (scaled down significantly) to fit within the communities' needs and long term planning goals (e.g., water resource supplies and management, reduction of greenhouse gas emissions, economic planning, and food security).

Siting the dairy in Maha'ulepu is creating a strong probability of failure for the project proponents, the community and the physical and natural environmental on which we all depend.

Finally, moving forward, the Hawaii Dairy Farm must be much more transparent and fair with the community in the environmental review and permitting processes.

Respectfully submitted,



Andrea Erichsen, M.S.
P.O. Box 1874
Koloa, HI 96756

Economics

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm LLC. The dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J).

Water Supply and Public Trust Doctrine

The proposed action is consistent with the public trust doctrine. The Hawai'i Constitution states that all public natural resources, including water resources, are held in trust by the State of Hawai'i for the benefit of the people of Hawai'i and that the State should "conserve and protect" those natural resources but also "promote the development and utilization of these resources." The Hawai'i Supreme Court has held that, as a result, the State has a "dual mandate." That mandate is 1) to conserve and protect the water resources of the State, which include both groundwater and surface water and but also 2) to allow for "maximum beneficial use" of those resources, including for agriculture. The Hawai'i Supreme Court has therefore expressly rejected the concept that "resource protection" is a categorical imperative. It has held that the State should allow "controlled development" that, while giving preference to public use, access and enjoyment, "promote[s] the best economic and social interests of the people of this state."

Based on this dual mandate, the State has developed the water code, which states that it should be "liberally interpreted to obtain maximum beneficial use of the waters of the State for purposes such as domestic use, aquaculture uses, irrigation and other agricultural uses, power development and commercial and industrial uses" while also adequately providing for the "protection of traditional and customary Hawaiian rights, the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the State for municipal uses, public recreation, public water supply, agriculture and navigation. Such objectives are declared to be in the public interest."

The public trust doctrine therefore involves a balance--protection and conservation of the public natural resources of the State and a maximum beneficial use of those resources, including for agriculture. Designation of "important agricultural lands", including the HDF site, heightens the public interest in development of agriculture as the Hawai'i State legislature has declared that the people of the State have a "substantial interest in the health and sustainability of agriculture as an industry" and, when so designated, the policy of the State is to promote the long-term viability of agricultural uses on those lands, including by "promot[ing] the maintenance of essential agricultural infrastructure, including the irrigation systems." This serves the "compelling state interest in conserving the State's agricultural land resource base."

The proposed dairy farm will use water from Waita Reservoir for irrigation, which is also the water source for several other farmers and ranchers in the area, including a taro farmer. Non-potable water from Waita Reservoir, which uses water from upland streams, provided irrigation water to the sugar plantation that historically operated in the Māhā'ulepū area, and is used for recreational fishing. The reservoir is located west of the HDF site.

Potable water for the dairy farm will be drawn from deep groundwater wells that were installed by the sugar plantation that formerly operated on the site. The potable water will be used as drinking water for people working on the dairy farm and for the cows. As a result, the proposed action will advance both

purposes of the public trust doctrine. The dairy farm will advance the important public interest in protecting and conserving agriculture in the State, including on important agricultural lands, and also further the goal of maximum beneficial use of the surface water and groundwater on those important agricultural lands.

Surface Water Quality

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 *Geology of Māhā'ulepū and Vicinity* displays the volcanic geological history of the area.

Healthy cows are a priority for HDF, and antibiotics as prescribed by a licensed veterinarian may be used from time to time, to ensure cows remain healthy and are treated humanely. Guidelines set by Food and Drug Administration (FDA) will be followed to avoid any antibiotic adulteration of milk. Additionally, HDF will routinely conduct laboratory tests on milk for any trace of antibiotic residue. HDF will not treat cows with bovine growth hormones (rBST or rBGH).

As stated in Section 3.5.3, as the cattle excrete on the Kikuyu thatch, nutrients are incorporated into soils through primary decomposers such as earthworms and dung beetles that aerate the soil to make organic materials accessible to secondary microorganism decomposers. The decomposition process breaks down manure into nutrient components that are readily available for uptake by the grass crop. In a healthy system, manure can be cycled through the soil surface in 24 to 36 hours.

With the addition of irrigation water and liquid effluent, the surface soil will be energized microbiologically (EIS, Section 4.1.1). Stimulated populations of microorganisms are very effective in inactivating pharmaceuticals and additives due to the reduced half-time resulting from enhanced immobilization and degradation by the superactive microbiological community (Yost, 2016).

Biological Resources

Botanical, avian, and mammalian surveys of the property were conducted for the EIS to assess existing species on site, including identifying any species listed as endangered, threatened, or proposed under any state or federal endangered species programs in or near the property. EIS Sections 4.9 and 4.10 address the evaluation of flora and fauna resources, with technical studies in Appendix A and B.

The HDF site has been in agriculture for centuries. The vegetation is representative of highly disturbed agricultural land, with a very limited suite of five common, native plants identified on the site. Correspondingly, native arthropods reliant on native vegetation are virtually non-existent on the site, compounded by extermination of most lowland endemic insects by the alien big-headed ant, *Pheidole*. No long-term impacts to native plant habitats will occur as a result of the dairy.

Per the advisement of the U.S. Fish and Wildlife Service and the State Division of Forestry and Wildlife, HDF will follow best practices and operational procedures to protect any protected animal species. While there are almost no suitable roost trees within the dairy site, HDF will not disturb, remove or trim woody plants greater than 15 feet tall during the Hawaiian hoary bat pupping season. No affect to bats is expected from activities and operations of the dairy farm. All outdoor lights installed as part of the project will be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights and man-made structures. A predator control program will be implemented and maintained to reduce threats to waterbirds or nēnē transiting through or possibly nesting. A draft Endangered Species Awareness and Protection Plan has been completed in consultation with USFWS and DOFMW, and will be finalized prior to dairy construction and operations to ensure that dairy operations would not result in deleterious impacts to protected wildlife.

Barn owls and chickens were not observed nor are they proposed to be introduced for this project. Rats and other pests will be accounted for within the scope of the Dairy Integrated Pest Management (IPM) plan.

HDF shares the concern of herbicide and pesticide impacts on the HDF site and surrounding environment. Insecticides and herbicides are non-discriminatory and kill beneficial as well as pest insects. Such control would only be used when needed by those qualified to apply chemicals, and in accordance with authorized procedures and regulatory labeling requirements. Safe application practices for any unavoidable herbicide or pesticide include specifically targeting the problem pest species. Integrated Pest Management (IPM) will be the preferred means to control pests; this method disrupts the reproduction potential of pests by appropriate means at key points in the life cycle.

Marine Environment

The EIS documents both surface water and marine water quality downgradient of Māhā'ulepū Valley. Intermittent streams and man-made ditches convey surface water from the 2,700-acre Māhā'ulepū Valley sub-watershed, which includes the 557-acre proposed HDF site, to the Waioipili Ditch. The terminus of Waioipili Ditch is a deep, muddy basin that joins the ocean through a channel cut through beach sand. The ditch is not an inviting body of water for recreation, though people may cross the channel on foot nearest the beach at a point also utilized by a commercial horse-back riding operation during its twice-daily trail rides. Water quality constituents, including nutrients and bacteria, were quantified at surface water and marine sites. Results of the water chemistry analysis identify that ditch water mixes rapidly and within a short distance of the shoreline. Marine Research Consultants, Inc. (MRCI) concluded input from ditch water is highly restricted in terms of effects to the marine environment, and there will be no substantial effects to marine water quality from dairy operations. However, comments received on the Draft EIS included interest in the marine biota.

To address the comments to the Draft EIS, HDF engaged MRCI to survey the marine biotic community structure and provide baseline documentation of existing conditions. The typical weather and sea conditions in the area are characterized as a high energy environment due to frequent tradewinds and long-period ocean swell, which rapidly mix the water column. This translates to rough water conditions considered dangerous for human recreation except during periods of exceptionally calm wind and waves. The survey was conducted during such a period in November 2016, to allow for safety as well as for visibility within the water.

The shoreline and nearshore marine environment is shaped by a submerged basaltic shelf, formed from ancient lava flows. A semi-embayment is created seaward of the basaltic shelf, bounded by extrusions of pillow lava that form distinct shallow dikes on either side. Within the central area of this semi-embayment are expansive sand flats. Biotopes – areas of uniform environmental conditions that provide a living place

for a specific assemblage of plants and animals - were documented and described for the Māhā'ulepū area. The open coastal exposure to long-period south swells and tradewind-generated seas are reflected in the survey findings. There is essentially no biotic community structure in the areas where the ditch water flow meets the ocean.

Coral community structure throughout the near-shore zone that has a hard bottom is generally restricted to the hard pioneering coral *Pocillopora meandrina*. Where substratum is more sheltered from wave effects or has more complexity in the form of undercuts, ridges and knolls, additional common species are seen: *Porites lobata* and *P. compressa*, and *Montipora patula* and *M. capitata*. Coral cover in such areas was 10 to 20 percent of bottom cover. The exception was a small area approximately 0.3 miles south of the ditch point of discharge, where a well-established coral community was identified. The larger coral colonies likely exist due to a protective lava extrusion that shelters the area from destructive waves; assumedly these corals withstood wave forces associated with two hurricanes that directly impacted Kana'i in 1981 and 1992. The corals within this area, while not common for the high energy marine environment, are composed of the most common components of most Hawaiian reefs. Due to the distance from the discharge point (approximately 2,000 feet, or 0.3 mile), nutrient or biological inputs from the ditch would be diluted to background marine levels and create no impact.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kana'i and those species already in Māhā'ulepū Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.1.1.

Air Quality

Unlike a conventional feedlot dairy facility that must collect and store all manure produces until future disposal, the majority of manure from a pastoral-grazing operation will be deposited directly on the pasture where it will break down and be incorporated into the soil within a one- to three-day period.

Without a dairy in operation, computer-generated modeling was used to determine the potential impact. Results for the committed herd size of 699 mature dairy cows using typical effluent irrigation conditions show that odors may be detectable by 50 percent of the sensitive population once per 200 hours, or just 44 hours per year, within one-quarter of a mile south of the dairy farm boundary. For wet periods, odor could extend approximately 2,151 feet (less than one-half of a mile) beyond the southern boundary. The closest public use areas beyond the odor extent south of HDF are a stable and golf course, both approximately 0.5 miles further south, and the closest residential and resort units are 1.3 miles beyond the possible odor extent (EIS Figure 4.19-1).

HDF has elected to restrict slurry application to periods when wind speeds are between 9 and 20 mph. With application at the most impactful location, paddocks south of the taro farm, the odor from slurry application barely crosses the southern boundary. Due to wind speeds within this range occurring on average 243 days of the year, the 99.5th percentile is reduced to potentially perceiving the odor just 29 hours per year.

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location - paddocks south of the taro farm - the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas. The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

Visual Resources

The EIS addresses the existing visual and aesthetic resources of the dairy site, and the potential impacts of Hawai'i Dairy Farms. EIS Section 4.5 addresses potential effects to public scenic views. The County of Kaua'i General Plan identifies the HDF site as agricultural land in a region consisting of open space, parks, and conservation lands in the mountains and along the coast. The important visual landforms identified in the surrounding region are Pu'u Humihuni Crater to the southwest, the scenic roadway corridor of Ala Kinoiki Road, and the Hāupu Mountains that surround the project area to the northeast. However, the majority of the project area has gentle topography, with no evident physical features standing out within this broad agricultural valley.

The dairy site is not visible from public vantage points along public roadways and areas along the coastline. Vegetation and topography screen public views of the Māhā'ulepū Valley lowlands. Dairy farm structures will conform to County height limits for agricultural zoned land. The tallest structures of the HDF facilities will include the milking parlor and the associated storage tanks, all of which are roughly 33 feet in height. These items are in keeping with the agricultural character of the area, and would be expected to have minimal to no impact on public views of the Pu'u Humihuni crater, views from the Ala Kinoiki Road corridor, or the views of the Hāupu Mountains surrounding the project.

Alternative Sites

The Hawai'i Dairy Farms project emerged from a group of partners and affiliates, including Grove Farm, Finistere Ventures, Kamehameha Schools, Maui Land & Pineapple and Ulupono Initiative. The group conducted grass trials statewide to determine the best site for a rotational-grazing pasture based dairy. In addition to the grass trials, HDF coordinated with landowners of agriculturally-zoned lands in the State, as well as the Department of Agriculture, the Agribusiness Development Corporation, and the Trust for Public Land. The broader team identified, toured and evaluated six parcels of sufficient size: two on O'ahu, two on Hawai'i Island; and two on Kaua'i. Kaua'i was found to be the optimal location, as it met all the operational requirements for pasture-based dairy:

- Relatively flat, contiguous acres to move cows with minimal stress,
- Soils suitable to efficiently utilize applied nutrients for growth of forage,
- Adequate water for irrigation and operations,
- Suitable climate conditions for animals and grass growth,
- Agricultural-zoned land available for 20 years or more of sufficient acreage to support an economically viable dairy, preferably IAL, and
- Access to required operational support elements (trucking, pasteurization, work force, etc.).

In response to comments on the Draft EIS, Ulupono Initiative again searched for agriculturally-zoned land with potential long-term availability that may have become available in the past few years. An additional 1,300 acres of Grove Farm property on Kaua'i in the Māhā'ulepū area were recently vacated by Pioneer Seed Company. These fields are closer to resorts and residences, and do not provide further benefit to the project or community than the HDF site evaluated in this EIS. Alexander & Baldwin announced in January 2016 that Maui lands in sugarcane will be transitioned to diversified agriculture in the future. However, water rights and access for diversified agriculture must be settled through a forthcoming process, and water availability is currently unknown. Thus Ulupono Initiative, which conducted the research, is unaware of any new property meeting the requirements for a pasture-based dairy that has become available since its initial evaluation.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 18, 2016

To: Hawaii Dairy Farms

HDF@Group70int.com

Cc: info@fmpr.net, amy@ulu pono.com

Subject: Viability, Sustainability, Feasibility for Kauai

I am responding as a silent majority that has reflected on the past months of pros and cons of your HAWAII DAIRY FARMS project and the DEIS findings you presented as a means of clarifying and engaging environmental issues.

I have read newspapers, social media input, public ads, etc., regarding HAWAII DAIRY FARMS. The opposition group that has commenced to fabricate lies, misleading information and total lack of concern for fostering truth in information aspires me to respond. Misleading information leads to uneducated opinions and hostile innuendo. One innuendo stands out—the use of the term “biting flies”. Here on Kauai, we don’t have biting flies. Our cattle flies are black, that live in warm areas, and annoy cattle by laying their larvae. The opposition flies sound bites around (pun not intended) that have no basis or credibility.

Kauai is an agricultural community with visitor destinations that lends itself to the beautiful, often pristine, areas like Po’ipu. The agriculture in other areas of Hanalei, Kealia, Kapa’ea, Lihu’e, Lawa’i, Koloa, Kekaha, Waimea, etc. proves that the two diametrics can achieve harmonious success if both sides are educated and informed along with guidelines and regulations. Good faith and the

spirit of truthfulness results in unified coexistence even though ideologies differ.

Your efforts to engage the local community demonstrates your willingness to be a part of a viable solution that promotes good relations and lasting partners.

Kauai must seek ways to diversify our economic base, sustain our autonomous food production as an island economy, and be business friendly for future opportunity and job diversification for our children and grandchildren.

I look forward to seeing your operation succeed and your good business practices impact our economy.

Regards,

Bronwyn Ebesu Farias

msble0515@yahoo.com



Comments to the HDF DEIS

Letters mailed to the following:

Attn: Laura McInyre (808) 586-4337
State of Hawaii, Department of Health
1250 Punchbowl Street,
Honolulu, HI 96813
doh.epo@doh.hawaii.gov

Attn: Jeff Overton (808) 523-5866
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813.
HDF@Group70intl.com

Hawaii Dairy Farms, LLC.
P.O. Box 1690
Koloa, HI 96756-1690
jim@hawaiidairyfarms.com

July 25, 2016

Matthew and Susan Feldmeir
Unit 620
1831 Poipu Road
Koloa, HI 96756

To All Concerned,

We are adamantly opposed to placing the proposed HDF operations in the Maha'ulepu Valley.

We purchased our property in Nov. 2009, initially used as an investment property and eventually a retirement home. Currently, we live and work in the SF Bay Area, but spend an average 3 weeks in Poipu each year. Our Poipu home will be located approx. 2.5 miles from the proposed HDF. Our retirement years are just a couple years away, but after decades of timeshare ownership at the Marriott Kauai Beach Club, when making a decision on retirement location, we chose to invest in Poipu because of the beautiful natural surroundings, including the Maha'ulepu Valley backing the most beautiful beach in Kauai, accessed by the Makawehi Cliffs Trail, one of our favorite hikes. The attractiveness of the South Shore and the entirety of that pristine natural beauty is threatened by the proposed HDF.

We have read the 299 pages of DEIS as it was submitted in May 2016, and these are comments on just a few issues, which we feel are the most impactful issues, but inadequately addressed in the HDF DEIS.

- 1) **Section 4.15 Demographic and Economic Conditions** – An honest assessment of the most probable DEC impact of the proposed HDF should end any consideration of the proposed HDF -

immediately. As listed, on page 237 of the HDF DEIS in Table 5-7, County of Kauai General Plan, Item G - A Vibrant, Stable Visitor Industry, "...residents agree that a healthy, well-managed visitor industry is a major contributor to the quality of life on Kauai". Reading the contents of the HDF DEIS, detailing each of the identified adverse impacts from the proposed HDF and the mitigations measures proposed by HDF to address these clear and real threats to the Kauai Visitor Industry, one can only conclude that the proposed HDF, located in the Maha'ulepu Valley will result in very real and immediate damage to the visitor industry on the South Shore. To state the obvious, the thousands of visitors who chose to come to Poipu have a choice of where to vacation. A single vacation experience with exposure to i) polluted ocean water and beaches, ii) biting flies on Poipu Beach, iii) an ever present stench from the proposed HDF, will be the last time visitors would ever consider a vacation in Poipu. The South Shore economy will collapse.

- a. Are the government officials of the State of Hawaii and the County of Kauai willing to risk a permanent and irreversible 20% reduction, (and potentially a 50% reduction) in assessed property values, which currently brings \$28.6 million annually into the County Budget? Allowing the proposed HDF, yields the very real probability of reducing County Tax Revenue by \$5.7 million (and potentially \$14.3 million). And risking this level of economic damage so that the County can receive \$51,000 of incremental annual revenue from the HDF? (reference pg. 180 of HDF DEIS Report of May 2016)
- b. Are the government officials of the State of Hawaii and the County of Kauai willing to risk the current employment of over 2,600 Kauai residents with good paying jobs supporting the South Shore tourist industry, so that the County can actualize 22 incremental direct and indirect jobs on Kauai from the proposed HDF? (reference pg. 180 of HDF DEIS Report of May 2016)?

2) HDF DEIS as submitted and subsequent revisions to the Waste Management Plan – The

calculated decisions and actions of Group 70 and the HDF owners and executives of first submitting the HDF DEIS Report, and then separately submitting a revised Waste Management Plan continues a historical pattern of disregard for the laws of the State of Hawaii and the intent of those laws to provide the public with a complete assessment of the true nature and extent of the economic and environmental damage resulting from the proposed HDF. The elected and appointed officials of the State of Hawaii, sworn to protect the interests of the citizens of Hawaii, have only one recourse, namely to invalidate the HDF DEIS as submitted in May 2016, and require the HDF and Group 70 to resubmit a revised HDF DEIS that reveals the true intentions of the HDF to inflict serious damage to the economy and environment of Kauai. The HDF pattern of manipulation to hide the truth from the public has continued from the earliest stages of this project right through to the HDF DEIS

- a. 2014 – HDF begins infrastructure construction for dairy farm operations in advance of securing the required permits from the County of Kauai, as evidenced by Mr. Garmatz having testified about numerous construction activities that have occurred at the site, including the March 2014 installation of approximately 1000-1500 feet of underground irrigation piping which is connected to a functioning irrigation pivot. Mr. Garmatz signed an August 14, 2015 letter, along with its most recent NPDES stormwater permit application to DOH stating that "land disturbance associated with this project as listed in

the NOI has not commenced, including but not limited to, preliminary site construction such as installation of fencing and irrigation systems." Subsequent depositions and fact finding determined that statements on permit applications submitted by HDF owners and executives were clearly false.

- b. 2015 – in HDF's May 7, 2015 application materials, Mr. Datta certified that the information provided in the NOI did not contain "after the fact" discharges. That May 7, 2015 application specifically listed certain activities that HDF wished to be covered under the NPDES permit, including, inter alia, "trenching for and installation of new potable water distribution system for livestock consumption through watering facilities and concrete troughs." Contrary to that certification, Mr. Garmatz testified in deposition that approximately 160 watering troughs had already been installed at the site, with ground-disturbing water lines installed to approximately 40 of the troughs.
- c. 2016 – HDF releases the HDF DEIS Report and then separately issues a revision to the WMP, creating inconsistencies in the level of ecological damage inflicted by the pollution from the proposed HDF, and once again attempting to hide from the public, true nature and extent of damage that will occur.

3) **Section 4.19.2 Odor Assessment** – I have read the HDF DEIS Section 4.19.2 Odor Assessment. Beyond a baffling discourse about AERMODs and OU /m3, I am challenged to find anything in this section which clearly addresses odor assessment. To adequately assess the true impact of this critical issue, I would suggest that any government official, responsible for making a decision on the proposed HDF do the following:

- a. Come to Poipu for a morning walk on any random selection of days. Walk the beautiful Poipu Greenbelt from Pee Road down towards the Grand Hyatt. Once on the bluff overlooking Ship Wreck Beach, with the Grand Hyatt to your left and Poipu Sands to your right, stick your nose in the air and take note of what you smell.
- b. On the majority of those morning walks you will smell a distinctively "horse-barn" smell, whose source is the CIM Stables to the east. The CIM stables seems to have about a dozen well-tended horses and with prevailing winds you can clearly smell that CIM horse barn odor.
- c. Now look again at the HDF DEIS page 95, Prevailing Wind Speed and Direction, juxtaposed on the map on HDF DEIS page 110 Dairy Distances from Development.
- d. There is no amount of gobbledy-gook about AERMODs and OU /m3 that will convince any reasonable person that the odor of a committed herd size of 699 dairy cows, and ultimately the contemplated herd size of 2,000 cows, with manure and urine distributed over 563 acres, coupled with 45 days-worth of stored manure in the effluent storage ponds, coupled with irrigation systems spraying water diluted with effluent, will most certainly result in a constant and unbearable stink at the Grand Hyatt and every residential unit within a range of 10 miles downwind of HDF. Look again at the two maps referenced above – this HDF odor will be omnipresent in all of Poipu!

4) **Section 4.11 Invertebrate Species and Pest Insects** – I have read the Section 4.11 with the results of the study by Dr. Montgomery. For the proposed HDF it is undeniable that placing the

committed herd size of 699 dairy cows, and ultimately contemplated herd size of 2,000 cows, all performing frequent random biological excretion events, distributed over 563 acres will provide fertile breeding grounds for infestations of flies. Any reasonable person will conclude that herds of biting flies will be omnipresent all over Poipu, look again at the HDF DEIS page 95, Prevailing Wind Speed and Direction, juxtaposed on the map on HDF DEIS page 110 Dairy Distances from Development. No reasonable person should be convinced that the integrated Pest Management practices, as a mitigation measure, reliant on dung beetles and sticky tape are adequate protect to the existing conditions, and especially the achievement of the County of Kauai General Plan, Item G - A Vibrant, Stable Visitor Industry.

- a. Are the government officials of the State of Hawaii and the County of Kauai willing to depend on sticky tape and dung beetles to protect a stable and vibrant visitor industry, currently bringing \$28.6 million annually into the Kauai County Budget?
- b. Are the government officials of the State of Hawaii and the County of Kauai willing to depend on sticky tape and dung beetles to protect a stable and vibrant visitor industry, currently employing over 2,600 Kauai residents with good paying jobs?

In summary, we feel that the just four issues we have identified in our HDF DEIS comments:

- A) An economic collapse of the South Shore tourist industry with a direct result of the loss of millions in County of Kauai Tax Revenue, compounded with adverse economic impacts to the State of Hawaii due to the thousands of jobs which will be lost.
- B) The well documented history of the HDF to conceal the truth from the public,
- C) Introduction of an omnipresent stench of manure throughout the South Shore,
- D) Introduction of omnipresent hordes of biting flies throughout the South Shore,

provide more than compelling reasons to reject the proposed HDF, at any level, in any location, that places such dairy operations upwind of one of the most vibrant tourist locations in Hawaii.

From a personal view, we have spent decades working hard to enjoy a pleasant retirement in a beautiful location, and invested a good portion of our assets on Poipu. At the time we made our commitment to the South Shore, we had no idea there would be a future risk that government officials could make a decision which would be so destructive to Kauai quality of life and devastate our careful retirement planning. Very disappointing.

Regards,

Matthew Feldmeir

Matthew Feldmeir

1831 Poipu Rd.

Koloa, HI 96756

Susan Feldmeir

Susan Feldmeir

Matthew and Susan Feldmeir
January 3, 2017
Page 3 of 3

application barely crosses the southern boundary. Due to wind speeds within this range occurring on average 243 days of the year, the 99.5th percentile is reduced to potentially perceiving the odor just 29 hours per year.

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location - paddocks south of the taro farm - the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas. The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

Flies and mitigation measures are described in EIS Section 4.11. In the Kōloa-Po'ipū region, pest fly populations are dependent upon food and breeding sources nearby such as dog, cat, and chicken feces. Beef cattle graze in the region on agricultural lands along Ala Kinoiki Road between Kōloa and Po'ipū, and it is likely the livestock-related flies identified at the HDF site occur in this region as well. Localized controls to reduce pest populations need to address breeding sites in and amongst the food and animal wastes within the area. These mitigation measures will make it difficult for flies to breed, and BMPs will be enforced to address any increase in population, therefore it is expected that the dairy farm will not affect recreational and resort areas.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner



James
Ferguson, M.D.
research consulting services

16511 Federal Heights Drive • Salt Lake City, Utah 84103
Tel: 801-359-0604 • Cell: 801-580-0861 • Fax: 801-531-6608 • Email: dfj@jferguson@yahoo.com

June 11, 2016

Jeffrey Overton, AICP, LEED PC
Principal Planner
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4398

Jeffrey Overton, AICP, LEED AP (Group 70), Governor Ige, Chairman Enright, Bridgett Hammerquist and others

RE: Hawaii Dairy Farms Environmental Impact Statement

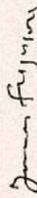
Gentlemen,

Thank you for sending me a copy of your Environmental Impact Statement dated May 27, 2016. I note from your letter head the lack among the principals and the two Members of Council, of anyone with degrees in the areas of question, agricultural sciences and animal husbandry.

The studies quoted all use modeling which is based on assumptions that may not be valid for the area of concern in Mahaulepu valley, for example the sections dealing dust and odor, with areas of concern overlooked like the intrusion of nitrates into the Kōloa region water supply as has been seen in Southern Idaho and Western Washington down flow from industrial dairy farms and the resulting birth defects in human infants. "Precision agriculture and agricultural technology" are largely self serving myths. There is no discussion in the environmental impact statement of the threat to prehistoric ruins, and the proliferation of insects like biting flies, biting midges, and mosquitoes that can serve as vectors for many diseases. This danger was sufficiently well documented that on February 16th of this year Governor Ige declared "a state of emergency to fight mosquito borne diseases." These include dengue, zika, and chikunguna spread by several of the six endemic species of mosquitoes in Hawaii in addition to leptospirosis that may have resulted from previous attempts with factory scale agriculture. Although there is little doubt that 11 jobs will be created by this project, there is no mention of damage to the existing tourist based economy and the consequent loss of property values and tourist based jobs which far exceeds eleven.

Finally, if the project fails, who is responsible for the clean up and site restoration. Will group 70, few of whom live in the Koloa-Poipu area, pay for remediation, or will the "locals" be stuck with another failed dairy farm, though perhaps on a greater scale than the one than the one that failed some years ago in Wianmia.

Sincerely,



James and Susan Ferguson, for Ohana Properties LC.



January 3, 2017

James Ferguson, M.D.
1611 Federal Heights Drive
Salt Lake City, Utah 84103
drjimferguson@yahoo.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Dr. James Ferguson:

Thank you for your email of June 11, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Conventional feedlot dairies typically concentrate mature dairy cows in barns 24 hours each day, 7 days a week, and some offer no natural light and air. Cows are fed grains, hay and/or silage, a fermented high-moisture stored fodder made from field crops. Fermentation is often done on-site by compressing cut green vegetation and covering or baling it in plastic film until the material is palatable and digestible by cows. The fermenting process produces odors described as: like ethanol or vinegar; rancid or fishy; or moldy or musty. The large volume of manure generated must be collected, moved out of the barn and stored. Effluent from the waste ponds may be sold for use on nearby crop-producing acres; or waste material may be dried to create bedding for cows in the barns. Consolidating and moving dried manure with heavy equipment creates particulates (dust) that becomes airborne. The very large waste lagoons and drying animal waste pose the potential for polluted water runoff and an increase in vector insects such as flies, which can extend well beyond the property boundaries, thereby affecting nearby properties with negative impacts.

Successful pastoral dairies exist at numerous locations in New Zealand, as well as suitable farming regions in the United States. Several rotational grazing dairy operations located in Florida and Georgia operate successfully, with farms containing over 2,000 animals. Successful rotational grazing dairies also exist in Maryland, North Carolina, and Missouri. Numerous articles and publications on rotational grazing dairies are cited in Progressive Dairyman and other industry news sources.

PRINCIPALS

Francis S. Oda, Arch.D.,
FAA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainageway (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 *Geology of Māhā'ulepū and Vicinity* displays the volcanic geological history of the area.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additionally, setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

As part of the EIS process, the HDF project is subject to a historic preservation review by the State Historic Preservation Division under Hawai'i Revised Statute Chapter 6E and Chapter 13-284. An Archaeological Inventory Survey (AIS) and a Cultural Impact Assessment were conducted by Scientific Consultant Services for the proposed project. Sections 4.7 and 4.8 of the EIS provide an evaluation of archaeological and cultural resources, with the full reports in Volume 2, appendices G and H.

Traditional and historic use of the Māhā'ulepū area includes intensive sugarcane cultivation throughout the entire valley (including the project area), as evidenced by the infrastructure in the valley. Early 20th century maps also document the extent of the fields throughout the Kōloa area, showing the entirety of the current project area consisted of sugarcane lands. Based on the research and comments received from the community, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights or any ethnic group related to numerous traditional cultural practices will not be impacted by establishment of the dairy.

The State Historic Preservation Division accepted the AIS on December 19, 2016 (Appendix G). SHPD concurs with the significance assessments and mitigation recommendations in the AIS, which identifies the 14 plantation-era sites within the project area as significant only under Criterion d (information potential). The letter states no further work is recommended for these sites (50-30-10-2251 through 2262). Two sites outside the Project Area, an enclosure (Site -2250) and a petroglyph complex (Site -3094), were assessed as significant under Criterion d (information potential) and e (cultural value). The SHPD letter states that the current proposed project will not affect these two sites, and no further mitigation is recommended for the project.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaua'i and those species already in Māhā'ulepū Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Māhalepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAJ>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

FW: Kauai Dairy Farm

From: Michaela Forbes [mailto:michacforbes@gmail.com]
Sent: Thursday, July 14, 2016 12:42 PM
To: mayor@kauai.gov; councilmembers@kauai.gov; senkouchi@capitol.hawaii.gov; repkawakami@capitol.hawaii.gov; reptokioka@capitol.hawaii.gov; repmorikawa@capitol.hawaii.gov; McIntyre, Laura <Laura.McIntyre@doh.hawaii.gov>; DOH.EPO <DOH.epo@doh.hawaii.gov>
Subject: Kauai Dairy Farm

Aloha Honorable Mayor Carvalho and Honorable State Representatives:

I am writing to voice my critical concern over the planned Dairy Farm in Mahaulepu Valley. I am a resident of Koloa who works, plays, and is sustained by the existing businesses on the South Shore. Upon reading the Environmental Impact, I am very concerned that my home, source of income, and where I enjoy the beaches and hiking trails with my family will be damaged.

On weekends, our family as well as other locals and visitors enjoy the many beach spots in Poipu. With the cows producing 122 pounds EACH of manure per day, the amount of waste of 699 cows is equal to the human population of 98,000. This is 40% larger than the current total population of Kauai! There is no guarantee or program mentioned in the EIS that will ensure this waste is not discharged into Waiopili Stream which goes into the ocean.

My husband and I both work at Hyatt. The property has been a source of our income for the past 10 years and provides the money we need to live on this island paradise. Our guests pay top dollar to stay at one of the very best resorts in the world. A dairy farm in close proximity will significantly affect our ability to attract and maintain our current level of business because of the following reasons:

- The smell and air quality – All attractions like Kauai ATV, horseback riding, enjoy the pool at our resort, enjoying the running paths in Poipu, etc... will be affected by the odor that can travel miles across Koba/Poipu.
 - Run-off affecting Shipwreck and Poipu Beaches – Manure particles will be sprayed and carried into the ditches downstream into the ocean with storm water flows. It will destroy the streams and ocean.
 - Increase of insects: manure will bring in an increase of flies and the dairy will also introduce a new species to the fragile ecosystem—a breed of dung beetle.
- The draft EIS states that due to Kauai's rural nature, most homes are within one mile of some agriculture activity, which may be true... but we are not within one mile of an INDUSTRIAL animal operation. My neighbors have ONE pig and FIVE dogs and I can smell the foul waste. I simply CANNOT imagine the smell of 699 cows, growing into a desired size of 2,000 cows just a few miles from where I work, live, play, and grow my family. The EIS statement of "no noticeable odors, flies, discharge or waste will reach resort or residential areas" is completely false and shows how **disconnected** this planned operation is to the entire community.

Kauai is truly a magical island that our people and visitors love for its untouched, balanced nature.

Thank you for considering my concerns and I trust that you will meticulously analyze the Dairy plan so that we remain balanced environmentally and economically.

Respectfully,

Micha Forbes
(808)388-9133



PRINCIPALS

Francis S. Oda, Arch.D.
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruitola
ACP, LEED AP

James L. Stone, Arch.D.
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Pu Kim
IBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACP

Hiroshi Hida
AIA

January 3, 2017

Micha Forbes
michacforbes@gmail.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Micha Forbes:

Thank you for your email of July 14, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

HDF will be the first dairy in Hawai'i to employ rotational-grazing, which utilizes manure as a valuable resource. This is a fundamental difference and advantage over conventional feedlot dairy operations, which typically have insufficient land to recycle the nutrients for uptake by forage plants and instead rely on imported feed and large storage lagoons to hold manure. The rotational-grazing method is cost-effective as it reduces the need to import fertilizer and feed, and minimizes potential impacts to the environment by using 100 percent of the manure as nutrients to grow the majority of the forage for the herd. Benefits of pasture grazing include, but are not limited to, improved soil health, and increased animal health and productivity. The dairy will feature modern facilities and practices that will comply with all applicable Federal and State environmental standards.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainageway (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Waiopili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waiopili Ditch will be improved by active management of the dairy site.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and will allow for evaluation of possible contamination sources.

Unlike a conventional feedlot, dairy facility that must collect and store all manure produces until future disposal, the majority of manure from a pastoral-grazing operation will be deposited directly on the pasture where it will break down and be incorporated into the soil within a one- to three-day period.

Without a dairy in operation, computer-generated modeling was used to determine the potential impact. Results for the committed herd size of 699 mature dairy cows using typical effluent irrigation conditions show that odors may be detectable by 50 percent of the sensitive population once per 200 hours, or just 44 hours per year, within one-quarter of a mile south of the dairy farm boundary. For wet periods, odor could extend approximately 2,151 feet (less than one-half of a mile) beyond the southern boundary. The closest public use areas beyond the odor extent south of HDF are a stable and golf course, both approximately 0.5 miles further south, and the closest residential and resort units are 1.3 miles beyond the possible odor extent (EIS Figure 4.19-1).

HDF has elected to restrict slurry application to periods when wind speeds are between 9 and 20 mph. With application at the most impactful location, paddocks south of the taro farm, the odor from slurry application barely crosses the southern boundary. Due to wind speeds within this range occurring on average 243 days of the year, the 99.5th percentile is reduced to potentially perceiving the odor just 29 hours per year.

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location – paddocks south of the taro farm – the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas. The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.1.9.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaua'i and those species already in Mahaulepu Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.1.1.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Comments on EIS for dairy at Mahaulepu, Kauai

Margery Freeman <freemanmargery@gmail.com>

Wed 7/20/2016 4:06 PM

To: HDF <hdf@group70int.com>;

Jeff Overton, Group 70 International

925 Bethel St., 5th Floor Honolulu, HI 96813

HDF@Group70int.com

Mr. Overton, Group 70 International,

Quite a few of the questions I asked about the dairy in my Feb. 20, 2015, letter were not answered by the stock paragraphs that were sent as a response. The point of an EIS, of any type, is to answer questions the public brings up. This was not done, so let's try again to get the questions answered.

Please show your economic study so I can see what the chances are for the dairy to be a success. Since you are business people you must have these studies in detail. Include:

1. How much milk is needed in Hawaii?
 2. What will be the cost, in stores, of your milk contrasted to mainland milk?
 3. If the cost of mainland milk continues to fall will you be able to lower the cost of your milk also?
 4. What is the lowest cost of your milk that will still make a profit? Take into account the probable rise in transportation costs, feed costs and your monitoring costs.
 5. Please make the results of your studies available to the public now.
1. Since cows must be milked more or less on time what happens when local electricity is cut off? Will you have enough generator capacity to milk without the island electricity?
 2. Where will the new electric poles be located and how many needed? Exactly where will the buildings be located, including milking parlor, offices, storage areas, electric poles, barns for calves, housing, if any, etc. There is no way to tell what can be seen without these answers.

Details on how the area will be returned to its present state if/when you go out of business. Please include removal of fencing, removal of all buildings and their foundations, removal of introduced grasses and replanting of local grasses, removal of electric poles, removal of any added roads, and a timetable of when each will be finished.

The above are only some of the questions still unanswered by the latest EIS and they must be answered before the EIS is accepted. Please answer the questions in detail not just with stock paragraphs that are already written.

I am sending this in time to be under the deadline as set up for this EIS. However, I am sending under protest since there have been changes in the EIS behind closed doors, and unseen by the public. How can anyone comment on a document that is changed in secret?

To be done correctly the EIS should be changed to include everything, then sent out to the public, then 45 days for comments starting at that time.

Awaiting your answers.

Margery Freeman Kauai

freemanmargery@gmail.com



PRINCIPALS

Francis S. Oddy, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yulín
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
IBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Margery Freeman
freemanmargery@gmail.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Margery Freeman:

Thank you for your email of July 20, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

A simple analysis of current population and potential fluid milk demand in the State of Hawai'i indicates the entire size of the market is approximately 22,000 cows (HDOA, 2013). Based on U.S. per capita consumption rates, fresh milk consumption in Hawai'i is estimated at a potential 597,000 gallons per week. Meadow Gold currently experiences demand for approximately 400,000 gallons per week. The difference is supplied by packaged milk shipped directly by grocers and big box retailers.

Dairy operations in Hawai'i face significant hurdles, including a monopoly milk processor, limited breeding stock, and a need to educate the consumer on benefits of truly local milk. For Hawai'i to re-establish its dairy industry, it will require the introduction of advanced dairy farming technologies, efficient operational processes, and monitoring to ensure environmental protection standards are upheld. For more information on the purpose and need for the project, see EIS Section 2.0.

Under the proposed action, HDF would sell raw milk wholesale to a processor and packager. Milk processing, including pasteurization, bottling, and packaging of milk, would be done independently of the dairy. For more information on processing, see EIS Section 3.6.

While it may be ideal for Hawai'i Dairy Farms to have an on-island milk-processing partner, it is logistically, financially and technically difficult to start such a business in conjunction with developing the first pasture-based dairy farm in the State. The most feasible and sustainable plan is to process HDF's milk with an existing provider on O'ahu or Hawai'i Island. In the future, on-island processing may be a more feasible option. For more information on the purpose and need for the project, see EIS Section 2.0.

Electrical power will be provided through an overhead service connection to the existing Kaua'i Island Utility Cooperative (KIUC) grid. An existing overhead line along the farm road mauka of the facility will feed to a new three-phase, 75-300 kVA transformer via a subgrade duct bank. Electrical lines to the dairy facilities will be run in a concrete-encased conduit routed underneath the access road. Additional power will be supplied by photovoltaic (PV) panels mounted to structure roofs, with a total generation capacity of 500 kW power. Gasoline and diesel fuels will be stored in above-ground tanks. Fuels will be used in farm equipment, and will be available if needed to power an emergency back-up generator.

For additional information on power, backup generators, and dairy building site layout, see EIS Section 3.0.

The County of Kaua'i General Plan identifies the HDF site as agricultural land in a region consisting of open space, parks, and conservation lands in the mountains and along the coast. The roadside views along the Kōloa Bypass Road to Po'ipū provide vistas of the rural landscape that remain from Kōloa's agricultural roots. The HDF site, while in keeping with the non-developed portion of Kōloa Bypass Road, will be visible to only those traveling the private access roads with authorization to access the privately owned agricultural lands surrounding the HDF site. EIS Section 4.5 addresses potential effects to public scenic views.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner



July 17, 2016

From: Robert C. Fry, DVM

To: Whom it may concern

RE: Hawaii Dairy Farms DEIS

I am a veterinarian specializing in the area of dairy cow nutrition managed through the practices of managed grazing. Hawaii Dairy Farms desires to operate a dairy in the Mahaulepu Valley as described in detail in the draft Environmental Impact Statement made available to the public on June 8th 2016.

It is clear to me that the business model proposed by Hawaii Dairy Farms as described in the DEIS will be a benefit to the people on the islands of Hawaii, the cows occupying the land, the soils in the Mahaulepu Valley, and the regional economy on Kauai. The proposed project is very sustainable in multiple ways: environmentally, socially, economically.

I fully support the acceptance of Hawaii Dairy Farms DEIS by the Hawaii Department of Health.





January 3, 2017

Shawn Garcia
shawneko@aol.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Shawn Garcia:

Thank you for your email of June 10, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The development and long-term operation of HDF will be in full compliance with its agricultural State Land Use District designation, ALISH classifications, and County zoning. The dairy farm will embody the intent of the IAL designation per the Hawai'i State Constitution, by using these protected lands for the intended purpose of diversified agriculture, food production and agricultural self-sufficiency. HDF's development of a dairy also supports the "secondary intent" for lands in the Agriculture land designation, to provide an opportunity for Kaua'i citizens to reside in an agricultural community.

Unlike a conventional feedlot dairy facility that must collect and store all manure produces until future disposal, the majority of manure from a pastoral-grazing operation will be deposited directly on the pasture where it will break down and be incorporated into the soil within a one- to three-day period.

Without a dairy in operation, computer-generated modeling was used to determine the potential impact. Results for the committed herd size of 699 mature dairy cows using typical effluent irrigation conditions show that odors may be detectable by 50 percent of the sensitive population once per 200 hours, or just 44 hours per year, within one-quarter of a mile south of the dairy farm boundary. For wet periods, odor could extend approximately 2.151 feet (less than one-half of a mile) beyond the southern boundary. The closest public use areas beyond the odor extent south of HDF are a stable and golf course, both approximately 0.5 miles further south, and the closest residential and resort units are 1.3 miles beyond the possible odor extent (EIS Figure 4.19-1).

HDF has elected to restrict slurry application to periods when wind speeds are between 9 and 20 mph. With application at the most impactful location, paddocks south of the taro farm, the odor from slurry application barely crosses the southern boundary. Due to wind speeds within this range occurring on average 243 days of the year, the 99.5th percentile is reduced to potentially perceiving the odor just 29 hours per year.

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location – paddocks south of the taro farm – the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas.

PRINCIPALS

Francis S. Oda, AIA, AIA, AIA, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Saaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucicola
AICP, LEED AP

James L. Stone, AIA, AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
IBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hidb
AIA

Shawn Garcia
January 3, 2017
Page 2 of 2

The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown. Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

HDF considered comments provided by Exponent to the odor results for the dairy contained in the Draft EIS: Air Emissions and Odor Evaluation Technical Report (Arcadis, May 2016). Exponent prepared its own odor emission report based on two alternate methods, using different assumptions on the timing of effluent irrigation and slurry application, as well as different sources for odor emission rates, and comparing odor results against a lower threshold than that used by Arcadis. Exponent argued the threshold "was not considered appropriate for a sensitive population such as hotel guests at a resort area." The HDF air quality and odor technical expert, Arcadis, reviewed Exponent's comments and odor report and recommended refining the odor model to depict both the "typical" irrigation effluent odor and the "wet condition" irrigation effluent odor. Additionally, Arcadis adapted the data used by Exponent (Jacobson et al., 2001) to account for differences in diet and for the Kikuyu thatch that will receive manure at HDF as opposed to a conventional compacted dirt feedlot which was used by Exponent.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Comment Letter on HDF proposed dairy in Koloa Kauai

Heather George <watergirl321@hotmail.com>

Mon 7/25/2016 11:34 AM

To:HDF <hdf@group70int.com>; doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; jim@hawaiidairyfarms.com
<jim@hawaiidairyfarms.com>;

To Whom It May Concern,

I am a resident of Koloa on Kauai, and am deeply concerned about the potential impacts of the proposed dairy in this region. I have researched this issue, and read many reviews of this project and professional comments related to the Draft EIS released earlier this year.

Personally, I regularly visit and enjoy the Maha'ulepu area – by biking, hiking, or driving, and I always see other local residents and visitors also enjoying and recreating here, including on the scenic trails and on the natural and peaceful stretch of beach. This is a beautiful and highly used recreational region, and should be protected from the creation of a series of environmental problems that there would be no thorough and reasonable way to solve if the dairy is allowed to exist.

My concerns are the recreational water quality, air quality, and nuisance effects of this operation – including bacteria pollution, odors, biting flies, as well as other potential impacts. When I am out there, I often see surfers, swimmers, kite surfers, and fishermen who are in close contact with this water, which will be affected and unhealthy whenever there is any kind of excess runoff into the ocean from this property – especially near the already severely polluted Waioipili stream area. Beyond human use and enjoyment, I am also concerned about the dangerous impacts on marine wildlife in the area – including corals, fish, and marine mammals, because of the nutrients and other pollutants in the runoff which are widely known to have negative environmental impacts at similar operations near coastlines.

I am also concerned about water quality and quantity in the aquifer here, which provides our region with drinking water. If this aquifer gets too polluted and/or diverted for dairy operations to provide enough potable drinking water, we will have a serious problem on our hands – which is only going to be magnified if drought conditions exist, as has recently happened on the westside. This fresh water source is simply too valuable to this populated and growing region to be potentially tainted and unusable!

Finally, as a property owner, I am also very concerned about local property values here – which would automatically be significantly lowered, as has been proven in other areas of the country such as North Carolina, where housing is located in close proximity to these types of operations.

Overall, this dairy is an extremely bad idea – for our region, for Kauai, and for the state of Hawaii: the benefits of a few full time jobs and milk that is processed off island (and not guaranteed to directly benefit Kauai or the state) simply DO NOT outweigh the long term and irreversible risks to the south region, and all of our island. This is obvious to so many of us who live, work, and recreate here, and I hope that plans for this operation are halted immediately! Thank you for your consideration of these comments.

Heather George
Koloa, HI



PRINCIPALS

Francis S. Oddy, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Niheli
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Rucicola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ky Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Heather George
watergirl321@hotmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Heather: George:

Thank you for your email received July 25, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft-EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waioipili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of both physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 *Nearshore Marine Waters*, and Appendix F.

The assertion that "algae blooms" will occur due to elevated nutrients from stormwater has not borne out in the nearshore marine environment off Waioipili Ditch. Even during the typical low rainfall conditions, there is always a discharge from Waioipili Ditch to the ocean, and water quality sampling has documented that the ditch water is elevated in nutrients. Therefore, it would be expected that algae blooms would be occurring under current conditions, but inspection of the nearshore mixing zone indicates that such blooms are not occurring.

A large body of scientific literature documents that, contrary to popular belief, reef corals do not necessarily require low nutrient water. In Hawaii, Atkinson et al. 1994 showed that a multitude of corals from around the Pacific Basin growing at the Waikiki Aquarium in high nutrient marine groundwater have higher linear growth rates than corals in the wild. There is no reason to expect that a short-term exposure of a very limited community to elevated nutrients will result in any negative impacts to corals in the mixing zone of Waipii Ditch and the ocean.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kāua'i community, and will allow for evaluation of possible contamination sources.

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 *Geology of Māhā'ulepū and Vicinity* displays the volcanic geological history of the area.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

Comments by Kilpatrick about the adverse economic impacts of the dairy appear to be based on nuisance parameters and footprints of conventional feedlot dairies found on the mainland, not on those of the planned Dairy which will be a modern facility that uses rotational pasture-grazing. Results of technical studies presented in this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise or water discharges will impact resort and residential areas. The review of property values adjacent to beef cattle operations in the Kōloa region reveals newer homes with large square footage in a luxury residential community with 2016 assessed values of \$1,297,150 per lot, to \$2,893,100 per lot with a home. The proposed dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUJAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

HDF DAIRY

Debborrah Gia <gia96765@gmail.com>

Wed 7/13/2016 1:49 PM

To: doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; HDF <hdf@group70int.com>; jim@hawaiidairyfarms.com <jim@hawaiidairyfarms.com>;

c:friendsofmahalepu@hawaiiintel.net <friendsofmahalepu@hawaiiintel.net>;

As a resident of Kauai and avid swimmer of the south shore, I am asking you to please look at the EIS study and realize what this proposed dairy site will mean for the island of Kauai. The location of the proposed dairy is bad as the ground is basically lava tubes and can not absorb the fecal waste and urine from the cows. The site is too close to a pristine beach area that provides recreation to tourist and locals. Please consider what the discharge from this proposed facility will do to the fish and marine life. The unending smell and flies will be a burden, especially when we have Kona's, which are happening more often these days.

We do not need the milk here on Kauai especially at the sacrifice the citizens of the south shore of Kauai will have to ENDURE if the dairy is allowed to be built.

In closing, a dairy needs to be in an area that will sustain the dairy and not be a burden or health hazard to the surrounding community and island of Kauai in general.

Mahalo for your consideration,
Debborrah Gia
Kalaheo, Kauai



PRINCIPALS

Francis S. Ode, Arch.D.,
FAIA, ACP, LEED AP
AIA

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihel
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Rucicola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Debborrah Gia
gia96765@gmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Debborrah Gia:

Thank you for your email of July 13, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Soils in the Māhā'ulepū sub-watershed are formed by the poorly permeable alluvium that covers the valley floor. Alluvium is highly weathered lava that forms silty clay layer, which is described as "poorly drained". The classification of soils as poorly drained indicates a relatively slow rate water movement within soil and to surrounding areas. Poorly drained is not an indication of low or poor infiltration. Infiltration refers to the ability of water to enter the soil surface, whereas "drainage" refers to the movement of water within or from the soil profile. This slow movement allows for attenuation (reduction) of bacteria, pathogens, and nutrients from manure.

The thick thatch formed by Kikuyu grass greatly improves infiltration of applied water and effluents, as additions of irrigation water and liquid effluent will microbiologically energize the surface soil (EIS, Section 4.11). Stimulated populations of microorganisms are very effective in inactivating pharmaceuticals and additives due to the reduced half-time resulting from enhanced immobilization and degradation by the superactive microbiological community. Microbes such as mycorrhiza effectively transport a variety of needed nutrients effectively into plants, including nitrogen and phosphorus.

Debborrah Gia
January 3, 2017
Page 2 of 2

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waiopili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of both physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 Nearshore Marine Waters, and Appendix F.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kauai community, and will allow for evaluation of possible contamination sources.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm, LLC. Lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix I.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUA>.

Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

COMMENTS ON DEIS FOR HAWAI'I DAIRY FARMS, LLC

Farouz Gipson <farouzg@gmail.com>

Mon 7/25/2016 2:32 PM

To: doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; HDF <hdf@group70int.com>; jim@hawaiidairyfarms.com <jim@hawaiidairyfarms.com>;

6 attachments

Federal Court Order- FOM Clean Water Case.pdf; ATT00001.htm; HDF WMP - Revisions.pdf; ATT00002.htm; 2016.6.21 Charlie Tebbutt letter.pdf; ATT00003.htm;

July 25, 2016

Attn: Laura McIntyre (808) 586-4337
State of Hawai'i, Department of Health
1250 Punchbowl Street,
Honolulu, HI 96813
doh.epo@doh.hawaii.gov

Attn: Jeff Overton (808) 523-5866
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813.

HDF@Group70int.com

Hawai'i Dairy Farms, LLC.
P.O. Box 1690
Koloa, HI 96756-1690
jim@hawaiidairyfarms.com

Re: COMMENTS ON DEIS FOR HAWAI'I DAIRY FARMS, LLC
Dear Ms. McIntyre and Mr Overton,

My name is Farouz Gipson. As a concerned citizen, I submit these comments in response to the Draft Environmental Impact Statement (DEIS), prepared 5/26/16 by Group 70 International, Inc. on behalf of Hawai'i Dairy Farms, LLC (HDF) for the latter's proposed "Agriculture (Dairy) use for dairy buildings, roads, sheds and ponds, paddocks, cow races, farm roads, irrigation system, water storage, drainage ways, setbacks/vegetated buffers." (1-2) in Maha'ulepu Valley, Kauai, Hawaii.

I appeal to your duty as a civil servant to uphold the Public Trust Doctrine which requires that such a proposal only be "implemented after a thorough assessment of the possible adverse impacts the development would have on the State's natural resources." Kelly, 111 Haw. at 231.

A thorough assessment reveals that HDF's DEIS, in all good conscience, should be rejected. First of all, the

DEIS should be summarily rejected due to the fact that 24 significant dairy Waste Management Plan (WMP) "revisions" were quietly delivered to the State Department of Health (DOH) Waste Water Branch Chief, Sina Pruder, PE, on June 1, 2016, one week before the public release of this DEIS on June 8, 2016.

In a letter to Sina Pruder, PE, dated May 25, 2016, Paul T. Matsuda, PE, (on behalf of Group 70 International) states that "While the EIS process was progressing, on-going technical studies and field trials were continued for various dairy components, including and not limited to adjustments to the total available pasture area, physical setbacks, inclusion of cows in the nutrient model, and current forage data, improved the nutrient mass balance analysis within the WMP previously submitted to DOH. The following attachment consists of an executive summary and description of those changes." (see attached letter re: HDF-WMP Revisions). There are 24 itemized changes on that executive summary.

Submitting these significant changes without public notification and without respect for due process is in bad faith and to add insult to injury, HDF's DEIS was subsequently filed with DOH OEQC (Office of Environmental Quality Control) June 8, 2016, over one week following their 24 changes. Consequently, there are two separate departments in DOH with conflicting facts and figures about the dairy's waste load (manure and nitrate discharge risk).

This woeful circumstance alone undermines the Public Trust Doctrine and renders this EIS meaningless: "[an] EIS is meaningless without the conscientious application of the EIS process as a whole, and shall not be merely a self-serving recitation of benefits and a rationalisation of the proposed action." HAR § 11-200-14.

HDF's DEIS contains a multitude of insufficient details, errors, contradictions, revisions, obfuscations and omissions, therefore, it fails to satisfactorily address concerns regarding the actual environmental impact the proposed dairy would have on Maha'ulepu Valley despite their many unsubstantiated, unsupported claims to the contrary. I am particularly concerned with HDF's proposal in regards to the dairy's impact on the waters of the U.S.

My main concerns about the water are HDF's alleged, ongoing violations of the Clean Water Act. Judge Leslie Kobayashi has already issued a detailed Ruling in Friends of Maha'ulepu's (FOM's) Clean Water Act citizen enforcement action against Grove Farm and HDF, currently pending before the Hon. Leslie Kobayashi of the Federal District Court for the District of Hawaii (No. 1:15-cv-00205- LMK-KJM). In granting FOM the right to inspect the proposed dairy site, Judge Kobayashi clarifies that the land owner, Grove Farm and tenant, Hawaii Dairy Farms, are incorrect in their contention that they are no longer in violation of the Clean Water Act because they have stopped or suspended construction activities.

The Judge ruled that once ditches, raceways or other conduits are created that enable the run-off of debris, soil, bacteria or other prohibited substances, the Clean Water Act violation continues even though the actual construction activity has been concluded.

This district court has directly addressed the issue of ongoing violations under the Act. Defendants argue that even though they began construction without the permit, they stopped construction and thus ended their violation.

Defendants apparently believe that on the day construction ceases, the violations become "wholly past" under the Gwaltney doctrine. The problem with this argument is that it loses sight of the focus of the Act: the water. It fails to account for the interplay of rainwater and the construction site, an interaction that the Act and its regulatory scheme is intended to manage. It is the discharge of water without permit coverage that violates the Act, not the construction activity itself.

(7 Case 1:15-cv-00205-LEK-BMK Document 89 Filed 02/29/16 Page 7 of 10 PageID #: 993)

The Act defines "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source" 33 U.S.C. § 1362(12). Regulations include under this term "additions of pollutants into the waters of the United States from surface runoff which is collected or channeled by man; . . ." 40 C.F.R. § 122.2. Pollutants include "dredged soil." 33 U.S.C. § 1362(6); 40 C.F.R. § 122.2. Point sources include any "discernible, confined and discrete conveyance." 33 U.S.C. § 1362(14); C.F.R. § 122.2, "including but not limited to,

any pipe, ditch, channel, tunnel, conduit [or] well. . . ." From these definitions it is clear that, once a person creates a conduit for pollutants, no further act is necessary to violate the act, regardless of whether the conduit meets the technical permit requirements. If permit coverage is required for that conduit and is not obtained, the conduit is in continual violation of the act. Notably, neither the Act nor the regulations promulgated under it contain an intent requirement for such violations.

See *United States v. Earth Sciences, Inc.*, 599 F.2d 368, 374 (10th Cir.1979). (see attached Federal Court Order).

HDF claims their industrial dairy will be "zero point source discharge" yet their plan calls for pivot irrigation to spray urine and liquefied manure back onto the pastures. How can they make this claim when Federal Court Decisions and the EPA have held pivot irrigation of manure and urine is by definition a "point source discharge" of animal waste, in violation of the Clean Water Act where ditches, streams and the ocean are likely to be affected?

Furthermore, the New Zealand dairy model is seriously flawed and it was irresponsible of HDF to claim that they were following that model, suggesting that it is a successful dairy model without disclosing the widespread pollution and water degradation problems New Zealand is experiencing from its dairy operations. Reports filed by the Independent Parliamentary Commissioner for the Environment in New Zealand reveals a direct causal link between dairy waste and severe water and environmental degradation. [November 2013 Report by the Parliamentary Commissioner for the Environment, New Zealand: Water Quality in New Zealand: Land Use and Nutrient Pollution Report, Summary and Conclusion, Pages 65-67. The entire report is available at: <http://www.pce.parliament.nz/publications/update-report-water-quality-in-new-zealand-land-use-and-nutrient-pollution>].

Apparently, HDF has abandoned the New Zealand Model yet in this DEIS, HDF still refers to the New Zealand dairy as a model for their Plan (1-4, 2-8, Vol. 1, p. 48). Throughout the document, 100% waste utilization on site is repeatedly claimed even though it was learned that HDF's WMP Plan Revisions, filed with DOH Waste Water, has abandoned the New Zealand model because FOM's lawyer happened to ask the right questions during the farm managers deposition June 14, 2016. See letter of Charlie Tebbutt, Esq. Attached.

Even more disturbing, was the discovery in August of 2014, that NRCS had completed a "Custom Soil Resource Report" released June 5, 2014 for the very site HDF is proposing for their dairy. The NRCS Report and its findings were not disclosed to DOH when the current WMP was filed July 23, 2014 and neither was the State informed that the NRCS had concluded the majority of soil at the proposed farm site was "not well suited" for a land waste application because of the "high" and "very high" risk for runoff due to the primarily clay based soil composition. (see NRCS Report, page 33-38). HDF's DEIS refers to this NRCS Report but fails to address how it will maintain "zero-discharge" and keep "100% of manure on-site" given the nature of the clay based soil, asserting that mitigating factors such as setbacks and dung beetles will sufficiently render the manure into nutrient that will not enter any waterway or groundwater.

The bottom line is that there is sufficient scientific evidence that HDF's dairy farm installation will introduce high volumes of nitrate-rich, untreated solid-waste and urine (euphemistically called "Nutrient" by HDF) into the watershed of the valley which would adversely affect clean drinking water, the county wells, surface water

quality, the ocean, waters of the U.S. and all the biospheric life downstream despite their many unsubstantiated, unsupported claims to the contrary. It is a gross misrepresentation to assert that HDF's activities will improve the soils, as stated in section **1.4.1 Beneficial Impacts**, (1-13 DEIS Vol 1.).

This DEIS asserts no significant detrimental impact, however, as far back as 2014, HDF set out to "prove" the dairy would be safe, rather than objectively determine it's true environmental impact, further violating the spirit of the Public Trust Doctrine. (http://thegardenisland.com/news/opinion/guest/dairy-is-safe-for-the-environment-and-we-will-prove/article_b28963ac-b4d8-11e4-bbab-dfced49b70.html)

Another indication of the result driven aspect of HDF's EIS is the fact that Group 70 International, Inc, who prepared HDF's WMP, is the very same entity that conducted the EIS! How likely is it that, after receiving many thousands of dollars in fees for developing the WMP, Group 70 International will conclude in its EIS that the environment and location was anything other than perfectly suitable? This is in clear conflict of interest.

I ask no more than compliance with our Constitution's mandate that all public officials preserve and protect the natural resources of the State for the people of Hawaii today and in the future.

With regards to nearshore marine waters, section 4.17.3, not only is there no mention of the corals and the reefs at all, there are additional, critical omissions and contradictions with respect to the nearshore marine environment at the proposed site in Maha'ulepū.

HDF admits their site is up slope from Maha'ulepū Beach and that the ditch network crossing their proposed site drains into and flows to the ocean yet they claim that "there will be no substantial effects to marine water quality from the HDF dairy (Appendix F)".

This claim is made despite the fact that "A second ditch parallels to the west the one described above. This second ditch originates in the vicinity of a pond in an area of water wells in the upper west side of the valley.... This ditch then joins a larger ditch known as Mill Ditch (USGS, 1996) carrying water flowing from west to east across the valley within the project area. Mill Ditch turns southward near the center of the valley, passes under Māhā'ulepū Road, and some 460 meters south, joins the first ditch coming down the valley. The two become Waiopili Ditch, with an outlet at Māhā'ulepū Beach." DEIS Vol 2, page 18-19

HDF's proposed site at Maha'ulepū contains and extensive network of drainage ditches that cross HDF's site and ultimately drain to the ocean. Despite HDF's decision in November 2014 to conduct an EIS, and at least 11 tropical storms in 2015, HDF's DEIS claims HDF was unable to assess "numerous straight agricultural ditches that serve the purpose of draining runoff from various pasture areas." HDF admits there will be nutrients discharged into the environment yet apparently made no effort to determine how much water carrying manure and urine would move off their property during rains or heavy storms. HDF's site visit was when the ditches were dry. "Spread across the pastures on the valley floor are numerous straight agricultural ditches that serve the purpose of draining runoff from various pasture areas. These were nearly all dry during our survey, and the network was not fully explored, nor was it determined how these presently all interconnect." DEIS Vol 2, page 19

HDF now admits they must abandon their hallmark claim of "Zero Discharge" even though it is still (contradictory) asserted in the DEIS that "As noted previously, the HDF system is designed to utilize 100 percent of the cows' manure on-site. However, nutrients would be introduced to the HDF site with any use; the Draft EIS identifies the amount of nutrients anticipated from the proposed dairy operations that could pass through to ground and surface waters. Therefore, HDF elected to discontinue use of the term "zero discharge" as it was construed as no nutrients into the system." DEIS Vol 3, page 820

HDF is in no position to form an assessment of the amount of nitrate, phosphorus and bacteria carrying manure and urine that would likely be discharged from HDF's site, when their ditch "network was not fully explored, nor was it determined how these presently all interconnect." DEIS Vol 2, page 19

As stated in this DEIS, the Waiopili, aka Mill Ditch, collects drainage from HDF's pasture area which then runs under Maha'ulepū road, into the Waiopili stream and to the ocean: "A second ditch parallels to the west the one described above. This second ditch originates in the vicinity of a pond in an area of water wells in the upper west side of the valley.... This ditch then joins a larger ditch known as Mill Ditch (USGS, 1996) carrying water flowing from west to east across the valley within the project area. Mill Ditch turns southward near the center of the valley, passes under Māhā'ulepū Road, and some 460 meters south, joins the first ditch coming down the valley. The two become Waiopili Ditch, with an outlet at Māhā'ulepū Beach." DEIS Vol 2, page 18-19.

Serious fecal contaminants are already abundant in Maha'ulepū Valley, documented at chronically high levels for more than 2 years by Surfrider Kauai, Blue Water Task Force. Any added discharge by HDF can only compound an already serious health threat.

Yet another serious omission in section 4.17.2, **Surface Water Quality [4-61] the DEIS states that offshore sampling has "been suspended" and therefore there is no data on offshore water quality.** Hawaii's Department of Health Clean Water Branch (CWB) administers and enforces Statewide water pollution laws and rules. CWB oversees permits for point-source discharge, monitors permit compliance, investigates complaints, and conducts water quality sampling. The CWB Monitoring and Analysis Section is responsible for sampling and analysis in support of Federal Clean Water Act (CWA) §303(d) assessments, §305(b) integrated reports, and §319 non-point source management grants.

A major activity of CWB is water quality monitoring of beaches as initiated under the Beaches Environmental Assessment and Coastal Health Act of 2000 (BEACH), an amendment to the Federal CWA. Additionally, coastal chemistry monitoring of nearshore and offshore waters is conducted for select indicators of water quality, however, offshore sampling has been suspended due to manpower and funding constraints (CWB, 2012). (4-61, Vol 1, page 153)

However, there is data that this DEIS refuses to acknowledge:

"The Kauai Chapter of the Surfrider Foundation began collecting water samples in Waiopili Ditch near the bridge accessible Makauwahi Cave Reserve in April of 2014. Its "Blue Water Task Force" typically collects water samples from the ocean environment, and some streams not tested by DOH.

The group reported high levels of enterococcus to the State DOH and provided its data. However, for DOH to utilize water quality data provided by a third party, the party must furnish its Quality Assurance Project Plan, chain of custody, and laboratory reports. Evaluation of the third-party data by DOH CWB determined it did not meet CWB quality assurance/quality control requirements, and it could not be used for regulatory purposes.

CWB had not conducted water quality sampling for either nearshore recreation waters at the terminus of Waiopili Ditch, or of surface waters in the Māhā'ulepū Surface Water Hydrologic Unit as the remote areas are on private lands. Complaints from the public citing the high levels of enterococcus in Waiopili Ditch and concerns about the proposed dairy prompted CWB to conduct a "Sanitary Survey" of the Māhā'ulepū and adjacent watersheds. DOH conducted water sampling within the Waiopili Ditch and areas upstream, and initiated a series of investigations into water quality issues. Following EPA standards for a Sanitary Survey, DOH has completed Part I of its report: Waiopili Ditch Sanitary Survey, Kauai, Part I (CWB, 2016).

The findings of the Sanitary Survey indicate that high levels of enterococcus and Clostridium perfringens occur in sediment of Waiopili Ditch. Soil has been identified as a primary

source of fecal indicator bacteria in the environment, and can be transported by precipitation into even pristine streams and rivers (Hardina and Fujioka, 1991, in CWB, unpublished). The agricultural ditch and intermittent streams showed degraded water quality parameters for nutrients and pathogens.

Elevated levels in these water courses is due to the low flow conditions and varied inputs from the agricultural lands and natural contributions from the watershed. Water inputs to the agricultural ditches come from a watershed area surrounding the Māhā'ulepū Valley, including the sloped areas from Ha'upu Ridge (CWB, 2016).

The predicted risk of illness from recreation exposure to a cattle-impacted waterbody is 25- to 150-times lower than the risk of illness associated with human sources of contamination (EPA, 2010 in CWB, 2016)." (4-62, DEIS Vol 1, page 154)

As it relates to the known health risks from dairy cow manure and urine, DOH misrepresented the known science and current Recreational Water Quality Criteria when DOH stated: "The predicted median risk of illness from recreational exposure to the cattle-impacted water body is 25- to 150-times lower than the risk of illness associated with human sources of contamination" Sanitary Survey Page 9. DOH offers no reference for their claim that cows pose a "25- to 150-times lower risk". In fact, that claim is unsupported by the EPA study they include as Reference #9 but ignore:

"EPA's research also indicates that some nonhuman fecal sources (**cattle in particular**) may pose risks comparable to those risks from human sources (Soller et al., 2010a, b; U.S. EPA, 2010g). Human pathogens are present in animal fecal matter, and there is, therefore, a potential risk from recreational exposure to human pathogens in animal-impacted waters that must be accounted for in the 2012 RWQC." page(s) 37-38 (emphasis added)

In conclusion, the EPA does not require finding human source necessary to know when the public should be warned: "Because there have been few epidemiological studies, with mixed findings, in waters impacted by nonhuman sources and QMRA shows that risks from some animals may be comparable to humans, EPA is not developing separate national criteria for nonhuman sources." DOH Sanitary Survey Reference #9

In fact, after years of experience with serious illness in New Zealand from their dairies: "McBride et al. (1998) conducted an analysis of the impact on human sources versus animal sources on New Zealand beach sites and concluded that the illness risks posed by animal versus human fecal material were not substantially different. These studies collectively suggest that waterbodies with substantial animal inputs may potentially result in human health risks that vary based upon the relative proportion of the human and nonhuman fecal input and the nature of the nonhuman source of infective agent(s)." (page 37)

The fact is, "The surface waters crossing the dairy farm site include some input from an intermittent stream above the site and drainage collected in agricultural ditches developed during the sugarcane plantation era." [4-81, DEIS Vol 1, page 173]

This, in conjunction with the aforementioned studies, cannot be mitigated by HDF's false claim on page 4-84 that, "These surface waters are not a recreational resource and are not used by the public, even near the ditch terminus at the ocean." [4-84]. I have seen people fishing and children playing in the "ditch terminus at the ocean" and have personally enjoyed recreating in those waters myself. It is an exquisitely beautiful place and I have seen people in the ocean every time I have visited, at least 20 times within the past year, so I can personally attest to the untruthfulness of this statement.

Finally, HAR 11-200-17 requires that an EIS discuss "significant beneficial and adverse impacts (including cumulative impacts and secondary impacts)" but also impacts on the visual and aesthetic resources, archaeological and historic resources, cultural practices and resources, and the surrounding environment - most of which the DEIS largely ignores and considers unimportant:

"There are few potential long-term adverse impacts anticipated to result from the construction and implementation of Hawai'i Dairy Farms. Relative to the agricultural, social, economic and employment benefits that are expected to result from the dairy operation, with application of the various mitigation measures described in the EIS, the potential adverse impacts are not considered significant. (1.4.2)

Vague assurances that "[p]ermit process compliance would be followed at such time HDF may decide to pursue an expanded operation" are wholly inadequate. (2-9).

The DEIS claims that with respect to pest insects and odor, "diligent housekeeping" and "best management practices" would suffice to address those impacts, even though the precise protocols are not provided. See also 1-15, etc. In fact, "best management practices" are repeatedly cited throughout the document with no specific delineation as to what that entails, with respect to soils and pollution runoff, 3-28, 4-6, DEIS Vol.1.

Similarly, HDF makes the general statement that potential requirements for on-site archaeological monitoring of construction activities "will be implemented," but fails to detail its plan or offer answers to the critical questions: how, when, by whom, and in response to what trigger(s). See also 1-15, etc.

HDF claims that it will undertake to mitigate many of the impacts raised in the EIS but does not include specific descriptions for DOH and the public to properly assess the adequacy of those efforts. Furthermore, enforcement cannot rest with HDF or its agents alone. It must also rest with government agencies as well. The public trust doctrine requires that the DOH "ensure that the prescribed measures are actually being implemented." Kelly v. 1250 Oceanside Ptnrs, 111 Haw. 205, 231 (2006) (internal citations and marks omitted).

There are more inconsistencies and vague assertions that trouble me in this DEIS, sufficiently to render it a poor assessment of environmental impact for the proposed operation.

In closing, I'd like to recall Resolution 2001, the Mandate to protect Maha'ulepu Valley that was unanimously voted in by our County Council, despite the objections of Grove Farm. It is your civic duty to protect the people, the land and the waters of Kaua'i for the present as well as future generations.

I sincerely hope you will do the right thing.

Regards,
Farouz Gipson

Law Offices of Charles M. Tebbutt, P.C.
941 Lawrence Street
Eugene, OR 97401
Ph: 541-344-3505 Fax: 541-344-3516
charlie@tebbuttlaw.com

June 21, 2016

Via US Mail and e-mail to:

Virginia Pressler, MD
State of Hawai'i, Department of Health
1250 Punchbowl St.
Honolulu, HI 96813
virginia.pressler@doh.hawaii.gov

Laura McIntyre
State of Hawai'i, Department of Health
1250 Punchbowl Street
Honolulu, HI 96813
doh.epo@doh.hawaii.gov

Keith Kawaoka, D.Env.
Environmental Health Administration
1250 Punchbowl Street
Honolulu, HI 96813
Keith.kawaoka@doh.hi.gov

Amy Hennessey
Hawai'i Dairy Farms, LLC
PO Box 1690
Koloa, HI 96756-1690
info@hawaiidairyfarms.com

Jeff Overton
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813
HDF@Group70mt.com

**RE: FRIENDS OF MAHA'ULEPU'S REQUEST FOR EXTENSION OF
PUBLIC COMMENT PERIOD ON HAWAII DAIRY FARM'S DRAFT
ENVIRONMENTAL IMPACT STATEMENT**

Dear Dr. Pressler, Ms. McIntyre, Dr. Kawaoka, Ms. Hennessey, and Mr. Overton,

On behalf of Friends of Maha'ulepu (hereinafter abbreviated as "FOM"), I write to request that Hawai'i Department of Health ("DOH") and Hawai'i Dairy Farms ("HDF") agree to extend the period for submission of public comments concerning HDF's Draft Environmental Impact Statement ("DEIS") for its proposed dairy facility.

Just last week we learned that HDF had submitted certain "updates" to their Waste Management Plan ("WMP"), received by DOH on June 1. To my knowledge, the public has not been formally notified that the WMP has been revised; the fact that FOM serendipitously discovered the June 1 update does not constitute notice to the public. The

community will therefore be severely limited in its ability to submit comments on HDF's complete proposal if it remains unaware that the June 1 updates exist. Further, FOM has discovered multiple factual inconsistencies between HDF's Waste Management Plan of 7/23/14, its Waste Management Plan Update of 6/1/16 and its DEIS of 6/8/16. Even if the public were to be informed of the June 1 updates to the WMP, it remains unclear which facts and information are correct such that they are properly the subject of evaluation and comment. Some, but not all of the changes in the June 1 updates have been incorporated in the DEIS.

DOH should require HDF to resubmit an integrated and comprehensive WMP and DEIS wherein the Dairy Plan is consistent throughout. The comment period on the DEIS should not begin until HDF has resubmitted complete, consistent documents for review and the public has been notified. Additional pending action by a federal court also supports further extension of the comment period, as discussed below.

Disturbingly, we learned during depositions given under oath that HDF has fundamentally misrepresented and falsely certified to DOH the timing and degree of construction activity that has already taken place on its proposed dairy site. These misrepresentations and false statements will be offered as evidence in FOM's Clean Water Act citizen enforcement action currently pending before the Hon. Leslie Kobayashi of the Federal District Court for the District of Hawaii (No. 1:15-cv-00205-LMK-KJM). Given the interrelated nature of these two matters, and the fact that DOH is presently the approving agency for both the DEIS and any potential stormwater discharge permit, FOM requests that the comment period on the DEIS also be extended to allow for Judge Kobayashi to make a determination on the Parties' respective Motions for Summary Judgment in the Clean Water Act case. FOM intends to file its motion in sufficient time for both motions to be heard on the scheduled date of August 8, 2016.

DOH has raised questions about the accuracy and completeness of HDF's applications for General Stormwater NPDES permit coverage for discharges associated with construction activity since HDF first applied for coverage in September of 2014. See DOH comment letter of October 24, 2014, attached hereto as Exhibit 1. Subsequent comment letters from DOH included the same inquiry. See, e.g., DOH comment letter of July 16, 2015, attached hereto as Exhibit 2. We learned on June 13 and 14, through the depositions of Mr. James Garmatz, HDF's farm manager, and Mr. Kyle Datta, general partner of Ulupono Initiative, that HDF's response to DOH's repeated, specific inquiry as to whether construction activities have occurred on the proposed dairy site, finally submitted in August 2015, was false. Many of the very activities for which HDF requested NPDES coverage had already been underway for months. HDF's certifications that the activities for which it seeks permit coverage have not already taken place (e.g., "after the fact" discharges/activities) are likewise false. For example, in HDF's May 7, 2015 application materials, Mr. Datta certified that the information provided in the NOI did not contain "after the fact" discharges. That May 7, 2015 application specifically listed certain activities that HDF wished to be covered under the NPDES permit, including, *inter alia*, "trenching for and installation of new potable water distribution system for livestock consumption through watering facilities and concrete troughs."

Contrary to that certification, Mr. Garmatz testified that approximately 160 watering troughs had already been installed at the site, with ground-disturbing water lines installed to approximately 40 of the troughs.

Mr. Garmatz also testified about numerous other construction activities that have occurred at the site, including the March 2014 installation of approximately 1000-1500 feet of underground irrigation piping which is connected to a functioning irrigation pivot. Mr. Garmatz signed an August 14, 2015 letter, along with its most recent NPDES stormwater permit application to DOH stating that "land disturbance associated with this project as listed in the NOI has not commenced, including but not limited to, preliminary site construction such as installation of fencing and irrigation systems." Letter of August 14 attached hereto as Exhibit 3. This statement, too, is clearly false. When the transcripts from these depositions are complete, we will provide them to DOH. DOH will no doubt find the testimony enlightening. Because a federal district court judge will soon opine on these issues, which reveal the veracity of at least one set of permitting materials that HDF has submitted to DOH, DOH and HDF should agree to allow Judge Kobayashi to render a determination on the merits of the Clean Water Act case prior to the commencement of the time for public comments on the DEIS. FOM and other members of the public would then have the opportunity to consider the opinion and findings of the federal court in submitting their comments on the DEIS.

Issues of fairness also weigh in favor of extending the public comment period in this instance. As discussed above, the public simply cannot provide comments on the contents of a WMP that it does not know exists. A new, complete WMP and DEIS should be resubmitted and available for public review and comment. Further, as you know, DOH first published the Environmental Impact Statement Preparation Notice ("EISPN") from HDF and its contractor, Group 70, on January 23, 2015. HDF has spent nearly a year-and-a-half gathering information and conducting studies to develop its approximately 2,600 page DEIS. 732 of those pages are "Technical Appendices" evaluating a broad range of subject areas, including such varied topics as archaeological features and cultural impacts, ground, surface, and marine water quality, plant and animal life, soils and nutrient balance, and economic analyses. HDF's DEIS also indicates that a number of local, state, and federal agencies, as well as over 200 individuals and community groups, have submitted comments on the EISPN. Some agencies even participated in earlier reviews of at least some of the supporting documents. The degree of unprecedented interest in and concern about the consequences of HDF's proposed dairy facility underscore the need for meaningful public review of the DEIS. It is important that this review not be based on incomplete and/or conflicting information. It certainly should not be rushed.

FOM is committed to providing a complete review and analysis of the DEIS. However, FOM is concerned that the 45-day comment period permitted under HAR § 11-200-22(b) does not allow adequate time for a thorough evaluation of the proposed project, especially when a federal enforcement action materially related to the proposed project is currently pending and we now understand a WMP update has been submitted proposing at least 27 changes in HDF's WMP of 7/23/14. Reviewing, evaluating, and

opining in 45 days on a DEIS that took over ten times that duration to complete is a tall order, especially when elements of the DEIS do not comport to the recent WMP updates. Therefore, FOM requests that DOH require HDF to resubmit a fully integrated WMP with consistent content in the DEIS. The 45-day public comment period should then begin upon HDF's resubmittal and notice of these documents or from the federal district court's issuance of a decision on the Parties' Motions for Summary Judgment, whichever is later. The motion hearing is presently set for August 8, 2016, meaning that any public comments should be due no earlier than September 7, 2016 (and potentially later, depending on the date of issuance of a decision or resubmittal and notice of HDF's fully integrated WMP and DEIS). In the alternative, and at the very least, FOM asks for the comment period to be extended an additional 45 days to and including September 7, 2016.

As you consider this request, FOM urges you to reflect on the numerous statements that HDF has made to the public about its desire to be good neighbors and to respond to public concerns about the proposed dairy operation. Agreeing to extend the public comment period is an opportunity for HDF to live up to that commitment. FOM looks forward to your response.

Sincerely,

/s/ Charles M. Tebbutt

Charles M. Tebbutt
Law Offices of Charles M. Tebbutt, P.C.
Counsel for Friends of Māhā ūlepu

cc via US Mail to:

The Honorable David Y. Ige
Governor, State of Hawaii
Executive Chambers
State Capitol
Honolulu, HI 96813

Mr. Douglas Chin, Esq.
Attorney General, State of Hawaii
Department of the Attorney General
425 Queen Street
Honolulu, HI 96813

Ms. Sina Pruder, P.E.
State of Hawaii, Department of Health – Wastewater Branch
919 Ala Moana Blvd., Room 309
Honolulu, HI 96801-3378

cc via e-mail to:

Patricia McHenry, Esq.
Cades Schutte
pmchenry@cades.com
Counsel for HDF

Linda Paul, Esq.
linpaul@aloha.net
Counsel for FOM in Federal CWA case

EXHIBIT 1



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

LINDA ROSEN, M.D., M.P.H.
DIRECTOR OF HEALTH

In reply, please refer to:
EHC/CWB

10014PJF.14

October 24, 2014

Mr. Kyle Datta
Manager Partner
Hawaii Dairy Farm LLC
P. O. Box 1690
Koloa, Hawaii 96756

Attention: Mr. Jim Garmatez
Facility Manager

Dear Mr. Datta:

**Subject: Comments on the Notice of Intent (NOI) for
Hawaii Dairy Farm
Koloa, Island of Kauai, Hawaii
File No. HI R10E533**

The Department of Health (DOH), Clean Water Branch (CWB) has not received a response to our September 24, 2014 NOI comments for the subject facility. Our September 24, 2014 comments are as follows:

1. Clarify if any land disturbance associated with this project commenced.
2. Clarify if any activities in the NOI have already commenced.
3. Clarify if the county grading permit applies to activities provided in the NOI.
4. Clarify if construction will occur in, under, or over State waters and if a permit is needed from the Army Corps of Engineers, Regulatory Branch.
5. Provide a copy of the Storm Water Pollution Prevention Plan that meets Hawaii Administrative Rules (HAR), 11-55, Appendix C requirements.
6. The Certifying person listed on the Signatory and Certification Statement does not match Item No. 2. of the CWB NOI Form. Please revise.
7. Please provide the owner's street address information.
8. Please provide the receiving state waters classification information.

The DOH-CWB expects to receive a response to our comments by **November 7, 2014**. If the DOH-CWB does not receive the required information by **November 7, 2014**, we will assume that you are no longer interested in obtaining coverage under the National Pollutant Discharge Elimination System General Permit for discharges of stormwater associated with construction activities, and we will terminate the processing of your NOI.

Mr. Kyle Datta
October 24, 2014
Page 2

10014PJF.14

If additional time is needed, you may submit a written request with the specific amount of time needed and justification.

For future submittals, include **File No. HI R10E533** and the following certification statement in your cover letter:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Should you have any questions, please contact Ms. Jiaping Fouse of the Engineering Section, CWB, at (808) 586-4309.

Sincerely,

STUART YAMADA, P.E., CHIEF
Environmental Management Division

JF:np

c: Mr. Kyle Datta, Hawaii Dairy Farm LLC [via e-mail kdatta@ulupono.com]
Mr. Jim Garmatez, Hawaii Dairy Farm LLC
[via e-mail jim@hawaiidairyfarms.com only]
Group 70 International [via e-mail rchar@group70int.com only]

DAVID Y. IBE
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EHCWB

07022PJF.15

July 16, 2015

Mr. Eric Kyle Datta
Managing Partner
Hawaii Dairy Farm LLC
P. O. Box 1690
Koloa, Hawaii 96756

Attention: Mr. Jim Garmatez
Facility Manager

Dear Mr. Datta:

**Subject: Comments on the Notice of Intent (NOI) for
Hawaii Dairy Farm
Koloa, Island of Kauai, Hawaii
File No. HI R10E716**

The Department of Health (DOH), Clean Water Branch (CWB) acknowledges receipt of your NOI Application (e-Permitting Submission #: 26C-DWXA-VBZ8) on May 7, 2015, for the subject project. We have reviewed the submittal and have the following comments:

1. Please provide the Owner's street address information. CWB does not accept a P. O. Box as the Owner's street address.
2. Clarify if any land disturbance associated with this project has commenced, including but not limited to preliminary site construction, such as installation of fence and irrigation system etc. that is mentioned in the following report:
http://thegardenisland.com/news/local/hdf-faces-lawsuit/article_603afbae-150d-5463-a27a-fb6bb7fd575.html
3. Clarify if any activities in the NOI have already commenced.
4. Clarify if the county grading permit exemption (Figure 10) applies to all activities provided in the NOI.
5. The Storm Water Pollution Prevention Plan (SWPPP) does not meet the requirements in Hawaii Administrative Rules (HAR), Chapter 11-55, Appendix C (NPDES General Permit for Construction Storm Water). Please revise your SWPPP by ensuring all of the required information from Section 7 of HAR, Chapter 11-55, Appendix C, is included. Please submit the revised SWPPP.

EXHIBIT 2

The following information is missing in your SWPPP as required by Section 7 of Appendix C.

- a. The intended sequence and estimated dates of construction activities information as required by Section 7.2.5.
- b. A map or drawing showing the approximate slopes before and after major grading activities and drainage patterns as required by Section 7.2.6.1.
- c. A map or drawing showing the locations of the project site's construction entrance/exit(s), areas used for storage and for disposal of wash water as required by Section 7.2.6.1.
- d. Locations of any contaminated soil or contaminated soil stockpiles as required by Section 7.2.6.1.
- e. Locations of any crossings of state waters as required by Section 7.2.6.1.
- f. Locations of all potential pollutant-generating activities identified in Section 7.2.7.
- g. In your SWPPP Item No.2.5, you identified the project site non-storm water sources. Please see the bullet list below. However, Section 7.2.8 requires you to provide information on the design, installation, maintenance, and location(s) of the control measures to prevent discharges of your identified non-storm water. Please provide this information.
 - Discharges from emergency fire-fighting activities;
 - Landscape irrigation;
 - Water used to wash vehicles and equipment;
 - Water used to control dust;
 - Potable water including uncontaminated water line flushings;
 - Routine external building wash down;
 - Pavement wash waters;
 - Uncontaminated air conditioning or compressor condensate;
 - Uncontaminated, non-turbid discharges of ground water or spring water;
 - Foundation or footing drains; and
 - Construction dewatering water.
- h. Please provide the pollution prevention procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where spills and leaks etc. occur as required by Section 7.2.11.1.

The above required information shall be submitted through the CWB NOI Form for revised NOIs. This is accessible through the e-Permitting Portal website at: <https://eha-cloud.doh.hawaii.gov/epermit>. After you login, click the [History] tab located at the upper middle page, find your submittal from the list of history, click [view] icon, at the right side of the page, under [Actions], click [Revise Submission] tab. Follow the instructions to complete and submit this form. All submissions shall include a CD or DVD containing the downloaded e-Permitting submission and a completed Transmittal Requirements and Certification Statement for e-Permitting NOIs Form, with original signature and date.

The DOH-CWB expects to receive a response to our comments by **August 17, 2015**. If the DOH-CWB does not receive the required information by **August 17, 2015**, we will assume that you are no longer interested in obtaining coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for discharges of stormwater associated with construction activities, and we will terminate the processing of your NOI.

If additional time is needed, you may submit a written request with the specific amount of time needed and justification.

Should you have any questions, please contact Ms. Jiaping Fouse of the Engineering Section, CWB, at (808) 586-4309.

Sincerely,



STUART YAMADA, P.E., CHIEF
Environmental Management Division

JF:np

- c: Mr. Eric Kyle Datta, Hawaii Dairy Farm LLC [via e-mail kdatta@ulupo.com]
Mr. Jim Garmatez, Hawaii Dairy Farm LLC [via e-mail jim@hawaiidairyfarms.com only]
Mr. Paul Matsuda, Group 70 International [via e-mail pmatsuda@group70int.com only]
(w/Receipt No. 37017 for \$500 Filing Fee only)
Mr. Ryan Char, Group 70 International [via e-mail rchar@group70int.com only]

HDF faces lawsuit

TheGardenIsland.com



waves/ife

Bill Buley/The Garden Island

Waves crash in on Mahaulepu Beach on a recent cloudy afternoon.

LIHUE — Oregon-based environmental attorney Charlie Tebbutt on Monday filed a lawsuit alleging violations of the federal Clean Water Act on the part of those behind a proposed dairy in Mahaulepu Valley.

The suit claims the backers of Hawaii Dairy Farms — a proposed \$17.5 million, 576-acre operation — have and continue to violate federal water regulations by installing irrigation systems, wells and water troughs without a state stormwater construction permit.

Specifically, the suit alleges that these ongoing construction activities are “reasonably likely to cause discharges of pollutants,” including dirt, debris, sewage sludge, rock and sand, into Waiopiili Stream and other nearby waterways.

“The fact that HDF is publicly saying one thing while violating the law by undertaking construction activities is a sign that this company is willing to do anything to try and get its way, and that is certainly not the way to proceed in Kauai,” Tebbutt said.

Tebbutt is representing the nonprofit group Friends of Mahaulepu in its fight to stop HDF, a company backed by eBay Founder Pierre Omidyar’s Ulupono Initiative. The suit also names Mahaulepu Farm among the illegal “dischargers.”

Amy Hennessey, HDF’s spokeswoman, has said the only activity taking place on the site is the growing and mowing of grass for pasture and the installation of water quality monitoring wells and fencing. All pasture cultivation activities, including the installation of an irrigation system, are authorized under the Natural Resources Conservation Service Conservation Plan and are not subject to National Pollutant Discharge Elimination System requirements because they are for agricultural purposes, she said.

“We believe this suit is without merit and a regrettable waste of the community’s resources,” Hennessey said in a prepared statement. “It is unfortunate that Friends of Mahaulepu group is using litigation instead of conversation to address its concerns about Hawaii Dairy Farms’ planned pasture-based dairy.”

HDF filed an application for a stormwater permit in September 2014, but did not complete the permit process after the company decided to first conduct a voluntarily Environmental Impact Statement prior to construction, Hennessey said.

The application lapsed due to inactivity, she said. HDF has filed a new application to restart the process.

“While Hawaii Dairy Farms does have its building permits from the County of Kauai, we are demonstrating good faith by not moving forward with construction until after the completion of the EIS,” Hennessey said.

FOM_002461

“As the first pasture-based dairy in the state, Hawaii Dairy Farms has encountered new, unique situations in the regulatory process. This uncharted path has led Hawaii Dairy Farms to work closely with the federal, state and county governments to ensure adherence to all regulatory standards.”

The lawsuit comes 60 days after FOM filed a notice of intent to sue the defendants for launching preliminary site construction projects without a stormwater National Pollutant Discharge Elimination System permit.

Bridget Hammerquist, president of FOM, said the group is committed to protecting the Mahaulepu area from pollutants.

“FOM is supportive of safe agriculture that does not risk the public’s health or threaten the environment, but this proposal not only threatens the Mahaulepu area, but is operating in disregard for the law already,” she said in a prepared statement. “The harm and further degradation of one of Kauai’s most revered locations must be stopped.”

The lawsuit states that HDF’s preliminary construction work, including grading and excavating, is a likely source of the pollution ending up in Waiopiili Stream, which flows off Grove Farm land and enters the ocean near Makuawahi Cave Reserve and downhill from the proposed dairy site.

Recent testing has shown it is Kauai’s most polluted stream — of several that continuously fail to meet state water quality standards.

Bacteria tests conducted by Surfrider Foundation’s Kauai Chapter found that pollution levels in the stream are 275 times higher than the bacteria limits set by the government, according to data released by the ocean protection group. Test results from nearby waters where the stream meets the sea are nearly 17 times greater than state and federal limits, the data shows.

Surfrider and FOM mailed a petition last month to the Department of Health and its Environmental Health Administration calling for the stream to be listed as an impaired waterway under the Federal Water Pollution Control Act. They also requested public health warning signage.

“FOM has previously offered to sit down with HDF to discuss the foolishness of the proposal to put 2,000 head of cattle in the Mahaulepu Valley,” Tebbutt said.

FOM is not the only entity that has taken legal aim at HDF.

Kawailoa Development, LLP, owner of the nearby Grand Hyatt Kauai Resort and Spa and the Poipu Bay Golf Course, filed suit against HDF in 5th Circuit Court last July, claiming its business, recreational, environmental and aesthetic interests would be adversely affected should the dairy move into the neighborhood.

In light of public concern surrounding the project, HDF agreed in November to move forward with a voluntary Environmental Impact Statement — one demand of Kawaiiloa’s complaint.

Hennessey said HDF’s consultants are working on the draft EIS statement and plan to share the document for public comment this summer.

© 2015 TheGardenIsland.com. All rights reserved. This material may not be published, broadcast, rewritten or redistributed.

FOM_002462

http://thegardenisland.com/news/local/hdt-faces-lawsuit/article_603a1bae-150d-5463-a27a-4fb6bb7d575.html

```
/* Copyright 2014 Evernote Corporation. All rights reserved. */
.en-markup-crop-options { top: 19px !important; left: 50% !important;
margin-left: -100px !important; width: 200px !important; border: 2px solid rgb(255,255,255,0.38) !important; border-radius: 4px !important;
.en-markup-crop-options div div:first-of-type { margin-left: 0px !important; }
```

EXHIBIT 3

FOM_002463

Jun 03, 2015 05:18:33PM MDT



August 14, 2015

Ms. Jiaping Fouse
Engineering Section, Clean Water Branch
State of Hawai'i Department of Health
PO Box 3378
Honolulu, HI 96801-3378

Dear Ms. Fouse:

Hawai'i Dairy Farms (HDF) wishes to clarify its responses to the comments provided on our NOI Application (e-Permitting Submission #: 26C-DWXA-VBZ8) via a letter received from the State of Hawai'i Department of Health (DOH), Clean Water Branch (CWB), on July 16, 2015:

1. **Please provide the Owner's street address information. CWB does not accept a P.O. Box as the Owner's street address.**
The address of the owner has been included in our NOI application.
2. **Clarify if any land disturbance associated with this project has commenced, including but not limited to preliminary site construction, such as installation of fence and irrigation system etc. that is mentioned in the following report:**
http://thegardenisland.com/news/local/hdf-faces-lawsuit/article_603afb9e-150d-5463-a27a-ff66bb7fd575.html

Land disturbance associated with this project as listed in the NOI has not commenced, including but not limited to, preliminary site construction such as installation of fencing and irrigation systems.

While HDF has in good faith temporarily postponed construction activities while a voluntary Environmental Impact Statement (EIS) is being conducted, HDF reserves the right to proceed with preliminary agricultural-related site construction activities that are allowed without an NPDES permit so long as it is covered under a National Resource Conservation Service (NRCS)-reviewed Conservation Plan, which the project currently has in place. This includes and is not limited to the installation of irrigation and pivot systems and fencing.

As such, HDF has prepared plans to begin installing fencing. As the fence posts are put into place using a ram and not through excavating and grading, an NPDES permit for this particular activity is not required. Gate posts, which will require excavation, will not be installed at this time until the NOI is approved and an NPDES General Permit for Construction Activities is granted to cover these improvements.

3. **Clarify if any activities in the NOI have already commenced.**

One particular activity indicated in the NOI had been partially completed but has been halted since the beginning of 2014. Some drinking water trough facilities, along with the accompanying water piping, were installed. HDF installed these facilities, following consultation with DOH in early 2014, on NPDES permitting requirements. Notes from that meeting indicated that the watering facilities, intended for agricultural and livestock consumption only, did not require NPDES permitting and would be covered under HDF's Conservation Plan, reviewed by NRCS. Some troughs and pipes were subsequently installed and the trenches were backfilled and the areas stabilized.

DOH has since clarified that the watering facilities should be covered under the NPDES General Permit. The remaining troughs to be installed have been listed in this NOI application.

4. **Clarify if the county grading permit exemption Figure 40 [now Figure 11A] applies to all activities provided in the NOI.**

The county grading permit exemption applies to all the activities provided in the NOI; the NRCS-reviewed and West Kaua'i Soil and Water Conservation District-approved Conservation Plan on which the exemption is based covers in general terms all those activities.

5. **The Storm Water Pollution Prevention Plan (SWPPP) does not meet the requirements in Hawaii Administrative Rules (HAR), Chapter 11-55, Appendix C (NPDES General Permit for Construction Storm Water). Please revise your SWPPP by ensuring all of the required information from Section 7 of HAR, Chapter 11-55, Appendix C, is included. Please submit the revised SWPPP.**

The following information is missing in your SWPPP as required by Section 7 of Appendix C.
a. **The intended sequence and estimated dates of construction activities information as required by Section 7.2.5.**

The general contractor, when selected, will amend or update this section of the SWPPP as required with specific dates prior to the start of construction. The following sequence and estimated dates of general construction phases or activities are estimated:

1. Notice to Proceed 6/1/2016
2. Mobilization and Installation of Stormwater Controls 6/2/2016
3. Clearing, grubbing, grading, and site preparation and construction
a. Duration = 6 months 6/15/2016
As Needed
4. Temporary Stabilization of Required Areas 1/1/2017
5. Final Stabilization 6/1/2017
6. Removal of Temporary Stormwater Controls 6/1/2017
7. Removal of Construction Equipment and Vehicles 6/1/2017

b. **A map or drawing showing the approximate slopes before and after major grading activities and drainage patterns as required by Section 7.2.6.1.**

Figures depicting pre-construction, during construction, and post-construction topography for the dairy facility are included. Approximate slopes are added to the figures.

Figures depicting pre-construction topography for the extents of the entire farm are also included. Construction of the roadways, raceways, fencing, irrigation systems, water infrastructure and watering troughs, will not significantly impact the existing topography. Construction plans will be provided to include the farm improvements beyond the extent of the facility at a later date when completed, and will provide further detail.

Additionally, the NOI application does not cover grading and excavation within pasture, field, and crop areas, as these activities are exempt from NPDES permitting requirements in conjunction with an NRCS-reviewed Conservation Plan and if the improvement is for the purpose of growing crops.

The project will not be phased. However, construction will commence first on the dairy facility while the overall farm improvements will follow.

- c. A map or drawing showing the locations of the project site's construction entrance/exit(s), areas used for storage and for disposal of wash water as required by Section 7.2.6.1.**

Figures 6A and 6B have been revised to show the project site's construction entrance/exit and area used for storage and for disposal of wash water as required.

- d. Locations of any contaminated soil or contaminated soil stockpiles as required by Section 7.2.6.1.**

No contaminated soils or soil stockpiles have been identified on the project site at this time. No contaminated soils are anticipated at this time.

- e. Locations of any crossings of state waters as required by Section 7.2.6.1.**

Crossings of Maha'ulepu Ditch are indicated on Figure 6B. Crossings will be constructed per applicable NRCS conservation practice standards.

- f. Locations of all potential pollutant-generating activities identified in Section 7.2.7.**

Locations of potential pollutant-generating activities will be determined by the general contractor, once selected. Tentative locations of specific activities that may generate pollutants, from both stormwater and non-stormwater sources, are identified on Figures 5 and 6, A and B. These activities thus far include:

1. Soil erosion from disturbed areas [from activities identified on Figures 5 and 6]
2. Soil erosion from soil stockpiles [from activities identified on Figures 5 and 6]
3. Storage of construction debris, green waste, and general litter [primarily at facility]
4. Application of fertilizers [primarily on farm areas disturbed and to be planted]
5. Application of pesticides [primarily on farm areas disturbed and to be planted]
6. Application of paints, solvents, etc. [primarily at facility]
7. Operation and Maintenance of equipment such as oils, fuel, and hydraulic fluid [offsite]
8. Asphalt paving operations [primarily at facility]
9. Concrete operations [primarily at facility]
10. Storage and/or disposal of hazardous materials/waste [primarily at facility]
11. Storage of metals [primarily at facility]

12. Application of dust control water [primarily at facility]
13. Application of concrete truck water [primarily at facility]
14. Application of construction exit wash waters [primarily at entry to farm on Figure 6]

g. In your SWPPP Item No.2.5, you identified the project site non-storm water sources. Please see the bullet list below. However, Section 7.2.8 requires you to provide information on the design, installation, maintenance, and location(s) of the control measures to prevent discharges of your identified non-storm water. Please provide this information.

- Discharges from emergency fire-fighting activities;
- Landscape irrigation;
- Water used to wash vehicles and equipment;
- Water used to control dust;
- Potable water including uncontaminated water line flushings;
- Routine external building wash down;
- Pavement wash waters;
- Uncontaminated air conditioning or compressor condensate;
- Uncontaminated, non-turbid discharges of ground water or spring water;
- Foundation or footing drains; and
- Construction dewatering water.

Discharges from the following non-stormwater sources and the information on design, installation, maintenance, and, if applicable, tentative location(s), of the best management practices (BMPs) used to control and prevent discharges of potential pollution are described in Section 5 of the SWPPP.

Additional design and installation of the BMPs are further described below:

<i>Discharges from emergency fire-fighting activities;</i>	While unlikely to be present at the site, contain liquid waste from emergency fire-fighting activities (should the need arise) and do not allow liquid to flow into the drainage system or watercourse prior to treatment. Utilize a holding pit or sediment basin. Capture liquid waste using temporary dikes or berms, and direct to a sediment trap. Dispose of liquid waste through dewatering or through a sedimentation basin.
<i>Landscape irrigation;</i>	Landscape irrigation will be minimized and controlled to prevent excess watering and excess water runoff. Sophisticated irrigation controllers and the installed pivot system are designed to apply irrigation at levels to prevent erosion and runoff of water and pollutants. Shut off water to broken water lines or valves to prevent excess flow, and pump or bail water from trenches excavated to repair water lines.

<i>Water used to wash vehicles and equipment;</i>	Generally, vehicular wash down will occur offsite. Equipment will be washed and runoff from the wash down area will be controlled using a sediment trap or basin. Soaps must be phosphate free and biodegradable. Cleaning of equipment with soaps should not occur on site unless wastes are fully contained. If a vehicle must be cleaned on site, locate the wash area away from watercourses and utilize a wash area that is paved and bermed, collect the wash water, and dispose of properly and not to a watercourse. Use only when necessary. Use as little water as possible and discharge wash racks to sanitary sewer.
<i>Water used to control dust;</i>	Dust control waters will be applied at rates that prevent excess watering and excess water runoff.
<i>Potable water including uncontaminated water line flushings;</i>	Flushings of water lines will not be disposed of directly into storm drains, open ditches, or streams. Re-use for irrigation where feasible.
<i>Routine external building wash down;</i>	External building wash down water will not be disposed of directly into storm drains, open ditches, or streams prior to treatment. Utilize a holding pit or sediment basin. Capture liquid waste using temporary dikes or berms, and direct to a sediment trap. Dispose of liquid waste through dewatering or through a sedimentation basin.
<i>Pavement wash waters;</i>	Minimize waste material by collecting waste by dry methods. Pavement wash water shall be disposed of in designated facilities, located a minimum of 50 feet away from watercourses. Locate washout areas into a temporary pit or bermed area. Dispose of concrete in a designated area and allow to set, so it can be broken up and disposed. Line the washout facility.
<i>Uncontaminated air conditioning or compressor condensate;</i>	Contain liquid waste and do not allow liquid to flow into the drainage system or watercourse prior to treatment. Utilize a holding pit or sediment basin. Capture liquid waste using temporary dikes or berms, and direct to a sediment trap. Dispose of liquid waste through dewatering or through a sedimentation basin.

<i>Uncontaminated, non-turbid discharges of ground water or spring water;</i>	Contain liquid waste and do not allow liquid to flow into the drainage system or watercourse prior to treatment. Utilize a holding pit or sediment basin. Capture liquid waste using temporary dikes or berms, and direct to a sediment trap. Dispose of liquid waste through dewatering or through a sedimentation basin.
<i>Foundation or footing drains; and</i>	Contain liquid waste and do not allow liquid to flow into the drainage system or watercourse prior to treatment. Utilize a holding pit or sediment basin. Capture liquid waste using temporary dikes or berms, and direct to a sediment trap. Dispose of liquid waste through dewatering or through a sedimentation basin.
<i>Construction dewatering water.</i>	Waters may be run through a sediment trap or dewatering filter before discharge. The discharge point shall be protected from erosion from the discharge of dewatering effluent.

h. Please provide the pollution prevention procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where spills and leaks etc. occur as required by Section 7.2.11.1.

Spills will be cleaned up immediately or as soon as reasonably-able depending on the type of spill (if the spill is hazardous or significant such that it cannot be controlled by personnel in the immediate vicinity). Notification and reporting will be as follows:

1. **Minor Spills (such as small quantities of oil, gasoline, paint, etc.)**
 - a. Contain the spread of the spill
 - b. Recover the spilled materials using absorbent materials
 - c. Clean the contaminated area and properly dispose of contaminated materials
2. **Semi-Significant Spills**
 - a. Contain the spread of the spill
 - b. Notify the project foreman immediately
 - c. If the spill occurs on paved or impervious area, clean up using "dry" methods such as absorbent materials. Contain the spill by encircling it with absorbent materials.
 - d. If the spill occurs on dirt areas, contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soils.
 - e. If the spill occurs during rain, cover the spill with tarps to prevent contaminating runoff.
3. **Significant / Hazardous Spills**
 - a. Notify the local emergency response (Dial 911). Report significant spills to the fire department.



RECEIVED

May 25, 2016

JUN 0 1 2016

WASTEWATER BRANCH

State of Hawai'i
Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

Attn: Ms. Sina Pruder, Chief, Wastewater Branch

**Subject: Hawai'i Dairy Farms
Waste Management Plan – Updates for Review
Māhā'ulepū, Kaua'i, Hawai'i
TMK: (4) 2-9-003: 001 por and 006 por & (4) 2-9-001: 001 por**

Dear Ms. Pruder:

As you have been aware, in late 2013, Ulupono Initiative made the investment to fund Hawai'i Dairy Farms, the first pasture-based rotational-grazing dairy in the state. Hawai'i Dairy Farms, LLC (HDF) was formed as a positive step toward the island state's food security, economic diversity, and sustainability. At steady-state production with 699 milking cows, the farm will produce roughly 1.2 million gallons annually at market price.

The farm will be based on the most successful island dairy models in the world, and will utilize a sustainable, pasture-based rotational-grazing system and 21st century technology. The farm will be very different from conventional feedlot dairy farms found elsewhere in the state.

HDF is committed to establishing a herd of up to 699 mature dairy cows, and demonstrating the pasture-based system as an economically and environmentally sustainable model for Hawai'i. With proven success at a herd size of 699, HDF will contemplate the possibility of expanding the herd in the future to up to 2,000 productive milking cows. Permit process compliance would be followed at such time HDF may decide to pursue an expanded operation.

The State of Hawai'i, Department of Health (DOH), Wastewater Branch has previously reviewed HDF's submitted Waste Management Plan (WMP) for an operation of 699 mature dairy cows, as required by the "Guidelines for Livestock Waste Management". In the WMP, HDF detailed the operations and management of the effluent ponds, which will be used to store effluent and manure for re-use as a primary nutrient source for growing Kikuyu grass, the cows' main food source. With the final review of the WMP by DOH in October 2014, HDF obtained their required building permit and approval to construct the dairy facility.

In the course of this effort, opponents to the dairy filed a lawsuit against HDF, claiming that an Environmental Impact Statement (EIS) was required prior to use of the agricultural land that HDF is situated upon. While HDF strongly disagrees with that requirement, HDF has *voluntarily* agreed to prepare and submit an EIS

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AIA, LEED AP

Norman G.V. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. McNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

Group 70 International • 925 Bethel Street, 5th Floor • Honolulu, HI 96813-4398 • tel. 808.523.5966 • fax. 808.523.5874 • www.group70int.com

- b. Contractor to notify the proper County of Kaua'i officials, including but not limited to the public works department and building department. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
- c. Notify the State of Hawai'i, Department of Health, Hazard Evaluation and Emergency Response (HEER) Office for spills of State reportable quantities:
 - i. A listed substance designated under Hawai'i Administrative Rules (HAR) section 11-451-5(b), in quantities equal to or exceeding the reportable quantity criteria in section 11-451-6(b) in any 24-hour period; or
 - ii. An unlisted substance designated under section 11-451-5(c), in quantities equal to or exceeding the reportable quantity criteria in section 11-451-6(c) in any 24-hour period.
- d. Notify the National Response Center at (800) 424-8802 for spills of Federal reportable quantities, in conformance with the requirements in 40 CFR Parts 110, 119, and 302.
- e. Notification shall be made first by telephone, and followed up with a written report.
- f. The services of a Hazmat team should be obtained immediately, and construction personnel should not attempt clean up until the appropriate and qualified personnel have arrived at the job site.

Please contact Ryan Char, PE, LEED AP, Group 70 International, if you have any questions, at rchar@group70int.com and 808-441-2174.

This letter is also made part of the online submission and resubmittal of our NOI Application (e-Permitting Submission #: 26C-DWXA-VBZ8) through the e-Permitting Portal website.

Sincerely,

Jim Garmatz
Farm Manager



State of Hawai'i, Department of Health
Ms. Sina Pruder, Chief, Wastewater Branch
Hawai'i Dairy Farms, Waste Management Plan - Updates for Review
May 25, 2016
Page 2 of 2

pursuant to HRS Chapter 343. The purpose of the EIS is to evaluate potential environmental impacts of a pasture-based, rotational-grazing dairy system at 699 mature dairy cows and up to 2,000 mature dairy cows in Māhā'ulepū Valley, Kaua'i.

While the EIS process was progressing, on-going technical studies and field trials were continued for various dairy components, including and not limited to groundwater and surface water quality assessments, historical and archeological studies, nutrient management calculations, and forage trials. Refinements to the dairy operation, including and not limited to adjustments to the total available pasture area, physical setbacks, inclusion of calves in the nutrient model, and current forage data, improved the nutrient mass balance analysis within the WMP previously submitted to DOH. The following attachment consists of an executive summary and description of those changes.

HDF would like to emphasize that the pasture-based, rotational-grazing dairy system, including the design of the effluent ponds, is fundamentally the same and has not changed. At 699 mature dairy cows, the updates to the mass balance analysis have minimal effect on the effluent ponds as the farm's infrastructure had been sized for up to 2,000 mature dairy cows. The expected percentage of the nutrient demand for healthy pasture productivity which will be provided by the animals is 30.5% for nitrogen and 35.8% for phosphorus, both of which show that the nutrients applied from the animals (at the 699 mature dairy cow herd size) are only about one-third of what the grass crop requires.

Please feel free to let me know if you have any questions or comments regarding these changes or the information presented herein or in the attachment. Please also let me know if any additional information or copies are required. Thank you for your consideration and review.

Sincerely,



Paul T. Matsuda, PE
Principal/Director of Civil Engineering
Group 70 International

Attachment(s): Update to Waste Management Plan, Hawai'i Dairy Farms

Copy: Kyle Datta, Hawai'i Dairy Farms
Jim Garmatz, Hawai'i Dairy Farms
Jenna Dunn, NRCS District Conservationist, Pacific Island Area, Lihue Service Center
Adam Reed, NRCS State Agronomist, Pacific Island Area, State Office

ATTACHMENT

UPDATES TO WASTE MANAGEMENT PLAN
HAWAI'I DAIRY FARMS

MĀHĀ'ULEPŪ, KAUA'I, HAWAI'I

Prepared By:

Group 70 International
925 Bethel Street, 5th Floor
Honolulu, HI 96813
(808) 523-5866

Red Barn Consulting
3050 Yellow Goose Road
Lancaster, Pennsylvania 17601
(717) 393-2176

Dated:

May 25, 2016

EXECUTIVE SUMMARY

The Waste Management Plan (WMP) for Hawai'i Dairy Farms, focusing on a pasture-based, rotational-grazing dairy system with 699 mature dairy cows located in Māhā'ulepū, Kaua'i, was submitted to DOH on July 23, 2014. Subsequently, the WMP was reviewed by the State of Hawai'i, Department of Health (DOH), Wastewater Branch (WWB).

On October 24, 2014, the DOH-WWB indicated that HDF has addressed all of DOH-WWB comments from their review of the WMP and that there were no further comments on the WMP. DOH-WWB indicated there would be no further action on the WMP at that time, signaling that HDF had met the requirements of the "Guidelines for Livestock Waste Management" for effluent pond systems in the State of Hawai'i.

However, before construction was able to commence, HDF voluntarily agreed to prepare and submit an Environmental Impact Statement (EIS) pursuant to HRS Chapter 343. Based upon current environmental regulations and confirmed by the State of Hawai'i Department of Health, the preparation of an EIS was not required, but was requested by neighboring developments and a select group of the public. Nevertheless, HDF agreed to conduct the environmental assessment with the State of Hawai'i, Department of Health agreeing to be the accepting authority.

While the EIS process was progressing, previously on-going technical studies and field trials continued and discussions with other regulatory agencies were held. Forage productivity sampling was conducted to provide current data for nutrient management consideration. This updated information, specific to the project site, requires refinements to the WMP previously reviewed by DOH-WWB.

HDF would like to emphasize that the pasture-based, rotational-grazing dairy system, including the design and sizing of the effluent ponds, is fundamentally the same and has not changed. Simply put, field-tested and proven data, based on ground-level trials and studies, can improve the basis of the WMP.

#	Current WMP	Proposed Change	Justification
1	174 calves on site	150 calves on site	No more than 150 calves will be kept on site at any time, based on size and age.
2	Nutrient Mass Balance Table is populated by the Dairy New Zealand Model.	Nutrient Mass Balance Table is updated with the Cornell Model.	The Cornell Net Carbohydrate Protein System Model is a United States industry-recognized nutrient and milk production model. While HDF recognizes the success of the Dairy New Zealand model for evaluation of nutrients, HDF ultimately believes that the United States standard is best suited for operation on Kaua'i.
3	Project Boundary	Reduced Project Boundary	The boundary has slightly adjusted along the perimeter of the farm.
4	Receiving Water Body State Water Quality = Class A Marine Waters / Class 1 Critical Habitat	Receiving Water Body State Water Quality = Class A Marine Waters	The State of Hawai'i has recently updated its water quality classifications for this region.
5	Water Wells = 14	Water Wells = 14 original, 3 remaining.	Most of Well Battery 14 was abandoned, with only 3 wells remaining.
6	Total Lease Area = 577.9 acs	Total Lease area = 556.8 acs	Field conditions and negotiations with Mahalepu Farm (landowner) have resulted in a defined and measurable lease area.
7	Grazing Area = 517.3 acs	Grazing Area = 469.9 acs	Area has been set aside for project buffers, setbacks, raceways, and other areas not available for pasture grazing.
8	Land Use Summary Table	Revised Land Use Summary Table	With revisions to the project boundary, the total farm acreage has changed, including the pasture acreage, facility acreage, and open space acreage.
9	Total Paddocks = 118	Total Paddocks = 119	With the revision to the farm area, paddock layouts were slightly altered, resulting in 1 new paddock formed. Though the farm area decreased, several paddocks were divided to create additional paddocks near the calf sheds for housing the calves.
10	Area Percentages	Revised Area Percentages	Percent areas for the dairy facility, effluent ponds, etc. compared to the total farm area have changed due to the change in leased area.

11	Access Road and Tanker Truck Turnaround	New Location for Access Road and Tanker Truck Turnaround moved to east side of facility	The new location makes access to the facility both safer and cost effective, as the steep downhill grade on the west side of the facility is avoided.
12	Drip Irrigation in areas outside of the pivot extent	Gun Irrigation in areas outside of the pivot extent	Drip irrigation tubing and infrastructure would likely be destroyed often by grazing cows and require significant repair.
13	Irrigated Area Percentages	Revised Irrigated Area Percentages	Percent areas for irrigated farm areas versus non-irrigated farm areas, etc. compared to the total farm area have changed due to the change in leased area.
14	Irrigation Demand Summary	Revised Irrigation Demand Summary	Revised amounts of irrigated areas and non-irrigated areas results in changes in demand.
15	Section 6.1 - Irrigation Schedule	Renumbered Section 6.1 to Section 6.6	Duplicate section heading number to be renumbered for clarity and to avoid confusion.
16	Wastewater Treatment Section	Wastewater Management Section	Public comments on the original WMP correctly indicated that the ponds are not treatment systems, as the original WMP did not indicate any wastewater treatment systems for the effluent. Wastewater is stored and not treated in the effluent ponds.
17	Cow Weight = 1,210 lbs	Cow Weight = 1,240 lbs	Same cow but parameter has changed, with switch to Cornell Model
18	Manure Production = 143 lbs per day	Manure Production = 90.8 lbs per day	Manure production is affected by the nutrient content and chemical composition of the forage. With updated forage testing incorporated into the Cornell Model, manure production values have been updated and are consistent with the USDA/NRCS Agricultural Waste Management Field Handbook (March 2008), which utilizes established American Society of Agricultural Engineers (ASAE) values for manure production per cow per day.
19	Effluent / Manure Volume	Revised Effluent / Manure Volume for Calves	Added in generation of manure from calves and updated based on total manure produced. Increase in wash water projections at 699 cows.
20	Minimum Effluent Storage = 23 days	Minimum Effluent Storage = 25 days	Incorporated 2 days of storage before forecasted rain event. No effect as total storage provided is still 30 days.
21	Effluent Totals within Storage Pond Volume	Revised Effluent Totals within Storage Pond Volume	NOTE: The sizes of the ponds have not changed. Because of the increase in daily wastewater generation, more volume is required in storage

			pond at 699 cows. However, since the pond is designed for up to 2,000 cows, the increase has no impact.
22	Grass Yield Goal = 20 tons DM per acre per year	Grass Yield Goal remains the same. However, calculations are based upon ongoing grass trials = 16.5 tons DM per acre per year	HDF has committed to studying the operation of the farm at current grass trial levels. While HDF expects the yield goal to realize, existing trial data guarantees that 16.3 tons DM per acre per year can be produced by the current field and system.
23	Nutrient Mass Balance Tables	Revised Nutrient Mass Balance Tables	Balance based upon revised manure numbers, revised pasture acreage, & revised grass yields.
24	Soil Sampling Frequency = Every Three Years	Soil Sampling Frequency = Every Year	Allows for better and more efficient farm management. Sampling the soil for nutrient content and fertility recommendations more often ensures that nutrients are 1) not over applied but 2) not wasted.

DESCRIPTION OF CHANGES

A description of the changes above is detailed by item number below, with the corresponding section reference to the original WMP in bold.

- 1) **Letter to DOH from Group 70 International, "Hawaii Dairy Farm, Waste management Plan - Review Comments", Dated June 23, 2014:** The number of calves on-site has been evaluated to consist of, at most, 150 calves on site, instead of 174 calves as shown in the original WMP. Calves will be managed to be moved off-site after 90 days or after they reach 150 lbs. At 699 calves, this equates to 150 calves.
- 2) **Section 1.0 - Project Overview:** The Cornell Net Carbohydrate Protein System (CNCPS) model is being used for the basis of estimating nutrient content of the manure, based upon grass inputs. The nutritional content of the grass has also been analyzed within field trials and actual grass grown on the Mahāulepū site has been input into the CNCPS model to determine the nutritional value to the animals, and ultimately the nutrient content of their manure. While the original WMP previously utilized the Dairy New Zealand model, HDF believes each model is comparable and ultimately will be used to provide the same information, but the CNCPS model is recognized in the United States. It allows for easier comparison of farm-specific data with other farms in the State of Hawaii and throughout the country. Just as significant, the inputs into the model are now based upon field trials.
- 3) **Figure 2 - Project Location Map:** The project boundary has been slightly altered. The taro farm within the center of the project will occupy more area than anticipated in the original WMP. Additionally, the perimeter boundary has been updated based upon a topographic survey performed for the project by Red Barn Consulting.

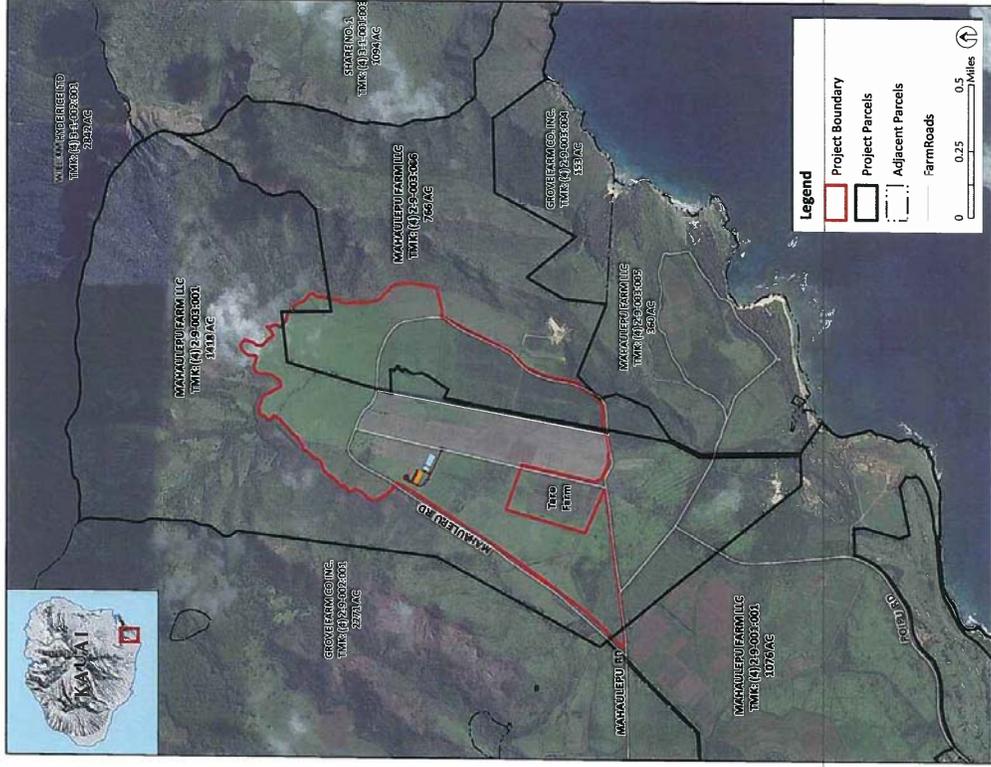


Figure 2 - Project Location Map

4) **Section 2.2.1 – Receiving Water Body State Water Quality:** The Water Quality Maps available from the State of Hawai'i Department of Health are no longer applicable to the project site, and State Water Body Quality is now available only within HAR §11-54. The WMP will now state that this stretch of open coastal waters is classified as Class A for water quality standards in HAR §11-54.

5) **Section 2.2.3 – Water Wells:** The existing private water wells on-site were described. Further field study has indicated that of the original 14 wells in the Māhā'ulepū 14 Well Battery, only 3 remain. These wells will be used for potable water use, a backup source, and for groundwater monitoring.

6) **Section 3.0 – Land Use Summary:** As the project boundaries have changed, the total lease area agreed upon between HDF and Mahalepū Farms (Owner) has reduced from 577.9 acres to 566.8 acres. As mentioned, more area was reserved for the taro farm, and area was removed based upon the topographic survey of the site, which identified perimeter roads and the tree line.

7) **Section 3.0 – Land Use Summary:** At 699 mature dairy cows, the original WMP included setbacks and project buffers, raceways, etc., but did not specify its total area within the pasture area calculations. The total area of the setbacks and buffers is now calculated, and the available grazing and pasture area is now 469.9 acres. Setbacks and buffers include:

- 35-foot setback (fencing) from water resources on the farm
- 1,000-foot setback (fencing) from the County of Kaua'i Kōloa F Well.
- 16-foot to 20-foot wide raceways

The addition of the 1,000-foot setback from the County of Kaua'i Kōloa F Well was requested by the County of Kauai Department of Water following submission and review of the original WMP. HDF has agreed to provide this setback and the WMP must be updated to reflect the change in available pasture areas.

8) **Section 3.0 – Land Use Summary:** Changes in the land use table are required as the project boundary, pasture acreage, and other farm features have been incorporated into the WMP.

Land Use	Acres
Farm	
Paddocks / Pasture	469.9
Cow Races, Farm Roads, Drainage Ways & Setbacks / Vegetated Buffers	77.2
Subtotal	547.1
Headquarters / Dairy Facility	
Milking Parlor, Yards, Sheds, Road, Ponds	9.7
Subtotal	9.7
TOTAL	556.8

9) **Section 3.0 – Land use Summary:** The net total amount of paddocks has been revised. With reconfiguration to the project area and boundaries, the paddocks and cow raceway layouts were updated. Several paddocks were created in the mauka sections of the farm, while several paddocks were removed to maintain a 1,000 foot setback from the Kōloa F County Well, which was agreed to by the County of Kauai and HDF. Several paddocks near the calf sheds were divided into smaller paddocks to allow better management of the grazing calves. The net number of paddocks, therefore, increased by one (1).

Field	Acres	Field	Acres	Field	Acres	Field	Acres
P 101	3.62	P 133	4.26	P 202	3.60	P 234	4.64
P 102	1.12	P 134	4.73	P 203	3.99	P 235	4.62
P 103	4.47	P 135	4.74	P 204	3.40	P 236	4.67
P 104	4.54	P 136	4.78	P 205	6.01	P 237	5.04
P 105	3.08	P 137	4.81	P 206	6.04	P 238	6.14
P 106	2.94	P 138	5.06	P 207	4.17	P 239	7.63
P 107	3.02	P 139	5.53	P 208	4.41	P 301	3.29
P 108	2.91	P 140	6.57	P 209	0.55	P 302	3.94
P 109	1.69	P 141	4.76	P 210	0.59	P 303	3.65
P 110	2.83	P 142	4.93	P 211	0.63	P 304	3.97
P 111	3.04	P 143	4.32	P 212	0.52	P 305	4.01
P 112	4.19	P 144	3.94	P 213	0.51	P 306	4.16
P 113	4.12	P 145	3.87	P 214	0.48	P 307	4.11
P 114	3.80	P 146	3.43	P 215	4.24	P 308	4.02
P 115	4.51	P 147	3.89	P 216	4.54	P 309	4.55
P 116	4.29	P 148	3.88	P 217	4.64		
P 117	3.29	P 149	4.11	P 218	4.20		
P 118	4.54	P 150	4.17	P 219	4.41		
P 119	3.06	P 151	4.23	P 220	4.32	P 313	3.00
P 120	3.49	P 152	3.44	P 221	4.30	P 314	3.01
P 121	3.17	P 153	4.03	P 222	4.29	P 315	3.01
P 122	4.25	P 154	4.46	P 223	4.35	P 316	3.02
P 123	3.53	P 155	3.94	P 224	4.41	P 317	3.78
P 124	3.90	P 156	4.46	P 225	4.38	P 318	3.64
P 125	3.89	P 157	4.14	P 226	4.42	P 319	4.34
P 126	3.24	P 158	5.24	P 227	4.46	P 320	4.29
P 127	4.59	P 159	4.49	P 228	4.50		
P 128	4.38	P 160	4.56	P 229	4.47		
P 129	4.35	P 161	4.52	P 230	3.69		
P 130	4.10	P 162	3.54	P 231	3.39		
P 131	4.02	P 163	3.43	P 232	4.26		
P 132	3.94	P 201	4.47	P 233	4.55	Total	469.9

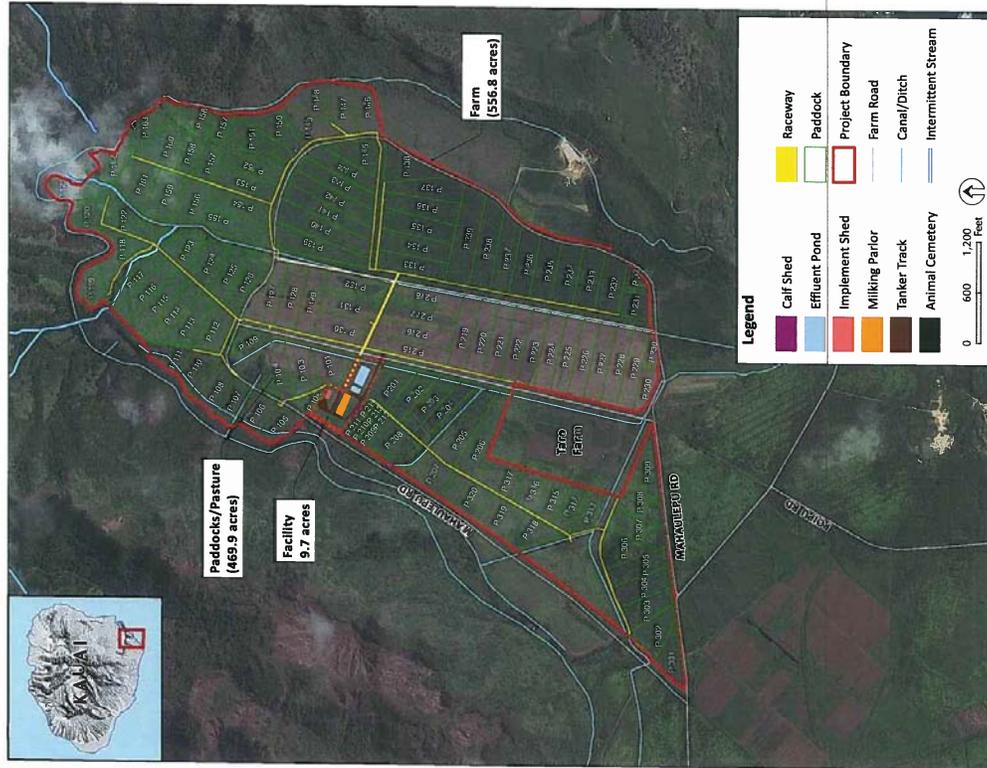


Figure 6 - Paddock Map

10) **Section 4.0 - Farm Description:** The original WMP noted several percentage calculations of areas for specific facilities with respect to the overall farm area. These numbers have been updated as the total farm boundary has been updated and the overall area specified as the "dairy facility" has been slightly altered to 9.7 acres (change in "open space" to paddocks). The majority of the dairy farm area (i.e. ~83%) is dedicated to pasture. Much of the remaining area is dedicated to access roads, cow races, the dairy facility, and waterway setback / buffers. The dairy facility including the parlor, effluent ponds and secondary containment areas is contained within a 9.7-acre area, which represents about 1.7% of the entire farm. The corresponding building areas are under 0.1% of the total farm area.

11) **Section 4.2.6 - Access Road and Tanker Truck Turnaround:** Access to the dairy facility was provided off of Māhā'ulepū Road on the western side of the facility in the original WMP. Due to steeper terrain and the condition of Māhā'ulepū Road along the western side of the valley, access was relocated to one of the main farm roads in the center of the valley. The existing farm road, which passes by the taro farm and Pivot #2, is flat and is the current, operational access road to the various parts of the farm. Relocation of the access will save on construction costs and improve safety for tanker trucks to the facility. The configuration of the tanker truck turnaround adjacent to the implement shed will remain the same as in the original WMP.

12) **Section 6.2 - Drip Irrigation Systems:** The original WMP called for drip irrigation features in the makai areas of the farm where the center pivots could not reach. HDF has decided it will install a gun irrigation system instead, to allow for better management of the system and reduce required upkeep, as maintenance of drip irrigation facilities in active pastures where cows are grazing is expected to be more intense. The gun irrigation design will utilize a hard-hose reel gun nozzle on a cart, which attaches to hydrants, but can be moved around the area to provide even irrigation coverage.

13) **Section 6.5 - Irrigation Demand:** With the reconfiguration of the paddock layout on the farm, irrigated area totals have changed from the original WMP. Percentages of the farm that are irrigated versus non-irrigated have been updated.

Irrigated Pasture Areas:

Irrigated Pasture Area	Acres
Irrigation Pivot #1 (Full Circle)	164.7
Irrigation Pivot #2 (Partial Circle)	120.4
Subtotal	285.1
Gun Irrigation Area	61.4
Total Irrigated Pasture Area	346.5

Non-Irrigated Pasture Areas:

Non-Irrigated Pasture Area	Acres
Pasture Area within 50' Pivot Irrigation Setback	13.8
Remaining Non-Irrigated Pasture Area	109.6
Total Non-Irrigated Pasture Area	123.4

14) **Section 6.5 – Irrigation Demand:** With changes in the irrigation areas, the overall irrigation demand from the grass crop has changed. A reduction in irrigated area results in less irrigation water demand per day. The upper-end irrigation demand estimate, used for planning purposes, will be 2.26 MGD in lieu of 2.93 MGD as indicated in the original WMP.

15) **Section 6.1 – Irrigation Schedule** on page 37 of the original WMP should be renumbered to Section 6.6 – Irrigation Schedule for clarity and to avoid confusion.

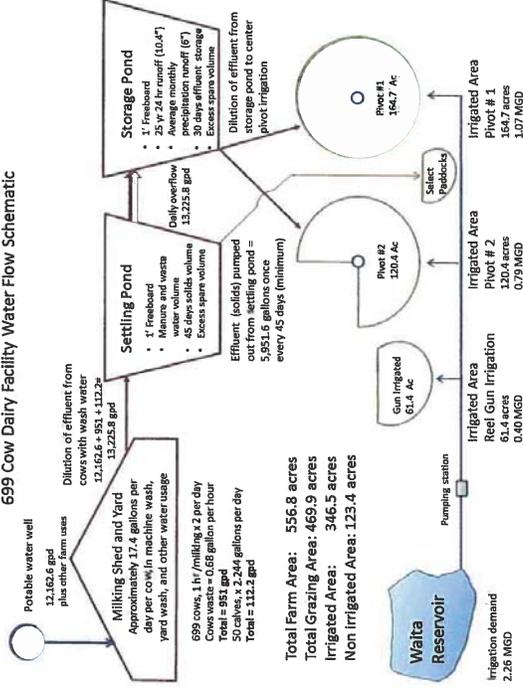
16) **Section 7.0 – Wastewater Treatment:** Public comments on the original WMP correctly indicated that the ponds are not treatment systems, as the original WMP did not indicate any wastewater treatment systems for the effluent. To avoid confusion and for added clarity, Section 7 – Wastewater Treatment in the original WMP should be renamed to Section 7 – Wastewater Management.

17) **Section 7.1 – Effluent / Manure Volume:** The mature cow's weight has been slightly adjusted from 1,210 lbs to 1,200 lbs.

18) **Section 7.1 – Effluent / Manure Volume:** Manure production per mature dairy cow has reduced from 143 lbs per day to 90.8 lbs per day. The change incorporates actual grass trials and forage testing data from grass grown on the farm. Manure production is affected by the nutrient content and chemical composition of the forage. With the updated forage testing data incorporated into the Cornell Model, manure production values have been updated and are consistent with the USDA/NRCS Agricultural Waste Management Field Handbook (March 2008), which utilizes established American Society of Agricultural Engineers (ASAE) values for manure production per cow per day.

19) **Section 7.1 – Effluent / Manure Volume:** The original WMP did not account for calves in the volume projections for sizing of the effluent ponds. Because the calves produce very little manure per day (19 lbs per day) and only a fraction of the calves are within the sheds which ultimately discharge to the effluent ponds, calves are typically not required to be taken into account for nutrient management purposes. However, HDF has updated the WMP to include manure production for calves, meaning there is a slight increase in the daily wastewater generation collected by the ponds. Additionally, wash water projections were increased at 699 mature dairy cows from 10,667 gpd to 12,162.6 gpd based upon an estimated requirement of 17.4 gpd of wash water per mature dairy cow. See revised waterflow schematic:

699 Cow Dairy Facility Water Flow Schematic



20) **Section 7.1 – Effluent / Manure Volume:** The original WMP noted that the required storage period, utilized to size the storage pond, was 23 days, including 17 days for the longest recorded consecutive day rainfall event on record, 4 days between scheduled irrigation of effluent, and 2 days for a forecasted storm event. The total storage period was then set to 30 days to provide additional capacity. 2 additional days are added into the 23 day total for pasture dry time following a significant rain event, bringing the total required minimum storage period to 25 days. However, the 30 day storage period will remain the same and will still provide additional buffer capacity.

21) **Section 7.2 – Effluent Ponds:** Overall storage pond volumes shown in the original WMP have remained the same. However, because of increased storage requirements – due to increased projections in wash water usage (10,667 gpd to 12,162.5 gpd) at 17.4 gpd per mature dairy cow as well as due to the inclusion of calves in the pond sizing calculations, more effluent is shown to be entering into the storage pond at 699 animals. However, since the pond is designed for up to 2,000 cows, there is no impact to the pond sizes.

Design Criteria/Assumption	699 Mature Dairy Cows	2,000 Mature Dairy Cows	Fond
Dairy Washwater Generation	13,225.83 gal	37,801.7 gal	
Percentage of Solids	1%	1%	Settling
Volume of Accumulated Solids for 45-day Period Between Application	5,951.6 gal	17,052.6 gal	Settling
Dairy Lagoon Storage Level	13,225.83 gal	37,801.7 gal	
Minimum Volume of Effluent for 30-day Design Volume Period	396,774 gal	1,136,841 gal	Storage
Depth of 25-Year, 24 Hour Storm	10.4 inches	10.4 inches	Storage
Depth of Normal Precipitation for 30-day Design Volume Period	6 inches	6 inches	Storage

22) **Section 8.2 – Pasture Based Dairy:** Grass yields in the original WMP were projected for 20 tons of dry matter (DM) per acre per year and were the basis for all nutrient application rates and nutrient management planning.

HDF has approximately 18 months of grass trial data, for grass growth on over 70 acres of pasture on the project site. The grass trials simulate an expected grazing and 18-day rest period that a paddock would be subject to on the operational dairy. Current yields (as of 2015) indicate a production of 16.3 tons of DM per acre per year, only after 18 months of trials. Once the pasture is established and has matured, yields of 20 tons of DM per acre per year, or even greater, are anticipated. However, for the purposes of the WMP, HDF has elected to utilize the current grass yield at 16.3 tons of DM per acre per year as the basis of the nutrient management section, as physical trials have proven that the field is at least capable of producing this much forage.

23) **Section 8.4.2 – Nutrient Mass Balance:** With the use of 16.3 tons of DM per acre per year in the nutrient mass balance calculations, the nutrient demand of the grass crop is reduced. In the overall farm ecosystem, less production of grass means that fewer nutrients are required from the crop. However, because the quantity of nutrients supplied by 699 mature dairy cows and 150 calves is minimal on the 469.9 acres of pasture, the nutrient mass balance of the farm is not significantly impacted by the reduction in the grass yield to current data from a yield goal of 20 tons of DM per acre per year. Commercial fertilizer is still required to fulfill the grass nutrient need and maintain high productivity and soil health.

Nutrient Application	Area (acres)	Nitrogen Applied (lbs./year)	Phosphorus Applied (lbs./O./year)
Manure As-Excreted	469.9	129,556	26,966
Liquid Effluent	285.1	11,980.8	2,586.7
Slurry Application	42.0	7,987.2	1,724.4
Total		149,524	31,277
Plant Nutrient Demand		490,200	87,317
Percentage from Animals		30.5%	35.8%
Required Chemical Fertilizer		340,676	56,040
Percentage Demand from Fertilizer		69.5%	64.2%

Month	Collected in Pond (lbs-N/mo)	Collected in Pond (lbs-P/mo)	Excreted on Pasture (lbs-N/mo)	Excreted on Pasture (lbs-P/mo)	Deposited on Farm (lbs-T/mo)	Deposited on Farm (lbs-N/mo)	Deposited on Farm (lbs-P/mo)	Uplake from Farm (lbs-N/mo)	Uplake from Farm (lbs-P/mo)	P Total	P Deficit
January	1,696	366	11,003	2,290	12,699	2,656	41,633	7,416	28,934	4,760	4,760
February	1,532	331	9,939	2,069	11,470	2,399	37,604	6,698	26,134	4,299	4,299
March	1,696	366	11,003	2,290	12,699	2,656	41,633	7,416	28,934	4,760	4,760
April	1,641	354	10,648	2,216	12,290	2,571	40,290	7,177	28,001	4,606	4,606
May	1,696	366	11,003	2,290	12,699	2,656	41,633	7,416	28,934	4,760	4,760
June	1,641	354	10,648	2,216	12,290	2,571	40,290	7,177	28,001	4,606	4,606
July	1,696	366	11,003	2,290	12,699	2,656	41,633	7,416	28,934	4,760	4,760
August	1,641	354	10,648	2,216	12,290	2,571	40,290	7,177	28,001	4,606	4,606
September	1,641	354	10,648	2,216	12,290	2,571	40,290	7,177	28,001	4,606	4,606
October	1,696	366	11,003	2,290	12,699	2,656	41,633	7,416	28,934	4,760	4,760
November	1,641	354	10,648	2,216	12,290	2,571	40,290	7,177	28,001	4,606	4,606
December	1,696	366	11,003	2,290	12,699	2,656	41,633	7,416	28,934	4,760	4,760
Annual Total	19,968	4,311	129,556	26,966	149,524	31,277	490,200	87,317	340,676	56,040	56,040

filed its reply on January 15, 2016. [Dkt. nos. 72, 78.]

On February 2, 2016, this Court issued an entering order finding this matter suitable for disposition without a hearing pursuant to Rule 7.2(d) of the Local Rules of Practice of the United States District Court for the District of Hawai'i ("Local Rules") and ruling on the 56(d) Motion ("2/2/16 EO Ruling"). [Dkt. no 86.] The instant Order supersedes the 2/2/16 EO Ruling. After careful consideration of the motion, supporting and opposing memoranda, and the relevant legal authority, Plaintiff's Rule 56(d) Motion is HEREBY GRANTED for the reasons set forth below.

BACKGROUND

The instant case is a citizen suit brought pursuant to the Clean Water Act ("the Act"), 33 U.S.C. § 1365(a)(1)(A). [Complaint, filed 6/1/15 (dkt. no. 1), at ¶ 2.] Specifically, Plaintiff alleges that Defendants have engaged in "construction and construction support activities" at the site of a "proposed commercial dairy farm" in Maha'uлеpu Valley, on the island of Kaua'i, without the proper permit. [Id. at ¶¶ 1, 5.] According to Plaintiff, this has caused or is "likely to cause discharges of pollutants including, but not limited to, dirt, debris, sewage sludge from land applications, biological materials, rock, sand, or other materials" in violation of 33 U.S.C. § 1311(a) and 33 U.S.C. § 1342. [Id. at ¶¶ 3, 6.]

On November 3, 2015, Plaintiff filed a Motion to Compel Re: Fed. R. Civ. P. 34 Notice of Site Inspection ("Motion to Compel"), [dkt. no. 36,] which the magistrate judge orally granted at a hearing on December 22, 2015 ("12/22/15 Hearing") [dkt. no. 66]. On November 25, 2015, Defendants filed a Motion for Summary Judgment. [Dkt. no. 41.]

The Rule 56(d) Motion seeks deferral of the Court's consideration of the Motion for Summary Judgment until Plaintiff can conduct discovery, including discovery related to the Motion to Compel. [Rule 56(d) Motion at 1.] Defendants argue that the issues raised in the Rule 56(d) Motion are not relevant to the Motion for Summary Judgment, and the Rule 56(d) Motion should therefore be denied. [Mem. in Opp. at 2.]

STANDARD

Rule 56(d) states, in relevant part:

If a nonmovant shows by affidavit or declaration that, for specified reasons, it cannot present facts essential to justify its opposition, the court may:

- (1) defer considering the motion or deny it;
- (2) allow time to obtain affidavits or declarations or to take discovery; or
- (3) issue any other appropriate order.

This district court has stated:

Whether to deny a Rule 56(d) request for further discovery by a party opposing summary judgment is within the discretion of the district court. Nidds v. Schindler Elevator Corp., 113

F. 3d 912, 920-21 (9th Cir. 1996). To obtain a continuance under Rule 56(d), the party opposing a motion for summary judgment must make "(a) a timely application which (b) specifically identifies (c) relevant information, (d) where there is some basis for believing that the information sought actually exists." Blough v. Holland Realty, Inc., 574 F.3d 1084, 1091 n.5 (9th Cir. 2009) (citation omitted).

"A party requesting a continuance pursuant to Rule [56(d)] must identify by affidavit the specific facts that further discovery would reveal, and explain why those facts would preclude summary judgment." Tatum v. City & Cnty. of San Francisco, 441 F.3d 1090, 1100 (9th Cir. 2006). Moreover, "[t]he burden is on the party seeking additional discovery to proffer sufficient facts to show that the evidence sought exists." Nidds, 113 F.3d at 921. The movant must also show diligence in previously pursuing discovery. See Pfingston v. Ronan Engineering Co., 284 F.3d 999, 1005 (9th Cir. 2002) ("The failure to conduct discovery diligently is grounds for the denial of a Rule 56(d) motion."); Kocsis v. Delta Air Lines, Inc., [963 F. Supp. 2d 1002, 1020] (D. Haw. Aug. 5, 2013) ("[T]he district court may deny further discovery if the requesting party failed to pursue discovery diligently in the past.").

Nakagawa v. Cty. of Maui, Civil Nos. 11-00130 DKW-BMK, 12-00569 DKW-BMK, 2014 WL 1213558, at *12 (D. Hawaii`i Mar. 21, 2014) (some alterations in Nakagawa).

DISCUSSION

Plaintiff has made a sufficient showing for a Rule 56(d) continuance. Plaintiff states that its expert, David J. Erickson ("Erickson"), "has not been permitted to conduct an on-site inspection of the property," which was the subject of the Motion to Compel. [Declaration of Charles M. Tebbutt in Support

of Plaintiff's Fed. R. Civ. P. 56(d) Motion and Ex Parte Request for Shortened Time for Hearing ("Tebbutt Decl."), filed 1/4/16 (dkt. no. 69), at ¶ 10.] Plaintiff argues that an inspection would allow Erickson to better understand the "general topography and hydrology of the land," and that Defendants' expert,

Ross Dunning ("Dunning"), "was not as thorough as needed to truly understand whether, and where, discharges have occurred and may be occurring." [Id. at ¶ 11.] Without an inspection conducted by Erickson, Plaintiff "is in the impossible position of having to respond to" the Motion for Summary Judgment "without any of its own expert's observations or opinions." [Id. at ¶ 13.]

Plaintiff states:

In summary, the specific facts and information that [Plaintiff] hopes to elicit from its Rule 34 inspection and other discovery that are necessary for its response to [the Motion for Summary Judgment] include: (1) facts about the existing surface water and storm water collection features on the property, observed by Mr. Dunning, (2) facts about the vegetative buffers observed by Mr. Dunning, including their age and efficacy at preventing pollutant discharges, (3) facts about the extent of ground disturbance, observed by Mr. Dunning and documented in Defendants' invoices, (4) photographs of the sites and features visited by Mr. Dunning and data from soil and groundwater samples, "slug tests," surface water samples, and stream gauging, to be collected during [Plaintiff's] Rule 34 inspection, and (5) deposition and written discovery into the statements and observations of Messrs. Dunning and Garnatz, as provided in their respective declarations in support of [the Motion for Summary Judgment].

[Id. at ¶ 20.] Plaintiff has identified: specific facts; how those facts would prevent summary judgment; and evidence that the sought after facts exist. Moreover, Plaintiff's Rule 56(d) Motion was filed soon after the 12/22/15 Hearing, and soon after notification from Defendants "that they would oppose any further attempt by [Plaintiff] to conduct discovery prior to the Court's consideration of their challenge to [Plaintiff's] standing."² [Id. at ¶ 21.]

Defendants argue that Plaintiff does not have standing to bring a citizen suit under the Act because Defendants "have presented evidence that, long before Plaintiff filed its Complaint, construction activities at the site had ceased, no discharges of pollutants resulting from prior construction were occurring, and Defendant Hawai'i Dairy Farm had committed to halt construction activities until permitting issues were resolved." [Mem. in Opp. at 1.] Plaintiff therefore, according to Defendants, has no right to conduct discovery "[u]ntil Plaintiff presents evidence it possessed before filing the lawsuit to prove standing" - an issue that will be decided by the Motion for Summary Judgment. [Id. at 3.] Further, Defendants argue that

² On December 30, 2015, Plaintiff's counsel sent an email to Defendants' counsel "to inquire as to Defendants' position on [Plaintiff's] ex parte application to shorten time for hearing on [Plaintiff's] Rule 56(d) Motion." [Tebbutt Decl. at ¶ 21.] Defendants' counsel replied by stating that they opposed any further discovery before the Court ruled on the Motion for Summary Judgment. [Id.]

"[w]hat Plaintiff seeks to discover are other facts which are neither relevant to the underlying action . . . nor essential to oppose [the Motion for Summary Judgment]." [Id. at 6.]

Defendants base their standing argument on Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc., 484 U.S. 49 (1987), where the Supreme Court of the United States held that the citizen suit provision of the Act "does not permit citizen suits for wholly past violations." Id. at 64. The Supreme Court also determined that, "[b]ecause the court below erroneously concluded that respondents could maintain an action based on wholly past violations of the Act, it declined to decide whether respondents' complaint contained a good-faith allegation of ongoing violation by petitioner. We therefore remand the case for consideration of this question." Id. at 67.

This district court has directly addressed the issue of ongoing violations under the Act:

Defendants argue that even though they began construction without the permit, they stopped construction and thus ended their violation. Defendants apparently believe that on the day construction ceases, the violations become "wholly past" under the Gwaltney doctrine. The problem with this argument is that it loses sight of the focus of the Act: the water. It fails to account for the interplay of rainwater and the construction site, an interaction that the Act and its regulatory scheme is intended to manage. It is the discharge of water without permit coverage that violates the Act, not the construction activity itself.

The Act defines "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source, . . ." 33 U.S.C. § 1362(12). Regulations include under this term "additions of pollutants into the waters of the United States from surface runoff which is collected or channeled by man; . . ." 40 C.F.R. § 122.2. Pollutants include "dredged soil." 33 U.S.C. § 1362(6); 40 C.F.R. § 122.2. Point sources include any "discernible, confined and discrete conveyance," 33 U.S.C. § 1362(14); C.F.R. § 122.2, "including but not limited to, any pipe, ditch, channel, tunnel, conduit [or] well . . ." From these definitions it is clear that, once a person creates a conduit for pollutants, no further act is necessary to violate the act, regardless of whether the conduit meets the technical permit requirements. If permit coverage is required for that conduit and is not obtained, the conduit is in continual violation of the act. Notably, neither the Act nor the regulations promulgated under it contain an intent requirement for such violations. See United States v. Earth Sciences, Inc., 599 F.2d 368, 374 (10th Cir. 1979).

Molokai Chamber of Commerce v. Kukui (Molokai), Inc., 891 F. Supp. 1389, 1400-01 (D. Hawai'i 1995) (some alterations in Molokai) (footnote omitted). In summary, the district court stated that "violative discharges continue until Defendants obtain a permit coverage **and** bring themselves into compliance with the permit requirements. Without permit coverage, discharges violate the Act; with permit coverage and compliance, they do not." Id. at 1402.

Here, Plaintiff states: "Hawai'i Dairy Farms has engaged and continues to engage in Construction Activities at the Proposed Dairy Site"; [Complaint at ¶ 41:] "Defendants have

discharged, are discharging, and will continue to discharge unpermitted stormwater runoff"; [id. at 44:] "the sources of the pollutants . . . include, but are not limited to, roadways, raceways, concrete troughs, concrete and compacted limestone platforms for troughs, irrigation pipe installation, wells, and other items, machinery and construction materials stored on the Site, any vehicles driving on and off the Site, and others"; [id. at ¶ 45:] "Construction Pollutants present in stormwater discharged from the facility include, but are not limited to, dirt, debris, sewage sludge form land applications, biological materials, rock, sand, or other materials"; [id. at 46:] "stormwater runoff from the Proposed Dairy Site has been and continues to be conveyed to navigable waters by gravity via site grading, slopes, and existing infrastructure"; [id. at ¶ 47:] and "[w]ater quality in Wai`opili Stream exceeds applicable water quality standards" [id. at ¶ 49]. The violations of the Act that Plaintiff alleges are therefore not "wholly past," and the Complaint itself clearly contains a "good-faith allegation of ongoing violation." See Gwaltney, 484 U.S. at 67.³

³ Defendants repeatedly cite Friends of the Earth, Inc. v. Laidlaw Environmental Services (TOC), Inc., 528 U.S. 167 (2000), to support their claim that a plaintiff does not have standing to bring suit under the Act where an alleged violation ends before the complaint is filed. See, e.g., Mem. in Opp. at 1, 2, 4. The passage from Laidlaw that Defendants reference, however, is a citation to Gwaltney. See id.; Laidlaw, 528 U.S. at 175 ("Accordingly, we have held that citizens lack statutory standing (continued...)

The Complaint alleges continuing violations of the Act, and the information Plaintiff seeks is relevant to this issue and Plaintiff's efforts to defeat the Motion for Summary Judgment. In addition, Plaintiff's Rule 56(d) Motion complies with the federal rule and relevant case law. The Court therefore GRANTS Plaintiff's Rule 56(d) Motion.

CONCLUSION

On the basis of the foregoing, Plaintiff Friends of Maha`ulepu, Inc.'s Fed. R. Civ. P. 56(d) Motion to Defeat Consideration of Defendants' Motion for Summary Judgment (ECF No. 41), filed January 4, 2016, is HEREBY GRANTED.

IT IS SO ORDERED.

DATED AT HONOLULU, HAWAII, February 29, 2016.



/s/ Leslie E. Kobayashi
Leslie E. Kobayashi
United States District Judge

**FRIENDS OF MAHA`ULEPU, INC. VS. HAWAI`I DAIRY FARMS, LLC, ET AL;
ORDER GRANTING PLAINTIFF'S FED. R. CIV. P. 56(D) MOTION TO DEFER
CONSIDERATION OF DEFENDANTS' MOTION FOR SUMMARY JUDGMENT (ECF NO. 41)**

³ (...continued)

under [the Act] to sue for violations that have ceased by the time the complaint is filed." (citing Gwaltney, 484 U.S. at 56-63, 108 S. Ct. 376)). As this Court has already explained, Gwaltney addressed a complaint that did not allege an ongoing violation.



PRINCIPALS

Francis S. Oda, Arch.D.,
FAA, ACP, LEED AP

Norman G.Y. Hong
AA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, AIA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
IBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Farouz Gipson
farouz@gmail.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Maha`ulepu, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Farouz Gipson:

Thank you for your email received July 25, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Project Purpose

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

In preparation to develop the Draft EIS, HDF listened to public concerns, retained knowledgeable consultants to conduct technical analyses, refined data gathered from field trials on site, and further incorporated U.S. standards and best management practices to create a world-class design for the environmentally sound pasture-based, rotational-grazing dairy. These technical studies and ground-level trials provided additional field-tested data to refine the Waste Management Plan (WMP). It is common practice to periodically update a WMP as site conditions change or are better known to ensure the regulators are reviewing the most current information. HDF prepared a summary of the changes for the Wastewater Branch to highlight the refinements. On July 13, 2016, DOW Wastewater Branch acknowledged that its questions on the updates to the WMP had been addressed by HDF, and that WWB had no further comments at that time. The WMP is not a component of the EIS, however, all relevant information in the updated WMP was incorporated into the DEIS to ensure consistency and transparency for public review and disclosure.

The State of Hawai'i, Department of Health (DOH), Wastewater Branch reviewed HDF's 2014 Waste Management Plan (WMP) for an operation of 699 mature dairy cows, as required by the *Guidelines for Livestock Management* (DOH, 2010). DOH Wastewater Branch completed its review, and HDF obtained building permits for the construction of the dairy facility.

Public Trust Doctrine

The proposed action is consistent with the public trust doctrine. The Hawai'i Constitution states that all public natural resources, including water resources, are held in trust by the State of Hawai'i for the benefit of the people of Hawai'i and that the State should "conserve and protect" those natural resources but also "promote the development and utilization of these resources." The Hawai'i Supreme Court has held that, as a result, the State has a "dual mandate." That mandate is 1) to conserve and protect the water resources of the State, which include both groundwater and surface water and but also 2) to allow for "maximum beneficial use" of those resources, including for agriculture. The Hawai'i Supreme Court has therefore expressly rejected the concept that "resource protection" is a categorical imperative. It has held that the State should allow "controlled development" that, while giving preference to public use, access and enjoyment, "promote[s] the best economic and social interests of the people of this state."

Based on this dual mandate, the State has developed the State water code, which states that it should be "liberally interpreted to obtain maximum beneficial use of the waters of the State for purposes such as domestic use, aquaculture uses, irrigation and other agricultural uses, power development and commercial and industrial uses" while also adequately providing for the "protection of traditional and customary Hawaiian rights, the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the State for municipal uses, public recreation, public water supply, agriculture and navigation. Such objectives are declared to be in the public interest."

The public trust doctrine therefore involves a balance—protection and conservation of the public natural resources of the State and a maximum beneficial use of those resources, including for agriculture. Designated of "important agricultural lands", including the HDF site, heightens the public interest in development of agriculture as the Hawai'i State legislature has declared that the people of the State have a "substantial interest in the health and sustainability of agriculture as an industry" and, when so designated, the policy of the State is to promote the long-term viability of agricultural uses on those lands, including by "promot[ing] the maintenance of essential agricultural infrastructure, including the irrigation systems." This serves the "compelling state interest in conserving the State's agricultural land resource base."

The proposed dairy farm will use water from Waita Reservoir for irrigation, which is also the water source for several other farmers and ranchers in the area, including a taro farmer. Non-potable water from Waita Reservoir, which uses water from upland streams, provided irrigation water to the sugar plantation that historically operated in the Māhāhūlepu area, and is used for recreational fishing. The reservoir is located west of the HDF site.

Potable water for the dairy farm will be drawn from deep groundwater wells that were installed by the sugar plantation that formerly operated on the site. The potable water will be used as drinking water for people working on the dairy farm and for the cows. As a result, the proposed action will advance both purposes of the public trust doctrine. The dairy farm will advance the important public interest in protecting and conserving agriculture in the State, including on important agricultural lands, and also further the goal of maximum beneficial use of the surface water and groundwater on those important agricultural lands.

Clean Water Act

HDF met with DOH in March, 2014 to determine construction activities that would require an NPDES permit, and was advised such a permit was needed for only construction of the dairy facilities themselves. Construction activities for the sole purpose of growing crops do not require an NPDES permit per HAR §11-55, Water Pollution Control, Appendix C. HDF also consulted with the U.S. Army Corps of Engineers (USACE) which confirmed, in a letter dated October 22, 2014, that maintenance of existing drainage ditches on an existing farm at the HDF site are not prohibited by or otherwise subject to regulation under Section 404 in accordance with 33 CFR Part 323.4.

Pasture-Based Dairy Model

HDF has adapted the New Zealand model – pastoral-based rotational grazing dairy – to U.S. standards and best management practices. NRCS provides extensive guidance for agricultural operations to meet stringent standards including those under the Clean Water Act. Nutrient management is a key tenet, and the protection of waterways has been applied to the design of HDF paddocks using fencing to create large setbacks from drainages. Setbacks at HDF are designed 35-feet from each bank – for a total of 70 feet – to exclude cows from waterways. The setbacks are vegetated to create filter strips to effectively trap soil particles and organic debris from entering stormwater runoff. Setbacks and buffers from public drinking water resources are also incorporated into the farm design (EIS Section 3.3.2 *Agricultural Infrastructure* and Appendix D *Nutrient Balance Analysis*).

Soils

The United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) has mapped and classified soils for more than 95 percent of the United States. Comments received during the initial scoping for this EIS included a "Custom Soils Resource Report for Island of Kauai, Hawaii." The report was generated from the USDA NRCS website, which allows any internet user to define an area of interest, customize data results, and generate a Custom Soil Resource Report. The user can select or deselect parameters based upon which data the user would like to display. These user-generated reports are not evaluated by NRCS.

EIS Section 4.3 characterizes soil conditions, and anticipated impacts from effluent and supplemental nutrient applications. Final EIS Appendix C includes a study by Dr. Russell Yost, Professor and Soil Scientist for over 30 years in the Department of Tropical Plant and Soil Science and the College of Tropical Agriculture and Human Resources at the University of Hawaii Manoa. Findings from this study, directly relevant to your comments, are summarized below.

The NRCS soils classifications and descriptions provide a good information base, however, in-field soils testing is needed to identify existing soil nutrient levels and conditions. The most abundant soil types at the HDF site are Kalihi Clay at 32 percent, Ka'ena Clay Brown Variant at 29 percent, and Luahalei Clay at roughly 14 percent of the dairy site. Laboratory analysis of soil samples collected in 2014 identified levels of pH, phosphorus, nitrogen, potassium, calcium, magnesium, organic matter, salinity, micronutrients and other constituents. The results illustrate that the soils are depleted of nutrients, which is typical for lands formerly used for sugarcane. The soil nutrient status and fertility demands of the primary crop, Kikuyu grass, were used to identify the quantities of nutrients required for productive grass growth. The soils data provide a baseline to guide adaptive nutrient management throughout establishment and maturity of the dairy.

Application of manure provides organic matter that will dramatically improve soil health and allow nutrients from manure to be accessible to grow the grass crop. Traditionally, soil has been the largest area of storage for carbon on earth. However, human disruption of the carbon cycle throughout periods of modern industrialization has released excess carbon into the atmosphere and into the oceans, resulting in a lack of stable carbon that was previously stored in soils. Photosynthesis is the greatest catalyst of transferring carbon from the air into soil. Once in soils, carbon feeds soil microbes that assist plants in acquiring nutrients and create stable forms of soil carbon. Microbes such as mycorrhizae effectively transport a variety of needed nutrients effectively into plants, including nitrogen and phosphorus.

Human waste treatment systems in the Kōloa-Po'ipū developed areas adjacent to Māhā'ulepū Valley rely on the properties of soil. Bacteria, viruses, pathogens, and nutrients within wastewater are attenuated by movement through soils. The longer the attenuation period, the greater is the reduction of these constituents in wastewater. Cesspools and wastewater injection rely on the functions of soil to prevent migration of pathogens to surface water or groundwater; retard and reduce contaminants, and provide a barrier against direct human contact with effluent. For adequate treatment to occur, the soil must be permeable enough to prevent saturated conditions, but also have a small enough pore throat diameter to filter pathogens from the effluent. Clay particles act as sorption sites for nitrate and other nutrients. Bacteria in soils can convert reactive nitrogen species into inert nitrogen gas.

Soils in the Māhā'ulepū sub-watershed are formed by the poorly permeable alluvium that covers the valley floor. Alluvium is highly weathered lava that forms silty clay layer, which is described as 'poorly drained'. The classification of soils as poorly drained indicates a relatively slow rate water movement within soil and to surrounding areas. Poorly drained is not an indication of low or poor infiltration. Infiltration refers to the ability of water to enter the soil surface, whereas 'drainage' refers to the movement of water within or from the soil profile. This slow movement allows for attenuation (reduction) of bacteria, pathogens, and nutrients from manure. Section 4.3 of the EIS characterizes soil conditions, and anticipated impacts from effluent and supplemental nutrient application.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable basaltic lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics.

Surface Water and Marine Environment

The EIS documents both surface water and marine water quality downgradient of Māhā'ulepū Valley. Intermittent streams and man-made ditches convey surface water from the 2,700-acre Māhā'ulepū Valley sub-watershed, which includes the 557-acre proposed HDF site, to the Waiopili Ditch. The terminus of Waiopili Ditch is a deep, muddy basin that joins the ocean through a channel cut through beach sand. The ditch is not an inviting body of water for recreation, though people may cross the channel on foot nearest the beach at a point also utilized by a commercial horse-back riding operation during its twice-daily trail rides. Water quality constituents, including nutrients and bacteria, were quantified at surface water and marine sites. Results of the water chemistry analysis identify that ditch water mixes rapidly and within a short distance of the shoreline. Marine Research Consultants, Inc. (MRCI) concluded input from ditch water is highly restricted in terms of effects to the marine environment, and there will be no substantial effects to marine water quality from dairy operations. However, comments received on the Draft EIS included interest in the marine biota.

To address the comments to the Draft EIS, HDF engaged MRCI to survey the marine biotic community structure and provide baseline documentation of existing conditions. The typical weather and sea conditions in the area are characterized as a high energy environment due to frequent tradewinds and long-period ocean swell, which rapidly mix the water column. This translates to rough water conditions considered dangerous for human recreation except during periods of exceptionally calm wind and waves. The survey was conducted during such a period in November 2016, to allow for safety as well as for visibility within the water.

The shoreline and nearshore marine environment is shaped by a submerged basaltic shelf, formed from ancient lava flows. A semi-embayment is created seaward of the basaltic shelf, bounded by extrusions of pillow lava that form distinct shallow dikes on either side. Within the central area of this semi-embayment are expansive sand flats. Biotopes – areas of uniform environmental conditions that provide a living place for a specific assemblage of plants and animals - were documented and described for the Māhā'ulepū area. The open coastal exposure to long-period south swells and tradewind-generated seas are reflected in the survey findings. There is essentially no biotic community structure in the areas where the ditch water flow meets the ocean.

Coral community structure throughout the nearshore zone that has a hard bottom is generally restricted to the hardy pioneering coral *Pocillopora meandrina*. Where substratum is more sheltered from wave effects or has more complexity in the form of undercutts, ridges and knolls, additional common species are seen: *Porites lobata* and *P. compressa*, and *Montipora patula* and *M. capitata*. Coral cover in such areas was 10 to 20 percent of bottom cover. The exception was a small area approximately 0.3 miles south of the ditch point of discharge, where a well-established coral community was identified. The larger coral colonies likely exist due to a protective lava extrusion that shelters the area from destructive waves; assumedly these corals withstood wave forces associated with two hurricanes that directly impacted Kaua'i in 1981 and 1992. The corals within this area, while not common for the high energy marine environment, are composed of the most common components of most Hawaiian reefs. Due to the distance from the discharge point (approximately 2,000 feet, or 0.3 mile), nutrient or biological inputs from the ditch would be diluted to background marine levels and create no impact.

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waiopili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of both physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 *Nearshore Marine Waters*, and Appendix F.

A large body of scientific literature documents that, contrary to popular belief, reef corals do not necessarily require low nutrient water. In Hawaii, Atkinson et al. 1994 showed that a multitude of corals from around the Pacific Basin growing at the Waikiki Aquarium in high nutrient marine groundwater have higher linear growth rates than corals in the wild. There is no reason to expect that a short-term exposure of a very limited community to elevated nutrients will result in any negative impacts to corals in the mixing zone of Waiopili Ditch and the ocean.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. Future water quality tests will identify any increase of nutrients and bacteriological constituents to the near-shore marine environment. Data from the nearshore water monitoring program will be shared with the DOH CWB, dairy neighbors and the local Kauai community, and allow for evaluation of possible contamination sources.

Pathogens

Complaints from the public citing the high levels of enterococcus in Waiopili Ditch and concerns about the proposed dairy prompted the Hawaii State Department of Health (DOH) Clean Water Branch (CWB) to conduct a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Waikomo watersheds. DOH CWB conducted water sampling within the Waiopili Ditch and areas upstream, and initiated a series of investigations into water quality issues. The Sanitary Survey findings resulted in an expression of concern by DOH CWB that the number of injection wells and cesspools in the adjacent Waikomo watershed, which includes Kōloa and Po'ipū, are impacting the waters of the Waiopili Ditch.

The geological and hydrological composition of the highly urbanized Po'ipū/Kōloa watershed differs from Māhā'ulepū sub-watershed, resulting in different rates of groundwater movement. Groundwater velocity under the proposed HDF site is on the order of 1.2 feet per day, while the groundwater under the Po'ipū-Kōloa watershed area averages 10 feet per day. The faster movement of groundwater reduces the attenuation period – that is, reduced virulence of bacteria, viruses, and nutrients that occurs with movement through soils.

The Part 1 Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors to the fecal indicator bacteria (FIB) levels in ditches running through Māhā'ulepū Valley. CWB noted that Waiopili Ditch is a man-made drainage on private property, and is not an inviting recreational body of water utilized by people. Further testing is needed to more clearly identify whether the source(s) of FIB is human or animals, and DOH CWB has partnered with a University of California laboratory to more definitively determine the source of the fecal contamination in Waiopili Ditch. Results will be published as Part 2 of the Waiopili Ditch Sanitary Survey. The *Waiopili Ditch Sanitary Survey, Kauai Part 1* can be accessed on the DOH Clean Water Branch website under "Library" (<http://health.hawaii.gov/cwb>).

Drainage and Surface Runoff

The drainageways and ditches installed in the late 1800s and early 1900s were developed to bring water to and through the site for sugarcane irrigation. HDF will protect water resources from runoff through both physical setbacks and effluent application limits.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainageway (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Waiopili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waiopili Ditch will be improved by active management of the dairy site.

Mitigation Measures

Section 4 of the EIS provides specific actions proposed to minimize potential impacts in the mitigation measures for each environmental resource category. Sections 4.20 and 4.26 address the potential cumulative effects of the proposed action. The plans for the dairy facilities and operations are subject to numerous County and State regulatory reviews, which include requirements to implement permit conditions to minimize potential impacts. Monitoring requirements will also provide accurate feedback on the effectiveness of measures, which will be refined through ongoing active management.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OEQCKAUAJ>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Comment on proposed Hawai'i Dairy Farm

cochonlibre@gmail.com

Mon 7/25/2016 11:05 AM

To: HDF <hdf@group70int.com>;

1. The availability of nut milks and their significant nutritional value, digestibility and environmental benefit makes the entire dairy plan unnecessary.
2. The number of jobs created- 11- is hardly a huge increase in employment
3. The milk will be transported to O'ahu for processing, and then back to Kaua'i
4. The spent cows will have to endure shipment to O'ahu for slaughter
5. This is not sustainable- it is another prop to allow ranchers to enjoy the rural lifestyle at taxpayer expense.

Cathy Goeggel
President
Animal Rights Hawai'i
808.721.4211



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AIA, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, AIA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Cathy Goeggel
cochonlibre@gmail.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā ulepi, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Cathy Goeggel:

Thank you for your email of July 25, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

A simple analysis of current population and potential fluid milk demand in the State of Hawai'i indicates the entire size of the market is approximately 22,000 cows (HDOA, 2013). Based on U.S. per capita consumption rates, fresh milk consumption in Hawai'i is estimated at a potential 597,000 gallons per week. Meadow Gold currently experiences demand for approximately 400,000 gallons per week. The difference is supplied by packaged milk shipped directly by grocers and big box retailers.

Dairy operations in Hawai'i face significant hurdles, including a monopoly milk processor, limited breeding stock, and a need to educate the consumer on benefits of truly local milk. For Hawai'i to re-establish its dairy industry, it will require the introduction of advanced dairy farming technologies, efficient operational processes, and monitoring to ensure environmental protection standards are upheld. For more information on the purpose and need for the project, see EIS Section 2.0.

While it may be ideal for Hawai'i Dairy Farms to have an on-island milk-processing partner, it is logistically, financially and technically difficult to start such a business in conjunction with developing the first pasture-based dairy farm in the State. The most feasible and sustainable plan is to process HDF's milk with an existing provider on O'ahu or Hawai'i Island. In the future, on-island processing may be a more feasible option. For more information on the purpose and need for the project, see EIS Section 2.0.

HDF has adequately planned its cemetery site and has incorporated Best Management Practices to protect water resources surrounding the HDF site. The animal cemetery is specifically located on the north side of the farm, in an area of relatively flat pasture. Site selection criteria for the cemetery paddock included protection from prevailing winds, and distance more than 100 feet away from any drainageway, 200 feet from any natural watercourse, 300 feet from any well, and more than 20 feet from any buildings. Within the cemetery paddock, pits will be sited based on soil suitability and slope.

Cathy Goeggel
January 3, 2017
Page 2 of 2

A containment berm will be created around the pit area to prevent both run-off on to, and from, the cemetery site. An area of approximately 5,000 square feet is needed for the animal cemetery at the contemplated herd size of up to 2,000 mature dairy cows, which is a fraction of a 3- to 5-acre paddock. Based on preliminary analysis, HDF does not anticipate encountering groundwater in the cemetery paddock area. Pits will be lined as needed in accordance with NRCS Conservation Practice Standard, Animal Mortality Facility Code 316, to protect groundwater quality.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQC:KAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner



Ponoholo Ranch Limited

P O BOX 700489
KAPOLEI, HI 96709
(808) 306-7769

July 24, 2016

Via Email: HDF@Group70int.com

Aloha,

My name is Alan Gottlieb and I am Vice President of Finance & Administration for Ponoholo Ranch Limited, where I have worked for 36 years. I have served 8 years on the Hawaii Board of Agriculture and over 20 years on the West Oahu Soil and Water Conservation District. I am a past President of the Statewide Hawaii Cattlemen's Council and for the past 10 years the chair of the Government Affairs Committee for the Hawaii Cattlemen's Council. Ponoholo Ranch operates on over 10,000 acres on the Big Island, and for the past 30+ years we have operated the largest intensive grazing program in the State of Hawaii.

I am writing in strong support of the Hawaii Dairy Farms draft Environmental Impact Statement (DEIS). As a rancher, I am knowledgeable about animal management and farming. I have reviewed Hawaii Dairy Farms DEIS, and I believe they have sound plans to operate a successful dairy.

Hawaii Dairy Farms will be located in Mahaulepu Valley in an area that has been utilized for cattle grazing in the past. This area is situated away from the beach, homes and resorts, and zoned Important Agricultural Lands. A pasture-based dairy is a perfect fit for this property.

It is very important for our state-wide community to understand how the impacts of this one dairy could have larger implications on the entire ranching community statewide. If projects like this aren't able to succeed because one community opposes having it next door **on designated agricultural lands**, how are we going to be able to maintain, let alone increase, food production for our local community?

Hawaii Dairy Farms will revitalize the local dairy industry, produce local food, and protect the environment. I fully support Hawaii Dairy Farms DEIS.

Aloha



Alan Gottlieb

Will there be percolation tests conducted? Ground water and surface water contamination is of major concern as the high water table is down from the dairy site.

Submitted via email to all parties

The valley floor is subject to flooding the possible impacts of run off, spillage etc into the aquifer and ocean must be determined. Waioipi stream cannot afford more pollution and the impacts on the health of beach goers, as well as the ocean, reefs, fishing and endangered sea creatures could be dire. How is this being assessed?

To whom it may concern:

Will a hydrology study be conducted to include both Maha'ulepu and Pā'a?"

Comments on Draft Environmental Impact Statement for Hawaii Dairy Farms Proposed Dairy in Maha'ulepu Valley, Kauai

These issues have not been addressed by the DEIS. This land was classified by the state in 2005 as important Agricultural Lands. A dairy farm is not an appropriate use of this land. Grove Farm produced an agricultural master plan in 2008 which included more kalo production as well as vegetable and fruit crops. This would be a much more appropriate use of this land. The soil in this area is a grey hydro-morphic soil which is water retentive and particularly suited for growing kalo. What mitigation measures will be addressed to prevent dairy farm run-off from permeating the existing kalo beds which are adjacent to the proposed Dairy site?

I am responding to the Draft Environmental Impact Statement because I feel that the questions and concerns about the Proposed Dairy Operations that I had in my original letter to you have not been properly addressed in the DEIS. My comments on the DEIS are in italics, my original questions are also included.

Cultural and archaeological concerns

The surface water and marine water issues have not been adequately addressed. It is obvious that there will be more pollution rather than less from the proposed dairy. There must be a study done to address the contaminants from Dairy operations on aquatic, avian, edible limu, reef, turtles, monk seals and other marine life in ditches, streams, wetlands and the shoreline.

In my original letter I stated that "MAHA'ULEPU is a living museum with its diverse ecologies, endangered species and cultural sites. It is imperative that the EIS process acknowledges that there may be many more discoveries yet to be unveiled. How can these be protected and managed? Recent findings by HDf of petroglyphs rocks and heiau are examples of this.

Please address protection issues for any existing cultural artifacts such as petroglyph rocks and heiau and the ability of the Native practitioners to be able to continue their practices. "

It would appear that this issue has not been adequately addressed. The EIS must show the impacts to the native Hawaiian practices. There is no public access being provided for native Hawaiian practitioners and the known sacred sites are fenced off and inaccessible. The DEIS has failed to show an effort to discover archaeological sites.

Soil and water impacts

Air quality
"How will the odors and flies be controlled? Using chemicals and introducing other species to ameliorate flies could result in more environmental and pollution problems.

The flies, odor and degradation of the beaches would have severe economic and health impacts on the South shore community and visitor industry. Already there are less visitor bookings for 2016 due to the possible Dairy. There are thousands of people whose livelihoods depend upon the visitor industry whereas the Dairy will be employing very few. Please explain how this can be good for our community."

My original letter states "The type of soil in the valley is particularly suited for Kalo cultivation. Surely the run off from the proposed Dairy will impact the existing soil preventing production of Kalo or anything else in the future? How will run off affect the quality of the soil and the Former Salt Pans which can be restored?"

The air quality and odor impacts have not been addressed at all. There was a recent newspaper report that there was an issue with flies at Kawaiiloa Bay reportedly from CJM Stables where beach goers were forced to leave the beach. The proposed dairy will create much worse issues. When the wind is more than 10 mph dairy smells will be experienced.

This will have severe impacts on the visitor industry and employment on the southshore will be heavily impacted.

HDF is not going to create enough jobs nor does it adequately pay what its employees will do whereas thousands of Kauai residents currently employed in the visitor industry will lose their jobs if this proposed dairy is implemented.

Flora and Fauna

"There are endangered species existing in the valley itself how will these be protected?"

The study done by Rana Biological Consulting is incorrect. There is federally designated critical habit in two areas both within a mile of the proposed dairy site. The Koloa blind cave spider and blind cave amphipod will both be impacted. This issue must be addressed.

Economics / Milk processing

Hawaiians had sustainable ag without milk. Milk is well known to not be good for human consumption. If the milk is shipped off island to be processed how is this sustainable ag and where is the economic validity in such a process? Who is going to make money?"

According to the DEIS it appears that the dairy will not be profitable for some years and no information regarding the fiscal impacts of HDF's proposed dairy has been provided. The issue of a milk processing plant has also not been addressed. Whether on or off island this will impact the environment even further.

Roadways and Traffic

"How will the dairy operations impact the local roads? Will more roads need to be built? What are the traffic implications on already congested roads? Will more roads be built in the Valley? If so how will this impact the environment?"

What are the implications of the island wide increased bovine populations on our island as a whole?

It is obvious that there will be increased traffic particularly in the form of trucks, including milk tankers and deliveries, as well as calves and mature cows leaving and returning to the herd. This is bound to impact local residents and roads.

Nowhere has it been stated as to what the acreage or herd sizes of the auxiliary ranches in Kapa'a or Omao will be, nor is there mention of the processing plant required or the impact on the environment of these auxiliary operations. These issues need to be addressed.

Other comments and concerns

"How can this EIS be non biased with Group 70 as the provider?"

An independent EIS needs to occur.

It appears from the DEIS that there was not a sufficient range of alternatives looked at

As Maha'ulepu is one of the last remaining open spaces on the south shore and is a popular destination for both visitors and residents it is important that binding mitigation measures are included in the final EIS. An environmental remedial bond, monitoring regimes with guaranteed community involvement or even a "good neighbor agreement" are examples of mitigatives measures that could be binding, yet were not included in the DEIS.

The final EIS must include plans for site remediation for when the lease ends or HDF ends operations. How will HDF guarantee that Maha'ulepu will be restored to its current condition? Will a remediation fund be set up to cover the cost of returning the site to its natural state?

"This is a Sacred Place please let's treat it with the respect it deserves and do everything that can be done to ensure that there is no damage to this area." Maha'ulepu Valley is a culturally significant land which needs to be preserved for future generations. It has been the desire of many Koloa residents for years to work with Grove Farm on effecting preservation of this area. There are other options than this proposed Dairy.

Thank you for your consideration.



Yojana Grace

P.O. Box 1551

Koloa, HI 96756

Soundhealing.kauai@gmail.com

January 3, 2017

Yojana Grace
P.O. Box 700489
Kapolei, HI 96709
soundhealing.kauai@gmail.com

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihel
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matusuda
PE, LEED AP

Mi Ry Kim
RIBA, AIB

Craig Tokahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kauai'i, Hawai'i
Response to Comment on Draft EIS

Dear Yojana Grace:

Thank you for your email of July 17, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

As part of the EIS process, the HDF project is subject to a historic preservation review by the State Historic Preservation Division under Hawai'i Revised Statute Chapter 6E and Chapter 13-284. An Archaeological Inventory Survey (AIS) and a Cultural Impact Assessment were conducted by Scientific Consultant Services for the proposed project. Sections 4.7 and 4.8 of the EIS provide an evaluation of archaeology and cultural resources, with the full reports in Volume 2, appendices G and H.

Traditional and historic use of the Māhā'ulepū area includes intensive sugarcane cultivation throughout the entire valley (including the project area), as evidenced by the infrastructure in the valley. Early 20th century maps also document the extent of the fields throughout the Kōloa area, showing the entirety of the current project area consisted of sugarcane lands. Based on the research and comments received from the community, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights or any ethnic group related to numerous traditional cultural practices will not be impacted by establishment of the dairy.

The State Historic Preservation Division accepted the AIS on December 19, 2016 (Appendix G). SHPD concurs with the significance assessments and mitigation recommendations in the AIS, which identifies the 14 plantation-era sites within the project area as significant only under Criterion d (information potential). The letter states no further work is recommended for these sites (50-30-10-2251 through 2262). Two sites outside the Project Area, an enclosure (Site-2250) and a petroglyph complex (Site-3094), were assessed as significant under Criterion d (information potential) and e (cultural value). The SHPD letter states that the current proposed project will not affect these two sites, and no further mitigation is recommended for the project.

Based on the AIS and CIA technical reports, no significant cultural resources are located on the HDF property. Access to adjacent properties will continue to be the responsibility of the land owner, Mahalepū Farm, LLC.

Application of manure provides organic matter that will dramatically improve soil health and allow nutrients from manure to be accessible to grow the grass crop. Traditionally, soil has been the largest area of storage for carbon on earth. However, human disruption of the carbon cycle throughout periods of modern industrialization has released excess carbon into the atmosphere and into the oceans, resulting in a lack of stable carbon that was previously stored in soils. Photosynthesis is the greatest catalyst of transferring carbon from the air into soil. Once in soils, carbon feeds soil microbes that assist plants in acquiring nutrients and create stable forms of soil carbon. Microbes such as mycorrhiza effectively transport a variety of needed nutrients effectively into plants, including nitrogen and phosphorus.

Soils in the Māhā'ūlepū sub-watershed are formed by the poorly permeable alluvium that covers the valley floor. Alluvium is highly weathered lava that forms silty clay layer, which is described as "poorly drained". The classification of soils as poorly drained indicates a relatively slow rate water movement within soil and to surrounding areas. Poorly drained is not an indication of low or poor infiltration. Infiltration refers to the ability of water to enter the soil surface, whereas "drainage" refers to the movement of water within or from the soil profile. This slow movement allows for attenuation (reduction) of bacteria, pathogens, and nutrients from manure.

Section 4.3 of the EIS characterizes soil conditions, and anticipated impacts from effluent and supplemental nutrient application.

The planned improvements and operations at Hawai'i Dairy Farms are compatible with and supportive of State of Hawai'i and County of Kaua'i land use policies, plans and control related to the natural and social environment. The Proposed Project is consistent with and permitted by applicable land use designations and, as discussed in EIS Section 5.0, will contribute a wide range of benefits to further established goals, objectives and policies. In particular, Hawai'i Dairy Farms is consistent with the State and County initiatives for food sustainability and the long-term intended use of Important Agricultural Land on Kaua'i. The dairy is also consistent with the provisions of the State of Hawai'i Agricultural Functional Plan, and long-range planning for diversified agricultural use of Māhā'ūlepū lands under the County of Kaua'i General Plan and the South Kaua'i Community Development Plan.

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waiopili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of physical mixing of water masses.

Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 *Nearshore Marine Waters*, and Appendix F.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and will allow for evaluation of possible contamination sources.

Unlike a conventional feedlot dairy facility that must collect and store all manure produces until future disposal, the majority of manure from a pastoral-grazing operation will be deposited directly on the pasture where it will break down and be incorporated into the soil within a one- to three-day period.

Without a dairy in operation, computer-generated modeling was used to determine the potential impact. Results for the committed herd size of 699 mature dairy cows using typical effluent irrigation conditions show that odors may be detectable by 50 percent of the sensitive population once per 200 hours, or just 44 hours per year, within one-quarter of a mile south of the dairy farm boundary. For wet periods, odor could extend approximately 2.151 feet (less than one-half of a mile) beyond the southern boundary. The closest public use areas beyond the odor extent south of HDF are a stable and golf course, both approximately 0.5 miles further south, and the closest residential and resort units are 1.3 miles beyond the possible odor extent (EIS Figure 4.19-1).

HDF has elected to restrict slurry application to periods when wind speeds are between 9 and 20 mph. With application at the most impactful location, paddocks south of the taro farm, the odor from slurry application barely crosses the southern boundary. Due to wind speeds within this range occurring on average 243 days of the year, the 99.5th percentile is reduced to potentially perceiving the odor just 29 hours per year.

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location – paddocks south of the taro farm – the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas. The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaua'i and those species already in Māhā'ūlepū Valley will

expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

There are no known caves or lava tubes found at or adjacent to the dairy farm property. The nearest cave of the Kōloa Lava Tube System, which provides habitat for two endemic cave species, the Kaua'i Cave Wolf Spider and the Kaua'i Cave amphipod, is located 0.75 miles from the dairy farm property. There is no evidence of lava tubes or caves on the property, and no such features have been reported for the area near the HDF site. No cave invertebrate species will be affected by the dairy farm.

Based on hydrological knowledge derived from all drilled wells analyzed by Nance, the downslope movement of ground water from below the pastures toward the habitats of listed arthropods will not reach into the referenced habitats. Recognizing that the food supply of the wholly saprophagous amphipod is organic matter derived from roots and other decaying plant debris, and since nitrogenous and phosphoric nutrients will promote plant growth, their effects, if anything at all, can be expected to expand the food supply in this oligotrophic subterranean ecosystem.

A major goal of HDF is to reinvigorate the dairy industry and to advance food self-sufficiency in Hawai'i. HRS Chapter 343 does not require profitability analyses as a part of the EIS process.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC. The dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

EIS Sections 4.18 and 4.24 include an evaluation of roadways and traffic conditions, along with potential impacts of the dairy farm construction and operation.

At the committed herd size of 699 cows, 12 vehicle trips per day would result from HDF operations over the long-term. A summary of all regional traffic with projections to 2035 is shown in Table 4.18-1 of the EIS; HDF trips would increase projected traffic by less than one-twentieth of one percent (0.17 percent).

For HDF operations at the contemplated herd size of up to 2,000 mature dairy cows, additional vehicular trips are projected at 11 more per day than at the committed herd size. The projected trips totaling 23 vehicles per day would include employees and delivery vehicles, and represents an increase in the regional traffic of less than one-third of one percent (approximately 0.30 percent).

Group 70 International, Inc. (Group 70) is responsible for the preparation and processing of the HDF EIS. The EIS was prepared in accordance with the requirements of Chapter 343 Hawai'i Revised Statutes and the "Environmental Impact Statement Rules" (Chapter 200 of Title 11, Hawai'i Administrative Rules). The environmental planning team at Group 70 has prepared several hundred Environmental Assessment and EIS documents over the past 40 years, and every document has been accepted by the responsible County, State and Federal agency. On numerous past EIS projects, the Hawai'i Chapter of the American Planning Association has recognized Group 70's professional work with Chapter awards for excellence in environmental planning. Part of the EIS scoping process involves Group 70's experienced team of technical sub consultants that are well-known and qualified in their respective fields of study. For this project, Group 70 is preparing the Hawai'i Dairy Farms EIS with the level of analysis required to properly evaluate and disclose the existing environmental conditions, probable impacts with mitigation, and potential cumulative and secondary effects.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

For our future

Gina Balmores <g.balmores@yahoo.com>

Mon 7/19/2016 6:35 AM

To: HDF <hdf@group70int.com>;

To whom it may concern,

I am a citizen in the Koloa area for 37 years. Born and raised on the island of Kauai. I've seen a lot of changes on the island of Kauai. I feel that having a dairy close to residents, hotels, and beaches will damage the water system and or economy as far as tourism. Who would wanna smell poop when their on vacation? Would you the multi billionaire people who wants to establish the dairy here? Would you wanna smell poop while on vacation? Would you wanna drink or bathe in a water system that may be contaminated? That's what's gonna happened in the long run if a dairy is established near us. And what are you gonna do about it if this happens? It's gonna be too late. I love going to mahalapu since small kid time with my family. My kids ages 5 and 10, loves going to mahalapu! Will their kids have the opportunity to enjoy what we do? Think about it before its too late and you can't fix what you did. For our keikis in the future! Please no dairy in mahalapu!

Mahalo,

Gina Gudy

Sent from my iPhone



January 3, 2017

Gina Gudooy
g.balmores@yahoo.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Gina Gudooy:

Thank you for your email of July 18, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

HDF will be the first dairy in Hawai'i to employ rotational-grazing, which utilizes manure as a valuable resource. This is a fundamental difference and advantage over conventional feedlot dairy operations, which typically have insufficient land to recycle the nutrients for uptake by forage plants and instead rely on imported feed and large storage lagoons to hold manure. The rotational-grazing method is cost-effective as it reduces the need to import fertilizer and feed, and minimizes potential impacts to the environment by using 100 percent of the manure as nutrients to grow the majority of the forage for the herd. Benefits of pasture grazing include, but are not limited to, improved soil health, and increased animal health and productivity. The dairy will feature modern facilities and practices that will comply with all applicable Federal and State environmental standards.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, AIA
AIA

Paul T. Matusuda
PE, LEED AP

Ma Ky Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

Both groundwater and surface water conditions in and around Māhāūlepu Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhāūlepu Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waiopili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of both physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 *Nearshore Marine Waters*, and Appendix F.

Unlike a conventional feedlot dairy facility that must collect and store all manure produces until future disposal, the majority of manure from a pastoral-grazing operation will be deposited directly on the pasture where it will break down and be incorporated into the soil within a one- to three-day period.

Without a dairy in operation, computer-generated modeling was used to determine the potential impact. Results for the committed herd size of 699 mature dairy cows using typical effluent irrigation conditions show that odors may be detectable by 50 percent of the sensitive population once per 200 hours, or just 44 hours per year, within one-quarter of a mile south of the dairy farm boundary. For wet periods, odor could extend approximately 2,151 feet (less than one-half of a mile) beyond the southern boundary. The closest public use areas beyond the odor extent south of HDF are a stable and golf course, both approximately 0.5 miles further south, and the closest residential and resort units are 1.3 miles beyond the possible odor extent (EIS Figure 4.19-1).

HDF has elected to restrict slurry application to periods when wind speeds are between 9 and 20 mph. With application at the most impactful location, paddocks south of the taro farm, the odor from slurry application barely crosses the southern boundary. Due to wind speeds within this range occurring on average 243 days of the year, the 99.5th percentile is reduced to potentially perceiving the odor just 29 hours per year.

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location - paddocks south of the taro farm - the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas. The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Jim and Kathy Hadwin
2640 Puuholo Rd. #114
Koloa, HI 96756
Cellular 406-250-6078
jkhadwin@bigsky.net

July 23, 2016

Laura McIntyre (808) 586-4337
State of Hawaii, Department of Health
1250 Puuheniwi Street,
Honolulu, HI 96813

Jeff Overton (808) 523-5866 ✓
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813.

Hawaii Dairy Farms, LLC.
P.O. Box 1699
Koloa, HI 96756-1690

Subject: Hawaii Dairy Farms DEIS submitted May 26, 2016

Aloha,

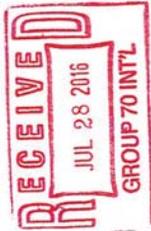
We have reviewed a number of subjects of interest in the subject DEIS and have many, many concerns and questions. Let us concentrate here on three for this particular comment letter – economic impact, ground water quality, and waste management/dairy model used.

Economic Impact

Whereas HDF states that home values will not be negatively impacted. I cannot find any form of economic impact study within the DEIS. On the contrary, there are numbers of past examples in the United States showing that the presence of dairy farms, pig farms and/or similar animal feed lot operations has had a devastating impact on properties next to and within 10 miles of the operation. These examples show declines from 26 to 88%! This would have a dramatic effect on taxes, employment, and ultimately tourism throughout the entire County of Kauai. I have included the June 27, 2016 letter to Mayor Carvalho from John Kilpatrick, PHD, MAI, FRICS, Hawaii State Certified (General) Appraiser No. CGA 0001054, for your review.

Ground Water Quality

A major source of potable water for Koloa is well F. This well appears to be only 600 feet from the HDF boundary as shown on the DEIS Map 4.16-1, and not the 1000 foot setback claimed on the Revised Waste Management Plan of May 25, 2016 indicated in Section 3.0, Land Use Summary. I question whether this distance is sufficient to insure no contamination of our drinking water. Note the following paragraph found on page 813, Volume 3, Letters of the DEIS: "Though the waterbody in which the County wells occur is confined and hydrologically separated from shallow groundwater in the Mahaulepu Valley, HDF established a 1,000-foot setback surrounding the Koloa F well in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section." However, the Kauai County Water Department classified



Koloa Well F, as unconfined, irreplaceable and highly vulnerable on March 16, 2004 in Appendix B, page 196, Hawaii Source Water Assessment Program.

Waste Management/Dairy Model

The operating plan embraced by HDF was the so called New Zealand Model. Recently HDF has stated that "the farm will be based on the most successful island dairy models in the world..." (Revised WMP May 25, 2016). The newly adopted plan is the Cornell Net Carbohydrate Protein System. There is no indicator which identifies that model with an island based entity and I believe an island environment is extremely different from that encountered on large land masses. Supposedly recent updated forage testing by the Cornell model suggests for Kauai that rather than 143 pounds of manure per day (page 589, Volume 2, DEIS), the average is reduced to 90.8 pounds per day (Revised WMP, item 18). How can this be? Mathematically that's a 37% reduction in solid waste by adopting a new model. I submit that's not a credible position. Which model will be used in reality and what will the actual waste be per cow per day?

The above are but a few concerns which can be aired and enough is said here for the moment. We are deeply concerned for the future well-being of our island which we have enjoyed for more than 26 years. We are in love with Kauai and fear it's ultimate destruction if HDF becomes a reality in the Mahaulepu Valley.

Respectfully submitted,

Jim & Kathy Hadwin

Encl.

Cc:
Bridget Hammerquist
Friends of Mahaulepu
P.O. Box 1654
Koloa, HI 96756

The Honorable Bernard Carvalho, Jr.
Mayor, County of Kauai
4444 Rice Street, Suite 235
Lihue, HI 96768

WEST COAST OFFICE
2101 FOURTH AVENUE, SUITE 820
SEATTLE, WASHINGTON 98121
PHONE 206-623-2935
FAX 206-623-2985

Greenfield Advisors, LLC
Page 2



June 27, 2016

The Honorable Bernard Carvalho, Jr.
Mayor, County of Kauai
4444 Rice Street, Suite 235
Lihue, HI 96766

Dear Mayor Carvalho:

I have been asked by a number of your constituents to provide my professional analysis of the economic impact of a proposed high-density dairy operation on surrounding property values and on the economy of the island as a whole. I am an economist and real estate appraiser. I have inspected or valued a number of properties in Hawaii over the years, including the proposed dairy site and many of the properties owned by Grove Farm. Residents of Kauai have reached out to me because I am considered a leading authority on the impact of concentrated animal operations on the values of neighboring properties. I have written two recent articles on this subject for *The Appraisal Journal*, the official peer-reviewed publication of the Appraisal Institute, of which I am a MAI-designated member. I have consulted on several similar situations across the United States, including the aftermath of the famous *Central Industries* case in Mississippi, in which several individuals operating a poultry operation were found guilty of federal felonies, and property value impacts were felt nearly 12 miles away.

It is widely recognized that large, concentrated animal operations have a negative impact on surrounding properties. This impact is both physical as well as economic. I am not a physical scientist or physician, but I have studied many of the scholarly articles published by authorities in those fields. They consistently find that surrounding properties can be impacted by insects, odors, dust and dirt, various forms of contaminants, noise, and even emotional distress stemming from the visual proximity and noise (particularly at night). The nearby roads suffer wear and tear from truck traffic, local water sources are strained, and waterways are severely stressed. As you might expect, local wildlife and native crops and plant life suffer significantly. All of this is well documented in the literature.

The concentrated animal operation proposed for Kauai is well above the top of the scale that prompts Environmental Protection Agency warnings. Such large operations are automatically subject to regulation under the Clean Water Act. Water quality problems include discharge of nitrogen and phosphorous pollution, organic matter, "solids" (manure, spilled feed, bedding and litter, hair, and even parts of animal corpses), salts, arsenic, odors and volatile compounds, antibiotics, pesticides, hormones, and disease-causing pathogens such as bacteria and viruses. Naturally, all of these degrade the local water supply, impacting people, wildlife, and plant life. Air quality problems include the release of ammonia, hydrogen sulfide, methane, and particles, all of which pose human health risks. According to the National Association of Local Boards of Health, "Concentrated animal feeding operations or large industrial animal farms can cause a myriad of environmental and public health problems."

From an economic and valuation perspective, properties next door to one of these are nearly worthless. All of the properties close enough to feel the physical effects will likely see their values go down. The economic burden of massive concentrations of waste is passed on to the surrounding neighbors. For example, Hawaii Dairy Farms plan states that each Kiwi Cross dairy cow will

weigh 1,200 pounds, and will thus be expected to generate 96 pounds of manure per day. The natural environment surrounding a 2,000 head livestock operation will suffer with the burden of 192,000 pounds of cow manure per day, or over 35,000 tons of cow manure per year. Note that manure is just one of the many environmental impacts one would expect from this facility. I would also note that the negative impacts of this operation will likely be felt even at the somewhat smaller initial herd size proposed in this case.

As you probably know, the rest of the county will also likely suffer. In similar situations, tax collections are reduced as local property owners appeal their tax assessments. Often, other local businesses, such as tourism, are crowded out by their new, obnoxious neighbor. Generally, the concentrated animal operation employs few new farmhands, since many aspects of these concentrated operations are automated. In fact, some communities may see a net decrease in local farm employment, because a new, big operation crowds out smaller, more labor-intensive neighbors, such as the nearby taro and other small farmers. To add insult to injury, these massive animal operations usually have the muscle to negotiate direct purchases from distant suppliers, thus avoiding the local retailers. Studies have shown that larger operations spend, on average, 20% less locally than smaller, more traditional farms. Other studies show that counties with these massive livestock factories have lower economic growth rates than traditional farming communities.

In my most recent *Appraisal Journal* article, I documented numerous communities around the U.S. where property tax assessments had to be lowered for homes near these big animal operations. Reductions ranged from 10% to 40%. Naturally, this impacts the county as a whole negatively, since county tax collections must either suffer overall reductions or be increased for county residents farther away to make up the shortfalls.

I also documented numerous court cases. Courts have been fairly consistent in recognizing the negative impact of these big animal operations and awarding both individuals and class-actions. Ironically, many of these court rulings have been in traditional "farm-friendly" states, where property owners might be considered to be familiar with animal operations. However, the size and scale of these massive factory farms upset even traditionally farm-friendly communities. Imagine, for a moment, the disruption in Kauai where this sort of thing is unheard-of and unexpected.

Finally, I documented numerous scholarly studies on property values. These studies consistently find that the values of nearby homes are negatively impacted. In Mississippi, I found value impacts as far as nearly 12 miles away, in an area where rivers and flooding carried waste many miles from the facility. In other similar situations, surrounding property values declined by 26% to as much as 88% as a result of these factory farms.

Mayor Carvalho, I appreciate the opportunity to address you on this topic by letter. I will be in Kauai in mid-July, and if I can answer any questions about this, I am at your disposal. Please note that while I am a Hawaii State Certified appraiser, I have not performed an appraisal of any of these properties for purposes of this assignment, and this letter does not constitute an appraisal report.

Sincerely,

GREENFIELD ADVISORS LLC

John A. Kilpatrick, PhD, MAI, FRICS
Hawaii State Certified (General) Appraiser No. CGA 0001054



GROUP 70
INTERNATIONAL

PRINCIPALS

Francis S. Oda, AIA, AIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihel
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AIA, LEED AP

Christine Mendes Rucolo
AIA, LEED AP

James L. Stone, AIA, AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
IBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACP

Hiroshi Higb
AIA

Jim and Kathy Hadwin
January 3, 2017
Page 2 of 3

January 3, 2017
Jim and Kathy Hadwin
2640 Puuholo Road #114
Kōloa, Hawai'i 96756
jkhadwin@bigsky.net

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Jim and Kathy Hadwin:

Thank you for your email received July 25, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Malhaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 Hydrology and 4.17 Surface Water Resources & Nearshore Marine Environment and Appendices E and F contain further information on the analyses.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. Groundwater confined within the underlying volcanics is the source of drinking water. EIS Figure 4.16-1 Geology of Māhā'ulepū and Vicinity displays the volcanic geological history of the area.

Though the confined groundwater tapped by the County wells is hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well from. The flow is modeled from the west- north-west, and HDF is to the east (EIS Figure 4.16-3).

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainage way (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainage ways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

In preparation to develop the Draft EIS, HDF listened to public concerns, retained knowledgeable consultants to conduct technical analyses, refined data gathered from field trials on site, and further incorporated U.S. standards and best management practices to create a world-class design for the environmentally sound pasture-based, rotational-grazing dairy. These technical studies and ground-level trials provided additional field-tested data to refine the Waste Management Plan (WMP). It is common practice to periodically update a WMP as site conditions change or are better known to ensure the regulators are reviewing the most current information. HDF prepared a summary of the changes for the Wastewater Branch to highlight the refinements. On July 13, 2016, DOW Wastewater Branch acknowledged that its questions on the updates to the WMP had been addressed by HDF, and that WWB had no further comments at that time. The WMP is not a component of the EIS, however, all relevant information in the updated WMP was incorporated into the DEIS to ensure consistency and transparency for public review and disclosure.

We believe you are referring to the Cornell Net Carbohydrate and Protein System (CNCPs) model. This model incorporated U.S. standards and best management practices for a world-class, environmentally sound design, and allows for an accurate accounting of manure and nutrients specific to the type of cow and type of grass to be used at HDF. Ground-level trials at the HDF site provided additional field-tested data to refine the Waste Management Plan (WMP). It is common practice to periodically update a WMP as site conditions change or become better known to ensure the regulators are reviewing the most current information.

While the Standard D384.2 Manure Production and Characteristics (ASABE, 2005) can still be used today to estimate manure production and nutrient excretion, the CNCPS model uses more realistic nutrient inputs. ASABE is a simplified and general standard last updated in 2005. The ASABE calculations were reasonably correct in year 2000 but have not accounted for changes in genetics, management systems, and nutritional advances over the past 16 years. The ASABE equations, unlike the CNCPS system, do not use farm specific animal, environmental, and dietary inputs to determine its manure production and nutrient excretion estimates, and instead uses "book values".

NRCS Conservation Practice Standard Code 590 – Nutrient Management allows for the use of realistic nutrient inputs when planning for nutrient outputs. The manure production and nutrient excretion estimates from the CNCPS model are more accurate and represent farm specific animal inputs, dietary inputs from available grass trials from the HDF site, and incorporate changes in farm management, genetics, and nutritional advances. Therefore the CNCPS model is more accurate than if manure excretion and nutrient output was based upon "book values". Manure production and nutrient excretion estimates from Exponent Table 1 are based upon "book values" of the ASABE Standard, which uses the publication Dairy NRC 1988 for diet formulations and input (NRC is the National Research Council that published a handbook, "The Nutrient Requirements of Dairy Cattle"). The 28 year old Dairy NRC 1988 is the predecessor of the most recent NRC publication, last updated in 2001. Because of obsolescence associated with these NRC predictions, the 2015 CNCPS model was used for HDF calculations.

References to the CNCPS model calculations can also be found in peer review scientific literature, namely, in the Journal of Dairy Science 98:6361–6380 The Cornell Net Carbohydrate and Protein System: Updates to the model and evaluation of version 6.5. M. E. Van Amburgh, et. al. and also in the JDS 95 :2004–2014 Development and evaluation of equations in the Cornell Net Carbohydrate and Protein System to predict nitrogen excretion in lactating dairy cows R. J. Higgs, et. al. and JDS 81: 2029 - 2039 Evaluation and Application of the Cornell Net Carbohydrate and Protein System for Dairy Cows Fed Diets Based on Pasture Kolver, E.S. et al. For more detailed information on the waste production and management, please refer to EIS Section 3, Appendix D and Volume 5 for relevant discussion and technical supplements.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 19, 2016

Laura McIntyre
State of Hawaii, Department of Health
1250 Punchbowl Street
Honolulu, HI 96813

Reference: Kauai Dairy Farm

Dear Ms. McIntyre:

I write to you as a longtime resident and home owner in the Poipu area on Kauai.

As the plans progress for the proposed Dairy Farm on the South Shore of Kauai, I would like to express my strong opposition to the farm as it is proposed and the location. I do not believe there is extreme opposition to a dairy farm on Kauai if it would provide fresh milk and lower prices for local residents.

The serious opposition relates to the location. The proximity to residences, tourist accommodations, as well as hotels, presents both an extreme health hazard, coupled with severe real estate consequences, resulting in lower tax revenues for the state and county. There are adequate locations for a dairy, if it is necessary throughout the island. I urge the state to consider the dire consequences.

Having lived in Poipu for many years, I have experienced the result of easterly winds in the form of field fires close to the proposed dairy, in the form of ashes covering our home. The potential of the obnoxious odors, coupled with the fly problem, contribute enough negative issues to allow the state to determine that this location is detrimental to the community and the island.

I respectfully request that the Department of Health rescind any approvals to the dairy project and respect the rights of homeowners on the South Shore of Kauai.

I would also request that the State Review the many false submissions to the State by the Dairy Farm group and the revisions to the EIS, which have not proven to overcome the many negative issues surrounding the proposed dairy.

Thank you for your consideration and I hope the State does the right thing for the people of Kauai.

Sincerely

John Halliday
2355 Hooahu Road
Koloa, HI 96756

John Halliday
January 3, 2017
Page 3 of 3

DEIS Comment HDF Dairy Proposal for Maha'ulepu - Part 1 of 2

Bridget Hammerquist <bridgethammerquist@hawaiiantel.net>

Mon 7/25/2016 9:28 PM

To: doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; HDF <hdf@group70int.com>; Jim Garmatz <jim@hawaiidairyfarms.com>;
C.: Sarah Matsumoto <Sarah@tebbuttllaw.com>; Charlie Tebbutt <Charlie@tebbuttllaw.com>;

📎 11 attachments

HDF Fact sheet page 2.pdf; HDF Fact sheet page 1.pdf; NRCS Letter/Director, Bruce Petersen 7-15-15.pdf; 2016.0613 GARMATZ_JAMES V1.pdf;
2016.0614 GARMATZ_JAMES V2.pdf; Mahaulepu Resolution 2001.pdf; Water Quality Waiopili Nutrient Chart.png; Hammerquist EISPN
Comment.pdf; HDF response to Hammerquist EISPN Comment.pdf; Robert and Bridget Hammerquist Comment on DEIS.docx; Soil Analysis
and Custom Soil Resource Report.pdf;

Because of their size, two referenced attachments will be in a separate email, Part 2

Attn: Laura McIntyre (808) 586-4337
State of Hawaii'i, Department of Health
1250 Punchbowl Street
Honolulu, HI 96813

July 25, 2016

Attn: Jeff Overton (808) 523-5866
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813.

Hawai'i Dairy Farms, LLC.
P.O. Box 1690
Kōloa, HI 96756-1690

RE: Response to Draft EIS, Hawaii Dairy Farms (HDF), Ulupono Initiative
Industrial dairy at Maha'ulepu

To Whom It May Concern,

My Comments are as follows.

1. The dairy proposed for Maha'ulepu initially reported a herd size of 1,880 cows. See attached fact sheet prepared by HDF.
2. In response to community concern, HDF claimed they would "reduce their herd size". That reduction was not a reduction at all because they now contemplate a herd size of 2,000. Yes, they claim to begin with a herd of 699 dairy cows, but they are arriving pregnant. The farm manager testified that all dairy cows

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location - paddocks south of the taro farm - the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas. The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAU>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

would deliver within 15 days of their arrival and that all mature pregnant cows would arrive on the site within 60 days. So much for starting smaller. As each of the following quotes from the DEIS confirm, this operation is not about 699 mature dairy cows and never has been. There are at least 70 additional entries in Volume 1 and 125 location in Volume 2 where HDF "Contemplates" and then describes their plan for 2,000 mature dairy cows:

"In consideration of the contemplated possible expansion of the herd, the ponds for HDF will be sized to accommodate the potential maximum effluent generated by up to 2,000 milking cows." HDF Vol. 1, DEIS, pg 1-8 (pdf pg 26)

"Nutrient mass balance is described in detail within EIS Section 3 and Appendix D. A concise tabulation of the nutrient mass balance for the committed herd size (up to 699 mature dairy cows) and contemplated herd size (up to 2,000 mature dairy cows) are shown in the tables below." HDF Vol. 1, DEIS, pg 1-10 (pdf pg 28)

"The contemplated Proposed Action calls for a possible expanded herd up to 2,000 milking cows." HDF Vol. 1, DEIS, pg 1-12 (pdf pg 30)

"1.7.2 CONVENTIONAL FEEDLOT DAIRY ALTERNATIVE

A total of either 699 or 2,000 dairy cows would be confined within several large barns." HDF Vol. 1, DEIS, pg 1-18 (pdf pg 36)

"The requirement to supply imported feed would be significant, estimated at 8 to 10 tons per day for a mature milking cow herd of 699 cows, or 25 to 30 tons per day for up to 2,000 cows." HDF Vol. 1, DEIS, pg 1-18 (pdf pg 36)

"The potable water demand for the contemplated possible herd expansion up to 2,000 mature dairy cows is shown in Section 3.8.1." HDF Vol. 1, DEIS, pg 3-12 (pdf pg 64)

"The ponds for HDF will be sized to accommodate the potential maximum effluent generated from the contemplated herd size of up to 2,000 mature dairy cows." HDF Vol. 1, DEIS, pg 3-14 (pdf pg 66)

"The storage pond is sized to hold a volume equivalent to 30 days of effluent from the contemplated herd size of up to 2,000 mature dairy cows..." HDF Vol. 1, DEIS, pg 3-16 (pdf pg 68)

"The capacity of the secondary containment is approximately 1,125,600 gallons, which is roughly equivalent to the total wastewater volume for a 30-day period from the potential contemplated herd size of up to 2,000 mature dairy cows." HDF Vol. 1, DEIS, pg 3-18 (pdf pg 70)

"The storage pond effluent level will be lowered after each application cycle, as effluent applied by just one run of either pivot is greater than the daily effluent generation of 0.038 MGD at the contemplated herd size of up to 2,000 mature dairy cows." HDF Vol. 1, DEIS, pg 3-29 (pdf pg 81)

"Pond levels will be maintained at an operation level that allows capacity to store - in addition to capacity for the 25-year, 24-hour rainfall event - normal precipitation for up to 30 days, suspended solids and effluent from the contemplated herd size of up to 2,000 mature dairy cows, and slurry mixing volume." HDF Vol. 1, DEIS, pg 3-29 (pdf pg 81)

3. The DEIS is replete with conflicting data, whether on quantity of waste each dairy cow is expected to produce daily, rainfall data, pasture slopes and/or dairy plan relied on ("New Zealand", "Island Model" or "Cornell Model") without specific detail as to what aspect of any of those plans they intend to implement.

4. The DEIS and any Final EIS filed by HDF and/or Group70 should be rejected/denied outright based on HDF's false statements under oath on their NOI Stormwater Permit Application:

"Standard NPDES Permit Conditions (Version 14)

The following are causes for terminating a permit during its term, or for denying a permit renewal application:

- (1) Noncompliance by the Permittee with any condition of the permit;
- (2) The Permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts or the Permittee's misrepresentation of any relevant fact at any time"

The text in the DEIS clearly describes various construction activities in future terms. The farm manager, in his testimony, full text attached, states he worked with Paul T. Matsuda for at least 2 days before signing HDF's Stormwater Permit Application. He knew he signed an oath that provided the permit sought was not for work already completed. By his testimony, HDF admits that many of the permit required construction activities had already been completed or nearly completed:

Testimony describing the timing and extent of HDF's construction activities listed on their Permit Application can be found on pp. 43-45, 53, 56-57, 75-77, 84-90, 92-93, 96, 104-06, 110-11, 118-19, 123-24, 128, 140-41, 149-51, 157, and 165.

In Garmatz's testimony, pages 56:5 - 57:13, he admits that in his August 17 NPDES submission to the Department of Health, he represented that "land disturbance associated with this project as listed in the NOI has not commenced, including, but not limited to, preliminary site construction such as **installation of fencing and irrigation systems.**" (Emphasis added).

Other construction activities, that HDF has performed and also lists as work to be done, in their NOI application include:

- (1) clearing and grubbing of dairy facility site (Garmatz Testimony pages 75:12-17);
- (2) grading for and installation of waste settling and storage ponds (Garmatz Testimony pages 105:23-106:6, 108:12-109:4);
- (3) trenching for and installation of new potable water distribution systems for livestock consumption through watering facilities and concrete troughs (Garmatz Testimony pages 84:8-89:8); and
- (4) grading and maintenance for existing agricultural ditches on site (as needed) (Garmatz Testimony pages 165:19-23).
- (5) site work involving the use of a backhoe has been performed multiple times: (Garmatz Testimony pages 118:3-119:6; 123:6-17; 123:23-124:6; and 28:9-19)
- (6) Garmatz also testified that groundwater wells were constructed between February and June 2015, and as stated above, HDF did so without any NPDES SW Permit: Garmatz Testimony page 96)

5. Other material misrepresentations to governmental entities and the public include but are not limited to: (1) HDF had a "NRCS Permit - completed" See page 2 of attached HDF fact sheet. There is no such thing as an NRCS Permit in the State of Hawaii.

(2) HDF is operating in accord with their NRCS approved Conservation Plan: "The setbacks and restorations are part of an approved NRCS Conservation Plan for Hawai'i Dairy Farms..." HDF Vol. 2, DEIS, pg 21 (pdf pg 141) The truth is HDF never had and does not have an NRCS approved Plan. When the NRCS Director, Bruce Petersen, answered an inquiry on this very point, he described "concerns" that the NRCS office had and stated that the NRCS does not approve (or permit) agricultural plans. Please see his letter of July 15,

2015, copy attached.

(3) HDF's submissions on temperature are truly inconsistent and that is important because temperature affects the growth of the grass crop, the animals need for potable water and the amount of irrigation necessary which is directly related to the potential for runoff where large segments of the site are saturated after receiving .2 inches of moisture (Ksat reading for 52.9 percent of the site is 0.2 inches) see attached. The following examples show how many conflicting reports there are about the temperature for the proposed dairy site. In one of the following HDF reports the temperature range at Poipu but immediately refers to "...its inland location and valley topography." Poipu is not inland nor a valley and the moderate temperature ranges at Poipu are not the temperatures experienced at Maha'ulepu. Here are all the differing temperature ranges and when they were claimed that have been identified thus far:

"The average local temperature is in the ideal 43°F and 70°F range for Kikuyu pastures."

HDF, WMP, pg 59, May 2014

"The average local temperature is in the ideal 60°F and 104°F range for Kikuyu pastures."

HDF, WMP, pg 59, July 2014

"The Po'ipu area is generally known for its mild conditions. Temperatures range from 72 to 86°F in the summer months, and 64 to 80°F in the winter. The area's climate is greatly influenced by its inland location and valley topography." HDF Vol. 1, DEIS, pg 4-2 (pdf pg 95)

"The average local temperature is in the ideal 60°F and 104°F range for Kikuyu pastures."

HDF Vol. 2, DEIS, pg 62 (pdf pg 182)

"The climate of the surveyed area is not extreme, with rainfall accumulating at an average rate of 53 inches per annum, with average temperatures ranging from 72-86 degrees in the summer and 64-80 degrees in the winter (NPS 2008:7)." HDF Vol. 2, DEIS, pg 14 (pdf pg 324)

How can anyone help but conclude that HDF and its contractors will say whatever it takes to make HDF look like they have actually done an EIS and are proposing a project that is safe and worthy of approval? Nothing could be further from the truth.

(4) Impact on drinking water: Clearly, with the Kuaia'i County wells in proximity to HDF's proposed massive waste producing operation, one would expect a thorough evaluation of potential impact to ground water and to the aquifers that receive the ground water which ultimately provides the recharge for our drinking water wells. Rather than conduct any tests of the water currently recharging the wells and/or working with Kuaia'i Department to learn the real risks to our wells, HDF simply states: "There will be no significant effect on the groundwater supply in the short-term." HDF Vol. 1, DEIS, pg 4-59 (pdf pg 151) This statement is made without any reference or scientific corroboration. When discussing long term impact they reach the same conclusion without any support for that statement. Yet, 6 pages prior they admit that rainfall "provides recharge to the groundwater". So if 90% of all waste produced is to be left on the pastures where it falls, what type of filter do they plan to install to prevent "rainfall" containing manure and urine from "recharging the groundwater". In fact, by their own statement as follows, HDF knows their operation can't help but contaminate our wells: "Percolation of rainfall directly on the ground and surface runoff from upland provides recharge to the groundwater in the alluvium..." HDF Vol. 1, DEIS, pg 4-53 (pdf pg 145) While the DEIS defines the State and County SWAP Report (State Water Assessment Project), there is no way to determine if those documents were obtained or studied. Rather than obtain the correct documents from the Safe Drinking Water Branch of DOH or the County Water Department, HDF refers to a 2008 CWRM study, a branch of DLNR responsible for managing the State's water resources, not water quality. Had HDF obtained the water quality documents (preservation of water quality is the primary focus of the SWAP Report), they would have determined that all of the Koloa drinking water wells are registered as wells that are "irreplaceable", at "High" risk from potentially contaminating activities (PCA - SWAP Report identifies dairy operations as one of the worst PCAs). In addition, all the upper aquifers that recharge the Koloa wells are identified as "Unconfined". Specifically, rain water contributes to groundwater, had HDF had

to admit, which than recharges the unconfined aquifers that supply our well with the water we drink. See description of Koloa wells attached. Also see the HDF's well completion report part 1, attached here to. Those documents are further evidence of a conflict between what HDF says in their DEIS and what HDF does. HDF says: "The nutrient contributions from the dairy pastures would not occur as chronic daily releases, rather, the runoff contributions would be limited to periods of major rainfall and storm water events." HDF, DEIS Vol 1, pg 4-60 (pdf 152) While HDF at least admits there will be likely contamination with "periods of major rainfall and storm water events", the test wells they installed are actually "Four water monitoring wells installed by HDF into the shallow water aquifer within the alluvium will allow long-term water quality monitoring. Monitoring and analysis of nutrient and chemical constituent levels over time will identify any change in composition of shallow groundwater in the alluvium. Results from the monitoring program will be shared with DOH, dairy neighbors and the local Kuaia'i community." (Emphasis added) HDF, DEIS Vol 1, pg 4-60 (pdf 152) Despite that statement, when the attached well drilling logs are reviewed, it is evident that the shaft was drilled 90 feet deep and there will be no way to determine if the water tested is from the shallow ground water or deeper in what HDF admits is a shallow water aquifer. Once the nitrates enter the aquifer our wells are contaminated. USGS has already determined that the nutrients in the Waioipili are twice the State safe limit (see Water Quality Waioipili Nutrient Chart) and the herd has yet to arrive.

6. HDF states the EIS was conducted and shared with the public to allay any concerns about their proposed dairy operation. How effectively do they feel they are sharing information with the public when nearly 1,600 pages of the DEIS are printed sideways and in 7pt font or smaller? Rather than make a genuine effort to share information, the DEIS masterfully obfuscates their report. Volumes 1 and 2 are each not consecutively paginated. Rather, each section starts with a renumbering forcing the public to refer to the printed page number as well as the pdf page number to locate the referenced text. Volumes 3 and 4 are not paginated at all and virtually unreadable in the extremely small font and the sideways orientation. Not exactly a public friendly sharing of information.

7. Volumes of waste: Whether one considers the 143lbs of wet manure reported in the DEIS on at least 2 pages or the 90lbs of wet manure per cow per day, as stated in the WMP Update, there is no question that the planned land application of all waste will result in millions of pounds of manure deposited on the site at Maha'ulepu each and every month. HDF admits their project is up-slope and that all draining material will enter the ocean at Maha'ulepu:

"At the time we visited, the branch off Kamaulele had seeps in the bed starting a short distance up from the convergence. Below the convergence, slow moving water is present in a man-made channel running through the project site. The ditch extends southward off the property, passing under lower Maha'ulepu Road. A second ditch parallels to the west the one described above. This second ditch originates in the vicinity of a pond in an area of water wells in the upper west side of the valley. We did not establish a source of the water in this ditch, but the ditch contains water and extends south, passing beside an agricultural operation that includes kalo lo'i (taro fields), from which it receives additional flow. This ditch then joins a larger ditch known as Mill Ditch (USGS, 1996) carrying water flowing from west to east across the valley within the project area. Mill Ditch turns southward near the center of the valley, passes under Maha'ulepu Road, and some 460 meters south, joins the first ditch coming down the valley. The two become Waioipili Ditch, with an outlet at Maha'ulepu Beach." DEIS Volume 2, Biological Surveys, page 18-19.

"Spread across the pastures on the valley floor are numerous straight agricultural ditches that serve the purpose of draining runoff from various pasture areas. These were nearly all dry during our survey, and the network was not fully explored, nor was it determined how these presently all interconnect. Presumably these drain eventually into one of the three water-filled features on the property as described above." DEIS Volume 2, Biological Surveys, page 19.

section 7. As the attached Comment confirms, Grove Farm and Hawaii Dairy Farms are engaged in the sale and purchase of up to 3 million gallons a day from the Waia Reservoir, water that accumulates from the 1957 Huleia sugar plantation stream diversion. The diversion was never taken down, despite closure of the plantation in 1996, and the natural flow of the Huleia was never restored. This dereliction of responsible stewardship by Grove Farm conveniently resulted in creation of the largest freshwater reservoir in the State. The waters in the Waia are water of the State. The supporting court authority is set forth in the attached EISPN Comment. Even a cursory read of the Response from Group70, confirms that there was no effort to address the questions and concerns raised in our EISPN Comment. Rather, HDF's response in their DEIS constitutes a cookie cutter paste and mock-up using canned paragraphs offered in their response to many other Comments. Unfortunately, however, HDF's response to our Comment failed to address our Public Trust Doctrine concerns.

As the Hawai'i State Supreme Court has held, the "applicant must respond in writing and address all concerns and questions before proceeding with the development of the EIS. Once this phase of the process is complete, the applicant then begins preparation of the EIS." Sierra Club v. Office of Planning, 109 Haw. 411, 415; 126 P. 3d 1098 - Haw: Supreme Court 2006 See also, HAR §§ 11-200-15(D), -22(C) and -23.

In conclusion, HDF's Draft EIS is not supported by adequate scientific study, claims made of minimal risk are not borne out by the literature or the experiences elsewhere in our country or New Zealand. The DEIS must be returned to the Applicant for non compliance with the laws of the State of Hawai'i. Furthermore, the risk posed by HDF's proposed industrial dairy to the environment, the public's health and our very way of life on the South Shore of Kaua'i are far too great when weighed against the very minimal benefit if any from the proposed project. The DEIS fails to conform in any measure to the unanimous County Council Resolution to Support the Future Preservation of Maha'ulepua, a treasure rich in archaeology, history and culture.

Robert and Bridget Hammerquist
bridgethammerquist@hawaiiintel.net

Also stated in the DEIS: "Surface waters draining the project site meet Waiopili Ditch, and will eventually reach the ocean." Volume 2, Surface Water and Marine Assessment, page 2.

Rather than include hurricane Iwa, they relied on NOAA rainfall records beginning in 1984 and concluded in 2013. In so doing they also failed to include a 6 inch rain event in 2015 and a 5 inch rain event Garmatz witnessed in 2014. The DEIS stated that there would be about 10 rain events yearly of at least 0.8 inches per year that would result in runoff. In so stating, however, HDF maintains the events will be of minimal impact. As shown on the table below, when 0.8 inches of rain falls, there will be 10,188,180.8 gallons of waste contaminated water created on the site to be drained by their extensive ditch network, which will recharge the groundwater, aquifers, and wells and the balance will go to the ocean. When one inch of rain falls, nearly 13 million gallons of contaminated water will create a spill as large as that of the Exxon Valdez, which according to NOAA will occur at least 4-5 times every year. For the years when Maha'ulepua has a 5 or 6 inch rain event, as it did in 2014 and 2015, more than 60 million gallons of contaminated water will cascade from the site into the ocean. There is absolutely no support for HDF's contention that their impact to the environment would be insignificant. Tell that to the endangered and protected animal and plant species and the people that enjoy Maha'ulepua Beach.

Amount of water received when an inch of rain occurs				
Area	Area (square miles)	Area (square kilometers)	Amount of water (gallons)	Amount of water (liters)
My roof 40x70 feet	.0001	.000257	1,743 gallons	6,601 liters
1 acre (1 square mile = 640 acres)	.00156	.004	27,154 gallons	102,789 liters
1 square mile	1	2.6	17.38 million gallons	65.78 million liters
Atlanta, Georgia	132.4	342.9	2,293 billion gallons	8.68 billion liters
United States	3,537,438	9,161,922	61,474 billion gallons	232,700 billion liters

8. The DEIS offers absolutely no assurance that what recently happened in Florida will not happen here. "Pollution in the once lovely, sand-bottomed Lake Okeechobee comes primarily from fertilizer spread over industrial-scale sugar cane and vegetable fields and from manure runoff from huge beef and dairy cattle operations." Emphasis added

Florida's Slimed Waters Should Prompt National Wake Up Call

By Alisa Coe | Friday, July 15, 2016
http://earthjustice.org/blog/2016-july/florida-s-slimed-waters-should-prompt-national-wake-up-call?utm_source=crm&utm_content=Algae_burb&curator=newsletter

Why would the State Department of Health risk our drinking water, our ocean and our reefs when so much is already known about the absolute catastrophic consequence of nutrients in either fresh or saltwater. We don't need replicate the Kaloko dam disaster of 2006? Nothing in the DEIS offers any scientific assurance that HDF's plan can in any way safeguard against the contaminated runoff that is certain to occur at least 4-5 every year if not more. Please see the attached Soil Analysis from the NRCS Custom Soil Resource Report. As is clearly evident more than 80% of the soils at the proposed dairy site is clay, and that will cause significant runoff while the porous soils will swell with contaminated nitrates and bacteria racing through the groundwater to the aquifer.

9. Finally, HDF and Group70 International did not respond to the EISPN Comment my husband and I filed February 23, 2015. A copy of that Comment is attached here. The primary concern voiced in the Comment was one involving The Public Trust Doctrine mandated by the Hawai'i State Constitution, Article 11,

Hawai'i Dairy Farms Fact Sheet

History

- Until 1984, Hawai'i produced 100% of its milk through local dairies
- By 2008, costs had skyrocketed for importing feed and other materials, causing nearly all local dairies to close
- The two remaining dairies on the Big Island only produce about 9 percent of the state's milk supply, leaving the rest to be imported
- More than 6 years ago, Grove Farm started working on how to restart Kauai's dairy industry
- New models were considered and it was determined that New Zealand's grass-fed model would be the cleanest, most cost-effective, sustainable method
- Ulupono Initiative was founded in 2009 to make investments toward Hawai'i's self-sufficiency through increasing local food production and renewable energy use, as well as reducing and reusing waste
- In 2012, Grove Farm, Finistere Ventures, Kamehameha Schools, Maui Land & Pineapple and Ulupono Initiative partnered to do grass trials statewide to find the best site for the state's first grass-fed dairy
- Kauai was found to be the optimal location
- Ulupono Initiative made the investment to begin work on the dairy site in Maha'ulepu, leasing the land from Grove Farm

Operations

- 582 acres of active pasture in Maha'ulepu, wrapping around the Haraguchi Taro Farm; located more than 2 miles from populated areas
- Pasture-based rotational grazing model focuses on farming the grass for the good of the cows and milk production
- 70% Kikuyu grass diet, supplemented with 30% feed
- Grass diet results in lower methane output from cattle, minimizing smell
- 2 irrigation pivots and gun/drip irrigation with water sourced from Waita Reservoir, existing well on site was previously used in pasture operations
- Zero discharge system utilizes 2 effluent ponds for wastewater to recycle as nutrient rich material for pasture management; cows rotate through pastures to evenly apply manure and urine as fertilizer
- Computerized monitoring tracks soil and effluent content to meet all regulatory requirements, while also optimizing both farm and environmental management
- Water system is being upgraded to improve overall water flow to the area
- Irrigation system controlled by GPS to best manage application of water and diluted effluent without contaminating ditches, water troughs or Haraguchi Taro Farm
- The farm is designed using setbacks, native plants and fencing to protect all drainage ditches and keep water clean
- Fencing will enhance safety around drainage ditches and the effluent ponds
- There will be virtually no smell from ponds, irrigation or pasture past 20-50 feet; but we are exploring additional mitigation efforts

As of 2/26/2014

- The farm was designed using area historical rainfall data to accommodate extreme flooding/drought; cows will be rotated out of areas with standing water to allow for drainage and pasture rejuvenation
 - At steady-state operations, there will be roughly 1,800 Kiwi Cross cows at the dairy farm; non-milking cows, calves and bulls will be managed in partnership with local ranchers offsite
 - 152 paddocks allow for 6 groups of 300-330 cows to rotate through their own set of 18 pastures over 18 days, allowing even application of manure/urine for proper fertilization and wastewater management
 - The milking parlor will house a 60-stall rotary milking platform
 - Precision agricultural model uses technology to monitor the health of cows, milk quality and pasture productivity for maximum efficiency
- ### Economics
- Local milk production will reach 20 percent, including Hawai'i Dairy Farms' roughly 3.7 million gallons per year at steady-state operations, reducing our dependence on imported milk
 - Statewide distribution of more local milk at current market prices
 - There will be 10-15 full time operational jobs at the farm
 - Construction jobs, including capacity building for local suppliers
 - \$17.5+ million investment in local food production
 - First commercial use of Important Agricultural Lands on Kauai

Development Timeline

- NRCS permit – *completed*
- Animal Feed Operation (AFO) permit – *in progress*
- Comprehensive Nutrient Management Plan (CNMP) – *in progress*
- Building permits – *in progress*
- Irrigation and pasture preparation – *in progress*
- Offtake contract for milk processing/distribution – *in negotiations*
- Timeline – *Pending Permit Approvals:*
 - Groundbreaking – Spring
 - Cow arrival – Late Summer/Early Fall
 - Milk production – Early 2015

Please visit our website at www.HawaiiDairyFarms.com to learn more.

Contact:

Amy Hennessey
Director of Communications
Hawai'i Dairy Farms and Ulupono Initiative
(808) 544-8973
amy@ulupono.com or info@hawaiidairyfarms.com

As of 2/26/2014

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF HAWAII

-----)

FRIENDS OF MAHAULEPU, INC.,) CIVIL NO.

Hawaii non-profit corporation,) 1:15-cv-00205-
Plaintiff,) LMK-KJM

vs.)

HAWAII DAIRY FARMS, LLC, a)

Delaware Limited Liability)

Company; ULUPONO INITIATIVE, LLC;)

a Delaware Limited Liability)

Company; MAHAULEPU FARMS, LLC; a)

Delaware Limited Liability)

Company,)

Defendants.)

-----)

DEPOSITION OF JAMES J. GARMATZ,

VOLUME 1,

Taken on behalf of Plaintiff at Koloa Public Library,
3451 Poipu Road and Sheraton Kauai Resort, 2440 Hoonani
Road, Koloa, Hawaii 96756, commencing at 9:02 a.m. on
June 13, 2016, pursuant to Notice.

REPORTED BY:

TERRI R. HANSON, CSR 482

Registered Professional Reporter

APPEARANCES

For Plaintiff:

CHARLES M. TEBBUTT, ESQ.

SARAH A. MATSUMOTO, ESQ.

Law Offices of

Charles M. Tebbutt, PC

941 Lawrence Street

Eugene, Oregon 97401

For Defendants:

DIRK B. PALOUTZIAN, ESQ.

Baker, Manock & Jensen, PC

Suite 421

5260 North Palm Avenue

Fresno, California 93704-2209

Also Present:

Bridget Hammerquist

EXAMINATION BY	I N D E X	PAGE
Mr. Tebbutt		5
	EXHIBITS FOR IDENTIFICATION	
	Deposition Exhibit No. 1	
	Invoices, HDF 000481 - 000555	59
	Deposition Exhibit No. 2	
	Amended Notice of 30(b)(6) Deposition of Hawaii Dairy Farms, LLC.	71
	Deposition Exhibit No. 3	
	Amended Notice of Deposition of Mr. James Garmatz.	71
	Deposition Exhibit No. 4	
	Figure 7B, Farm Post Construction Conditions.	
	FOM_002495	80
	Deposition Exhibit No. 5	
	Aerial photograph. FOM_000231	104

Index (Continued)	PAGE
Deposition Exhibit No. 6	112
Photograph.	
Deposition Exhibit No. 22	
Declaration of James Garmatz in Support of Defendants' Motion for Summary Judgment.	113

1 WHEREUPON, the following proceedings were duly
2 had:

3 JAMES J. GARMATZ,

4 after having been first duly sworn,
5 was examined and testified as follows:

6 EXAMINATION

7 BY MR. TEBBUTT:

8 Q. Good morning, Mr. Garmatz.

9 A. Good morning.

10 Q. Please state your full name and residence
11 address for the record.

12 A. James John Garmatz, 3755 Omao Road, Koloa,
13 Hawaii.

14 Q. And, sir, what is your present employment?

15 A. I'm a farm manager, Hawaii Dairy Farms.

16 Q. And how long have you been in that position?

17 A. Since October of 2013.

18 Q. And who hired you?

19 A. Mr. Kyle Datta.

20 Q. How did you find out about the job opportunity?

21 A. They had been in a long association with Kyle
22 and some of the earlier investors.

23 Q. You have? You have?

24

25

1 A. I had been in a relationship with Kyle and some
2 of the earlier investors in the project.

3 Q. In what form? In what relationship?

4 A. We looked at purchasing a dairy on the Big
5 Island in 2011, and the sale didn't go through. And
6 when that purchase was originated, I was going to be the
7 farm manager.

8 Q. Okay. Had you meet Mr. Datta -- Dotta or
9 Datta?

10 A. Datta.

11 Q. Had you met Mr. Datta prior to 2011?

12 A. Yes, I met Mr. Datta in 2010.

13 Q. In what situation did you meet him? How did
14 you meet him?

15 A. I came to the Big Island to look at the dairy
16 that they were going to try to purchase and spent some
17 time with him there, and we kept in communication past
18 that.

19 Q. So were you asked to come to the Big Island by
20 Mr. Datta?

21 A. Yes, sir.

22 Q. Where were you when you were asked to come to
23 the Big Island?

24 A. Where was I located?

25 Q. Yes.

1 A. Friona, Texas.

2 Q. Okay. And how did Mr. Datta find out about

3 you?

4 MR. PALOUTZIAN: May call for speculation,

5 lack of foundation. Go ahead.

6 THE WITNESS: From some of the folks that

7 he was partnering with in the new venture, Dr. Bob Fry,

8 Arama Kukutai, who I'd had a long relationship with,

9 goes back to the early 2000s. I've known Bob very long.

10 BY MR. TEBBUTT:

11 Q. Okay. Was that -- were those relationships in

12 New Mexico?

13 A. No, primarily in southeast Missouri.

14 Q. Okay. All right. We'll get back to some of

15 this, but I just want to go over some background before

16 I start getting into substance. Have you ever been

17 deposed before?

18 A. Yes, sir.

19 Q. How many times?

20 A. Twice.

21 Q. In what context?

22 A. Both of them were in issues concerning

23 collections of monies that was owed.

24 Q. In what type of business?

25 A. Cattle feeding operations.

1 Q. Were you the plaintiff or the defendant in

2 those cases?

3 A. We were the plaintiff, both cases.

4 Q. So you were seeking money?

5 A. Yes, sir.

6 Q. Okay. And these cattle feeding -- let me --

7 these cattle feeding operations, were they in New

8 Mexico?

9 A. Texas.

10 Q. Where in Texas?

11 A. One was in Amarillo, Texas. No, I need to

12 retract that statement. I was deposed in El Paso,

13 Texas.

14 Q. Okay.

15 A. And the complaint, I believe, was heard in

16 Parmer County, Texas.

17 Q. Okay. In both cases?

18 A. Yes.

19 Q. Both situations?

20 A. Yes.

21 Q. Okay. I'm just going to go over a little more

22 background here first. The court reporter can only get

23 one of us down at a time, and sometimes it's human

24 nature to try to anticipate questions. But you and I

25 are going to be in communication quite a bit today. So

1 I'm going to ask you to wait till I finish my question
2 before you answer, okay?

3 And this is the next one, is you need to give
4 an audible answer. Whenever I ask you a question --
5 A. Yes, sir.

6 Q. Yeah, there was the anticipation. You also
7 need to give an audible answer. So yes, no, or
8 something other than that if that's required. But nods
9 of the heads and uh-huhs and un-uns don't work very well
10 for the court reporter. So you need to give clear,
11 audible answers. Do you understand that?

12 A. Yes, sir.

13 Q. Thank you. And your deposition today is taken
14 under oath. Do you understand that?

15 A. Yes, sir.

16 Q. And for multiple purposes for a deposition like
17 this. One is to gather facts. The other is if we were
18 to go to trial, and you were to give different answers
19 than you gave today, I could use this to impeach you at
20 trial. Do you understand that?

21 A. Yes, sir.

22 Q. And so are you under any medications or under
23 any influences today that would prohibit you from giving
24 truthful testimony?

25 A. No, sir.

1 Q. Okay. So the depositions that you were in
2 previously, when were they?

3 A. Late 1990s. I can't give you the exact time.

4 Q. Were they both around the same time?

5 A. Yes, sir.

6 Q. Were they separate actions against different
7 defendants?

8 A. Yes, sir.

9 Q. Okay. Was it involving the same facility?

10 A. Yes, sir.

11 Q. What facility was that?

12 A. Boy. Henry Lawson, who was out of -- I can't
13 give you the exact location, but he was located down in
14 central Texas, north of San Angelo.

15 Q. Did you work for Mr. Lawson?

16 A. Yes, sir.

17 Q. Okay. And was that a beef feeding operation?

18 A. That's correct.

19 Q. A couple of other just background things. If
20 you don't understand a question of mine, I'm going to
21 ask that you tell me that. And if you don't tell me
22 that, I'll assume that you understood my question, okay?

23 A. Okay. Let me backtrack just a second here.

24 Q. Sure.

25 A. At Mr. Lawson's we also fed dairy heifers.

1 Q. All right.

2 A. There's a distinct difference between beef

3 heifers and dairy -- beef animals and dairy heifers.

4 Q. All right. So you did both, you fed beef

5 animals and dairy heifers?

6 A. Primarily, yes. Primarily dairy heifers.

7 Q. Primarily dairy, okay. How many head did you

8 have there?

9 A. We had 2,000 head there.

10 Q. Okay. And how many beef animals?

11 A. Six hundred beef animals, 1,400 dairy heifers.

12 Q. Did that facility have an NPDES permit?

13 A. No.

14 Q. NPDES is the acronym that we use. I might say

15 nipdeez or something like that for your information.

16 Have you worked for any dairies in New Mexico?

17 A. Yes, sir.

18 Q. How many?

19 A. One.

20 Q. What was the name of that dairy?

21 A. Buena Vista Dairy.

22 Q. What years did you work there?

23 A. 2003 through 2009.

24 Q. And where is that located?

25 A. Mesquite, New Mexico.

1 Q. And how big a facility was Buena Vista Dairy?

2 A. Buena Vista Dairy was -- consisted of two

3 facilities. Buena Vista 1 milked about 1,500 cows,

4 Buena Vista No. 2 milked about 2,000 cows and raised

5 heifers.

6 Q. How many heifers?

7 A. Four thousand.

8 Q. What was your capacity? What was your job for

9 Buena Vista?

10 A. I was originally hired as the manager of both

11 operations, overseeing the operations. And after a

12 short time on the job, it was decided that I would go

13 ahead and take control of Buena Vista No. 2 and the

14 heifer operation but still oversee some of the work and

15 the things that were being accomplished at Buena Vista

16 No. 1. We had a man in place there that was the manager

17 there also.

18 Q. So does that sum up your job responsibilities

19 during the full time period of 2003 to 2009 at Buena

20 Vista?

21 A. I believe so, yes.

22 Q. Why did you leave Buena Vista?

23 A. Michael Weatherly, who was the owner, decided

24 to participate in the CWT cow program, which forced us

25 to kill all of our milking stock to eliminate numbers

1 out of the cattle market. And so when I left there,
 2 there was no cattle there at all.

3 Q. What does this -- what's the CWT program?
 4 A. Cooperatives Working Together. It was a
 5 program that was based in the early 2000s where the
 6 cooperatives -- the milk cooperatives across the United
 7 States would put money together via the customer's milk
 8 check -- the dairymen's milk check. And that they would
 9 on a quarterly basis they would bid to take some dairies
 10 out of the market. If you wanted to participate, you
 11 gave them a bid. And if the bid was warranted and was
 12 served correctly, they would pay you for that milk.

13 Q. And pay for the animals to be --
 14 A. Yes, you got paid for the animals.
 15 Q. Okay.

16 MR. PALOUTZIAN: Let him get his question
 17 out.

18 BY MR. TEBBUTT:
 19 Q. Was that a cooperative payment or was it a
 20 government payment?
 21 A. Cooperative payment.
 22 Q. Okay. Did Buena Vista Dairy have an NPDES
 23 permit?
 24 A. Buena Vista Dairy had a CAFO permit.
 25 Q. Did it have a federal CAFO permit?

1 A. Correct.
 2 Q. So that was -- was that an NPDES permit?
 3 A. I don't consider the NPDES the same as the
 4 CAFO.
 5 Q. I mean, what's the difference to you?
 6 A. It's honestly --
 7 MR. PALOUTZIAN: This may call for a legal
 8 opinion. Go ahead.
 9 THE WITNESS: The difference is I've never
 10 seen the NPDES alongside of the CAFO, because we've
 11 always referred to it as the CAFO. Now, if the
 12 government says the two are the same or if they're
 13 defining that as an NPDES, that's fine. But I always
 14 referred to it as CAFO. We kept the records for CAFO.
 15 We kept everything that was necessary. We did our
 16 updates every five years and went through that process
 17 and dealt with that. Now, if the NPDES is the same as
 18 the CAFO, that's fine. But I just understood it to be a
 19 CAFO.
 20 BY MR. TEBBUTT:
 21 Q. What agency did you go through the process with
 22 every five years?
 23 A. The EPA, Region 6, based out of Dallas.
 24 Q. Was Buena Vista required to put in monitoring
 25 wells?

1 A. Yes. They were in place already.

2 Q. When you arrived in 2003?

3 A. Yes.

4 Q. How many?

5 A. They purchased the facility out of a bankruptcy

6 in 2001, and those monitoring wells were already in

7 place, basis the CAFO permit that was in place. They

8 were required already.

9 Q. And was that required by the State of New

10 Mexico or EPA, do you know?

11 A. EPA.

12 Q. And were you responsible for making sure those

13 monitoring wells were sampled on a regular basis?

14 A. Yes, sir.

15 Q. How often were they sampled?

16 A. We sampled the wells ourself annually, and EPA

17 would come on different occasions and sample the wells.

18 'Cause they'd come unannounced, and they would sample

19 the wells, and we would let them do it. It was

20 primarily done by the state.

21 Q. Did you sample for nitrate?

22 A. Yes, sir.

23 Q. And what were the highest levels you got?

24 A. Oh, I can't recall.

25 Q. More than 10 parts per million?

1 A. I can't recall.

2 Q. How deep were the wells, do you know?

3 A. I can't recall. It's been some time ago. I

4 can't answer that correctly.

5 Q. Did you work for any other dairies in New

6 Mexico?

7 A. No, sir.

8 Q. Did you work for any other dairies anywhere

9 else?

10 A. Currently?

11 Q. Other than HDF, which, you know, doesn't --

12 isn't an operating dairy, but have you worked for any

13 other operating dairies?

14 A. Yes, sir, I worked for Bos Bouma.

15 Q. Where was that?

16 A. Clint, Texas.

17 Q. And when did you do that?

18 A. From 1998 through 2003.

19 Q. And what was your role there?

20 A. Logistics manager and environmental.

21 Q. Okay. Tell me what the logistics manager did.

22 A. Procured all the feed, procured all the cattle,

23 handled all incidents with permitting and just a general

24 do everything that's possible.

25 Q. Were you the manager, the farm manager?

1 A. No.

2 Q. There was somebody above you as the farm

3 manager?

4 A. Yeah, the owners.

5 Q. And who -- what were their names?

6 A. Tony Bos and Brad Bouma.

7 Q. Bos is that B-o-s?

8 A. B-o-s, yes.

9 Q. And Bouma, can you spell that?

10 A. B-o-u-m-a.

11 Q. How big a facility was that?

12 A. It incorporated three large dairies; Desert

13 View Dairy milked 1,500 cows, Rio Grande Valley Dairy

14 milked 2,100 cows, and then Bos Dairy milked 3,000 cows.

15 Q. And how many -- other than the milking cows,

16 how many additional animals did they have?

17 A. Well, the heifers at Bos Dairy equivalent to

18 about 4,000, and the heifers for Desert View Dairy and

19 Rio Grande Valley Dairy were located at Tornillo -- at

20 the Tornillo feedyard, which Bos Bouma owned, and we

21 probably had 3,000, 3,500 heifers there.

22 Q. Okay. So the three facilities that you just

23 talked about, one was separate from the other two?

24 A. Yes.

25 Q. And the other two were adjacent to one another?

1 A. Uh-huh (moves head up and down).

2 Q. So were they operated as one unit for

3 regulatory purposes?

4 A. No, both separate entities for EPA reasons,

5 yes. They both had their separate CAFOS.

6 Q. They had separate CAFO permits?

7 A. Uh-huh (moves head up and down).

8 Q. Okay. So all three of them had CAFO permits?

9 A. Uh-huh (moves head up and down).

10 Q. Were you charge of applying for those permits?

11 A. Renewing of the permits. Those permits were

12 already in place when I went there. I managed all the

13 ins and the outs of the record taking, the information

14 needed to -- soil sampling, effluent sampling, and

15 basically the management of the effluent ponds.

16 Q. Did any of the three that we're talking about

17 now in Texas, did any of those three facilities that you

18 worked for have discharges to surface waters while you

19 were there?

20 A. Yes.

21 Q. Explain what kind of discharges they had.

22 A. We had a heavy rain one night, and one of the

23 effluent pond's berms broke, and it leaked down into

24 fields, down into the area down below of the dairy onto

25 some houses and backyards of folks.

1 Q. How many gallons?
 2 A. I can't recall that number.
 3 Q. Hundreds of thousands?
 4 A. No.
 5 Q. Tens of thousands?
 6 MR. PALOUTZIAN: Calls for speculation,
 7 lacks foundation. Go ahead.
 8 THE WITNESS: I just don't know.
 9 BY MR. TEBBUTT:
 10 Q. How big was the lagoon that ruptured?
 11 A. I wouldn't have the exact measurements.
 12 Q. No, I understand that. But you would know a
 13 rough approximation of the size of the lagoon, wouldn't
 14 you?
 15 A. Around 60 by a 100.
 16 Q. How many feet deep?
 17 A. Eight feet deep.
 18 Q. So about a million gallons capacity?
 19 A. It didn't all leak out.
 20 Q. No, I know. But what was capacity of the
 21 lagoon? Was it about a million?
 22 A. Yeah. Yes, sir.
 23 Q. Okay. And about how much it -- so was it
 24 overfull when it leaked, when it -- when the berm
 25 breached?

1 A. No, it wasn't overfull. The breach was caused
 2 by rodents digging into the sides of the berm. And when
 3 we had the rain, the rain penetrated those holes that
 4 the rodents had put into it and caused the escape of the
 5 water.
 6 Q. About how much of the water escaped from the
 7 lagoon?
 8 A. Oh, I'd say 20 to 25 percent, because we found
 9 it right away.
 10 Q. Good. At Buena Vista did you have any
 11 discharges of effluent from that facility while you were
 12 there?
 13 A. While I was there?
 14 Q. Yes.
 15 A. No. But prior to, yes.
 16 Q. What kind of discharge happened prior?
 17 A. They had a heavy rain. When I say heavy, it
 18 probably rained three hours in less than -- excuse me --
 19 three inches in less than an hour.
 20 MR. PALOUTZIAN: Let me just insert an
 21 objection. I think it lacks foundation, calls for
 22 speculation. Go ahead. Go ahead.
 23 THE WITNESS: And some of the water from
 24 the pens and the calf area breached the berm that
 25 protected the farm from water leaving the farm and went

1 onto another neighbor's property.

2 BY MR. TEBBUTT:

3 Q. Was that something that you had to account for
4 when you reapplied for the CAFO permit?

5 A. Yes, sir.

6 Q. Is that how you know about it?

7 A. Yes, sir.

8 Q. Have you worked for any other dairies other
9 than the ones you've testified about this morning so
10 far?

11 A. Worked at Tiller-Cohen.

12 Q. At what?

13 A. Tiller-Cohen.

14 Q. Can you spell that, please?

15 A. T-i-l-l-e-r C-o-h-e-n. It was a
16 limited partnership. It was located in Matthews,
17 Missouri, in southeastern Missouri. It was a
18 pasture-based operation, and was there about two and a
19 half years.

20 Q. Was that in the early '90s? The mid '90s?

21 A. That was 2010; that was between 2009, 2010.

22 Q. How big a facility was that? How many animals?

23 A. When I arrived there was about 2,500 milking
24 cows.

25 Q. And how many support animals?

1 A. Support animals were all raised off farm at a
2 lease facility, and we probably had a thousand support
3 animals.

4 Q. Okay. That would be heifers?

5 A. Yes.

6 Q. And dry animals, dry cows?

7 A. Yes.

8 Q. And so you were there from 2010 till when?

9 A. 2012, late 2012.

10 Q. And what did you do after 2012?

11 A. I returned to Friona, Texas, and had a medical
12 issue that I dealt with, and was getting ready to take a
13 dairy operation over there in Friona, and found out
14 about the medical issue and wasn't able to do that at
15 that point because of the medical issue. And I took a
16 part-time position at Hi-Pro Feeds in Friona, Texas, and
17 managed their heads positions and bought corn and
18 purchased ingredients.

19 Q. Okay. What was the facility you were intending
20 to take over in Friona, Texas?

21 A. It was owned by Charlie Hauge, H-a-u-g-e. And
22 Charlie was just starting that dairy operation there.
23 It had been abandoned for -- or not used for two or
24 three years, and he was bringing animals from the
25 northwest. And my physical inabilities didn't allow me

1 to take the position after all.

2 Q. Okay. I don't want to get into your personal

3 medical issues, but I assume you're okay today?

4 A. Uh-huh (moves head up and down).

5 Q. Took care of it?

6 A. Uh-huh (moves head up and down).

7 Q. That's good. Prior to -- or let's say the

8 dairies that we've talked about thus far, are there

9 other dairies you worked for in the '80s or '90s?

10 A. I was employed by Seven Rivers Cattle Company

11 in Carlsbad, New Mexico. I went to Seven Rivers Cattle

12 Company in 1980 and spent a long time there. We had

13 raised dairy heifers for dairy clients. Roswell area is

14 a large dairy operation area.

15 Q. Yes, it is.

16 A. And they would bring their heifers to us to

17 raise their heifers from little ones all the way up to

18 springers.

19 Q. Okay. So that was in the Roswell area?

20 A. That was in Carlsbad area.

21 Q. Okay. How far is that from Roswell?

22 A. It's about 50 miles south of Roswell.

23 Q. Describe your educational background, sir.

24 A. Attended high school.

25 Q. After high school.

1 A. Two years got an associate degree from

2 Northeastern Junior College in Sterling, Colorado.

3 Q. In where?

4 A. Sterling, Colorado.

5 Q. Sterling, okay.

6 A. And then got a degree in animal science and

7 nutrition from panhandle state -- Oklahoma Panhandle

8 State University in Goodwell, Oklahoma.

9 Q. What year did you graduate?

10 A. '76.

11 Q. And what was your major?

12 A. Nutrition, animal nutrition.

13 Q. Did you take any courses in hydrogeology?

14 A. No.

15 Q. Did you take any courses in hydrology?

16 A. No.

17 Q. Any courses in soil management?

18 A. Yes.

19 Q. What type of soil management courses?

20 A. The required soil -- the required soils class.

21 We call it the soils class that all animal science and

22 all agricultural kids had to take. They had a division

23 of the school that was soils management also, and it was

24 their beginning class that they took there.

25 Q. Okay. Is that the only soils class that you

1 took?

2 A. Yeah, we took a biochemistry class that was

3 related to agricultural. They called it ag

4 biochemistry. And we took the normal organic chemistry

5 and nonorganic -- I mean, organic history like chemistry

6 and then the regular chemistry, and then I took all the

7 biology classes also. You know, the microbiology.

8 Q. Okay. So microbes in the soil?

9 A. Yes.

10 Q. And how they interact with --

11 A. That's correct.

12 Q. Yeah. Let me finish my question. So microbes

13 and how they interact with the nutrients in the soil?

14 A. Yes.

15 Q. Is that fair to say?

16 A. Yes, sir.

17 Q. You studied the nitrogen cycle?

18 A. Yes, sir.

19 Q. And you studied the impacts of phosphorus on

20 vegetation?

21 A. Yes, sir.

22 Q. Did you take any regulatory classes?

23 A. No.

24 Q. How did you come to be -- I noted in your

25 testimony that you've been in charge of the regulatory

1 side of a number of facilities. How did you come to be

2 in charge of the regulatory facilities?

3 MR. PALOUTZIAN: The question is vague and

4 ambiguous. Go ahead.

5 THE WITNESS: It's something that I always

6 would -- had somewhat of an interest in, felt

7 responsible enough that I could do it and just took the

8 reins and went on with it.

9 BY MR. TEBBUTT:

10 Q. Okay. Did you have any formal education in the

11 regulatory aspect --

12 A. No, no, just the guidance that the readings

13 gave us.

14 Q. What readings?

15 A. Well, they would publish a -- Texas published a

16 book and New Mexico published a book of rules and

17 regulations that you had to live by, and then the

18 interaction I had with the NRCS folks and the EPA folks

19 and stuff like that. Made it a point to understand what

20 they were doing.

21 Q. Okay.

22 A. I mean, they didn't go away without a question.

23 If I didn't understand something, I asked.

24 Q. Okay. You didn't take any classes or seminars

25 in permitting?

1 A. I took numerous seminars.

2 Q. What kind of seminars?

3 A. Just basically regulations, permitting

4 regulations. And any time that there was a discussion

5 group or any time that there was a get-together

6 concerning regulations, primarily out of New Mexico

7 State University took the biggest portions. And then

8 later on we -- I attended a seminar at Texas A&M

9 concerning the same situations.

10 Q. When did you do that?

11 A. That was in 2000, year 2000 that there was a

12 seminar.

13 Q. Describe the seminar.

14 A. It was a two-day session with the EPA guys and

15 the Texas people. Because EPA contracts the Texas water

16 folks to do their regulatory work for them. They do all

17 the inspections, state inspections. They do the

18 inspections at the dairy by the state people.

19 And we would all get together and sit down and

20 go over the new revisions and some of the issues that

21 were facing the CAFO.

22 The CAFOs at that time were under a lot of

23 scrutiny, and there was lots of answers to be added

24 concerning that as to how they were going to be managed

25 and what they were going to be doing and the changes

1 that they made in those. I wanted to be up to date with

2 that.

3 Q. Do you know why the CAFOs were under scrutiny

4 at that time?

5 MR. PALOUTZIAN: Calls for speculation,

6 lacks foundation. Go ahead.

7 THE WITNESS: There were some points there

8 within the CAFO regulations as far as the storage of

9 effluence in ponds. There was a push for all CAFOs to

10 have a lined lagoons. And they wanted all waters in the

11 confined operations, all waters within the confined

12 operations to be able -- to be able to be contained on

13 the properties. Which essentially made everyone

14 increase their pond capacities, put liners in them.

15 And there was a lot of changes within the

16 record keeping. I can't recall what those are right

17 now. If I looked them up, I probably could.

18 BY MR. TEBBUTT:

19 Q. And so what we're talking about, what you were

20 just testifying about, is that in relation to New Mexico

21 only?

22 A. No, Texas.

23 Q. Texas. Is it Texas only?

24 A. Texas A&M. Yeah, Texas only. But the CAFO is

25 U.S. Government. It's EPA. So it would reflect into

1 New Mexico also.

2 Q. Okay. Between the time you graduated in 1976

3 and 1980 when you started in Carlsbad, did you have

4 another job in the dairy industry?

5 A. Yeah, I was a consulting nutritionist for

6 Farmers Marketing Association.

7 Q. Located where?

8 A. In Denver, Colorado.

9 Q. Okay. Sir, what did you do to prepare for your

10 deposition today?

11 A. I looked at the invoices supplied.

12 Q. Supplied by whom?

13 A. The invoices that you folks had.

14 Q. Okay. That you provided, that your -- you and

15 your counsel provided to us?

16 A. That's correct.

17 Q. Okay.

18 A. Went through all those invoices and just

19 generally briefed myself, spent some time just thinking

20 to myself what each of these invoices represented and

21 how it was done.

22 Q. How much time did you spend doing that?

23 A. Say 10 hours.

24 Q. And when did you do that, those 10 hours?

25 A. I did it about six hours Saturday morning, and

1 I did another four hours yesterday.

2 Q. Did you meet with your counsel as part of your

3 preparation?

4 A. Yes.

5 Q. And how much time did you spend with your

6 counsel?

7 MR. PALOUTZIAN: I'm going to object.

8 That's --

9 MR. TEBBUTT: I'm not asking for

10 attorney-client privileged information. I'm just asking

11 for the amount of time spent.

12 MR. PALOUTZIAN: Well, I'm going to object

13 and instruct him not to answer. I don't know how that's

14 at all relevant to any of the issues in the case, time

15 spent with lawyers preparing.

16 MR. TEBBUTT: It's just background. It's

17 very common to do that. Every case I've ever done in my

18 life we've discussed that. And it's not attorney-client

19 privilege because there is no specific information that

20 we're giving out other than the amount of time spent.

21 MR. PALOUTZIAN: Well, I'm going to assert

22 my objection. Go ahead. You can answer that question.

23 THE WITNESS: About four hours.

24 BY MR. TEBBUTT:

25 Q. Did you do about by telephone or in person?

1 A. In person.

2 Q. Okay. When did you do that?

3 A. Yesterday.

4 Q. Is that the only time you met with your lawyers

5 in preparation for this deposition?

6 A. We had a casual dinner Saturday night.

7 Q. All right. So those two times, are those the

8 only two times that you met with your lawyers in

9 preparation for this deposition?

10 A. Yes, sir.

11 Q. Okay. Did you speak with anyone else with

12 regard to the upcoming deposition?

13 A. Yes.

14 Q. Who?

15 A. Scott Bloemke.

16 Q. When did you speak with Mr. Bloemke?

17 A. Scott and I are -- we were close in our working

18 relationship, and we spent a lot of time when work

19 outside was being done. It would come up in

20 conversation. And there was a question as to whether he

21 was going to be deposed or not deposed. We would talk

22 about that. And I would give him an opinion whether he

23 was going to be deposed or not.

24 Q. What opinion did you give him?

25 A. I -- it changed from day to day, you know,

1 depending on --

2 Q. When did you start talking to Mr. Bloemke about

3 this?

4 A. When I received notice that I'd been deposed.

5 Q. Are you aware that Mr. Bloemke has been

6 subpoenaed to testify?

7 A. Yes, sir.

8 Q. Okay. And when did you become aware of that?

9 A. His boss, Adam Killerman, had spoke to me about

10 some conversations that he had with Sarah, some emails

11 that he had with Sarah concerning some questions that

12 she had concerning the invoices. Adam didn't know how

13 to answer those questions.

14 And I said, Well, you need to decide yourself

15 how you're going to answer those questions, but I can't

16 give you any feeling towards that.

17 And then he said, Oh, yeah, and by the way,

18 Scott's going to get deposed.

19 Q. Okay. How long did you speak with Mr.

20 Killerman?

21 A. Concerning that?

22 Q. Yes.

23 A. Oh. Adam called me three or four times

24 concerning different questions. There was a train of

25 emails and phone conversations that he had with Sarah.

1 Q. Okay. Do you -- were all your communications
 2 with Mr. -- is it Killerman?
 3 A. Killerman, yes.
 4 Q. K-i-l-l-e-r-m-a-n?
 5 A. Yes.
 6 Q. Were all your communications with Mr. Killerman
 7 by telephone?
 8 A. Yes.
 9 Q. Any emails?
 10 A. No.
 11 Q. Okay. And how long did you speak with Mr.
 12 Killerman the first time you spoke with him about the
 13 depositions?
 14 A. Oh, we don't talk very long, two or three
 15 minutes.
 16 Q. Okay. Is that true for each of the four
 17 conversations that you had?
 18 A. Yes, yeah.
 19 Q. Okay. What types of things did you talk about
 20 with regard to Mr. Bloemke?
 21 A. Just No. 1, if he was going to be deposed, and
 22 who was going to represent him and different things like
 23 that. Mr. Killerman was going to be on vacation last
 24 week, and he was concerned that Scott was going to get
 25 taken care of, that he had a good attorney, you know, or

1 attorney ready for him. And they've never been in this
 2 situation before. This is all new to them. You know,
 3 they're just farmers.
 4 Q. Now, did you tell Mr. Killerman that HDF would
 5 provide an attorney for them?
 6 A. No, we never had that discussion because I
 7 think it was assumed that that was going to happen. I
 8 don't know. I don't think Adam ever questioned that.
 9 Q. Okay. So that's what's going to happen? Have
 10 you told Mr. Bloemke that one of the HDF lawyers would
 11 represent him at the deposition?
 12 A. Well, we knew that that wasn't going to be
 13 possible. We made that decision.
 14 MR. PALOUTZIAN: Don't talk about
 15 attorney-client communications, all right?
 16 BY MR. TEBBUTT:
 17 Q. I'm just asking you about your communications
 18 with Mr. Killerman or Mr. Bloemke when there wasn't an
 19 attorney present. Did you discuss with Mr. Bloemke or
 20 Mr. Killerman what lawyer would represent him at the
 21 deposition?
 22 A. Yes.
 23 Q. And who's that lawyer?
 24 A. I can't recall her name.
 25 Q. Okay.

1 A. I'm sorry.

2 Q. Is she a Kauai lawyer, do you know?

3 A. Yes, sir.

4 Q. Okay. Just so you know, Mr. Garmatz, if you

5 want to take a break at any time, feel free to do so. I

6 just ask that if there's a question pending, that we

7 answer the question before we take a break. But feel

8 free to take a break at any time. I'm one of those

9 people who just kind of keeps going and finds a natural

10 break. But if you need to take a break, by all means,

11 please do, okay?

12 A. Okay.

13 Q. Other than the invoices that you reviewed that

14 you testified about, what other documents did you review

15 in preparation for your deposition today?

16 A. The first stage of interrogatories.

17 Q. The HDF's answers to the plaintiff's first set

18 of interrogatories?

19 A. Correct, yes.

20 Q. And did you read through them all?

21 A. Oh, yes.

22 Q. Okay. And did you read through HDF's

23 responses?

24 A. Yes.

25 Q. Was there anything in the first set of

1 interrogatory responses from HDF that you thought was

2 inaccurate?

3 MR. PALOUTZIAN: Objection, the question is

4 overbroad. Go ahead.

5 THE WITNESS: No.

6 BY MR. TEBBUTT:

7 Q. What else did you review?

8 A. I went back and looked at some of the project

9 plans that we have in place.

10 Q. Which project plans?

11 A. Various solutions, project plans for the

12 facility.

13 Q. And are these documents, do you know that

14 whether they've been produced --

15 A. Yes.

16 Q. -- by your counsel to --

17 A. Yes, yes.

18 Q. One moment please. Let me finish my question.

19 By your counsel to Friends of Mahaulepu in this

20 case? Do you know if they've been provided?

21 A. I believe they're going to be provided today.

22 Q. Did you bring any documents with you today?

23 A. No, sir.

24 Q. What other documents did you review in

25 preparation for the deposition?

1 A. That was about it. Nothing else.

2 Q. Did you review any of the NPDES applications?

3 A. No.

4 Q. Were you involved in drafting any permit

5 applications, NPDES permit applications for the HDF

6 proposed facility?

7 A. I didn't do any writing, but I had input.

8 Q. What kind of input?

9 A. General information concerning some of the

10 questions that were required to be answered.

11 Q. Like what kind of questions?

12 A. Head count, number of cows. Just numerous

13 questions, you know.

14 Q. Give me some other examples.

15 A. We talked about the percent grass compared to

16 the percent grain that was going to be fed inside the

17 parlor. We talked about the size of the cattle. We

18 talked about how much water they were going to consume,

19 how much feed that they were going to consume, how much

20 fecal matter they would produce, how much -- I might

21 have said this, but how large they were. We talked

22 about their life cycle. We talked about their locations

23 as to where everything was going to be handled at and

24 how they were going to be cared for, and just basically

25 general operating conditions, you know, things that

1 you'd come up with, that you'd think about as far as...

2 Q. As far as what?

3 A. The operation of the dairy.

4 Q. Okay.

5 A. And the questions per the permit.

6 Q. Okay. When you talk about a life cycle, what

7 kind of life cycle are you talking about?

8 A. Cattle life cycle.

9 Q. Right. What's the life cycle of a dairy cow?

10 A. Well, the heifer is born, kept in a crate for

11 60 days, fed milk, grain, water, released to grass after

12 60 days. At a year old, depending on her size and her

13 weight, if she's large enough, you go ahead and breed

14 her, AI breed her, artificially insemination. And

15 hopefully at 21, 22, 23 months old she has a calf, and

16 she goes into the milking herd. And then after 45 days

17 after she's given birth, 40 days -- 45 days in milk, we

18 begin to cycle her for an exact estrous date when we can

19 go ahead and breed her, and hopefully have them all bred

20 again by the time she's 90 days old. And then --

21 Q. I'm sorry. Bred again after 90 days?

22 A. She's bred after -- she's bred by 90 days, and

23 by 90 days in milk.

24 Q. Okay.

25 A. So she's been in the milking bed for 90 days

1 and she's bred. She's got a calf in her. And she
 2 continues to milk until she gets to about 200, 205, 206
 3 days in milk and she's got a calf in her, and we go
 4 ahead and take her out and dry her out, keep her dry for
 5 60 days where she's ready to have that calf again.
 6 Q. And how long will that cow normally stay in the
 7 herd? Till what age?
 8 A. Three or four lactations. So, you know, figure
 9 14 months per lactation. So she's in there until she's
 10 six years old, seven years old. That's a good healthy
 11 cow.
 12 Q. Okay. So that's the high end -- that's the
 13 high-end expectation?
 14 A. No, that would be the expectation for a
 15 pasture-based operation.
 16 Q. So that's the average then you would expect?
 17 A. Yes, sir.
 18 Q. And you talked about a percent feed versus
 19 percent pasture. What's the percent feed anticipated
 20 for the HDF operation versus percent pasture feed?
 21 A. Thirty percent grain, 70 percent grass.
 22 Q. And what's that projection based on?
 23 A. Based on the amount of energy needed to produce
 24 the kind of milk that we want to produce, the pounds of
 25 milk that we want to produce.

1 Q. How many pounds of milk do you expect to
 2 produce per cow? Let's say --
 3 A. On an average?
 4 Q. Yeah.
 5 A. On an average for a 305-day lactation, we're
 6 hoping for 38 to 40 pounds.
 7 Q. A day?
 8 A. Yeah.
 9 Q. Okay. When you first came on to your
 10 employment, who hired you?
 11 MR. PALOUTZIAN: Asked and answered. Go
 12 ahead.
 13 THE WITNESS: With HDF?
 14 BY MR. TEBBUTT:
 15 Q. Yes.
 16 A. Kyle Datta.
 17 Q. Okay. And were you hired as an employee of HDF
 18 first off?
 19 A. Originally I was hired as a consultant to the
 20 development of Hawaii dairy operations.
 21 Q. Okay. So who did you work for at that time?
 22 A. I worked for Ulupono Industries.
 23 Q. So that was --
 24 A. I was a consultant to Ulupono Industries.
 25 Q. Okay. And is that when you started in October

1 of 2013?

2 A. No, that was prior to that. That -- I started
3 that in February of '13. I maintained my residence on
4 the mainland, did a lot of work on the mainland for them
5 as far as the operations. But then I did not become an
6 employee of Hawaii Dairy Farms until October because
7 that's the first day that Hawaii Dairy Farms enacted for
8 employment.

9 Q. Okay. So from February 2013 to October 2013,
10 what things did you consult on?

11 A. Well, we had to -- we had the heifer herd that
12 was located in southwest Missouri.

13 Q. Who's we?

14 A. Hawaii Dairy Farms.

15 Q. Hawaii Dairy Farms had a facility in Missouri?

16 A. No, they had heifers purchased there and that
17 were located still on the dairy -- still on the facility
18 that they had bought them from.

19 Q. Okay. What else did you do? What other
20 consulting work?

21 A. Worked in the development of the design of the
22 operation, handled all the mainland logistics that
23 needed to be handled, monitored the quality and the
24 feeding of the dairy heifers in Missouri. We had weekly
25 calls and handled all to-do operations that needed to be

1 done by the mainland at that point.

2 Q. How many heifers does -- or in 2013 how many
3 heifers did HDF own?

4 A. Eleven hundred.

5 Q. And where are those heifers today?

6 A. We sold them.

7 Q. When?

8 A. In 2014.

9 Q. Were they all sold the same month in 2014?

10 A. Uh-huh, sold to the same individual.

11 Q. When was that? When in 2014?

12 A. June or July of 2014.

13 Q. And who they sold to?

14 A. I couldn't tell you that. I can't remember
15 that.

16 Q. Does HDF own any heifers presently?

17 A. No.

18 Q. Does it own any mature cows presently?

19 A. No.

20 Q. Does it own any animals presently?

21 A. No.

22 Q. And it hasn't since those animals were sold in
23 2014?

24 A. Correct, yes.

25 Q. When you came on to HDF as an employee in

1 October 2013, what did you -- what were your first
 2 functions?

3 A. Farm manager. We needed to grow grass.
 4 Q. For what?

5 A. We needed to grow grass on the farm and
 6 establish grass so we could have grass when the cattle
 7 were going to start milking.

8 Q. Okay. So what did you do to establish grass on
 9 the facility?

10 A. Started with the nursery. The nursery was a
 11 four-acre patch. We planted that in November of 2013.
 12 Prior to the planting, we disked that ground with a
 13 harrow disk six times. We installed --

14 Q. Over what period time did you harrow the six
 15 times?

16 A. We probably started the first part of November,
 17 November of '13.

18 Q. Right. But over what period of time did you
 19 disk the six times? How many? Over days, weeks?

20 A. Thirty days.
 21 Q. Okay.

22 A. We installed a drip system, drip irrigator
 23 system under the ground of the four acres, and then we
 24 sprayed the seed on via mulch.

25 Q. The drip irrigation system that you installed,

1 how was that installed?

2 A. With a drip irrigation plier. It's a two-row
 3 plier. It's an instrument that puts the tube in the
 4 level ground that you ask for. You pull it with a
 5 tractor. It's called an applicator.

6 Q. Okay. And how deep were the irrigation
 7 system --

8 A. We put them at 12 inches.
 9 Q. Just a minute. How deep was the irrigation
 10 system prepared and installed?

11 A. Twelve inches deep.
 12 Q. Okay. And how did you create the 12-inch deep
 13 rows?

14 A. The machine has got controls on it that
 15 measures that and allows you to plant at any depth that
 16 you wish.

17 Q. Okay. And so essentially those are rows, I
 18 assume?

19 A. Right.
 20 Q. How long were the rows?

21 A. A hundred feet.
 22 Q. Each row was a hundred feet?

23 A. I want to retract that 'cause I don't know that
 24 it is a hundred feet. I'm confused right now, and I
 25 can't tell you that for sure.

1 Q. Okay. I mean, you sounded rather emphatic that
 2 it was a hundred feet. Are the lengths of hose a
 3 hundred feet?
 4 A. No, no. I wouldn't know the exact measurement
 5 without measuring it. I wouldn't want to be wrong.
 6 Q. No, I understand that. And I am asking for --
 7 you know, if you need to approximate something, that's
 8 okay. If you're telling me you don't know exactly,
 9 that's okay. But I do want an approximation or your
 10 approximate.
 11 A. Between a hundred and 200 feet.
 12 Q. Okay. And did you purchase the irrigation --
 13 is it pipe?
 14 A. Drip hose.
 15 Q. Pardon?
 16 A. Drip hose.
 17 Q. Drip hose. Did you purchase the drip hose
 18 yourself?
 19 A. No, Adam Killerman did, AJAR.
 20 Q. Okay. So the invoices should tell us how many
 21 feet of drip hose was purchased?
 22 MR. PALOUTZIAN: May call for speculation,
 23 lack of foundation. Go ahead.
 24 THE WITNESS: I don't think it's on that
 25 invoice. I remember that invoice. I don't think it's

1 on there.
 2 BY MR. TEBBUTT:
 3 Q. Do you have any records that would tell us how
 4 many feet of drip hose you purchased?
 5 A. I could go measure it.
 6 Q. No, that's not my question. I mean, when you
 7 purchase something, usually you get a receipt for, you
 8 know, X number of feet. You're usually charged by
 9 probably the foot, right?
 10 A. No.
 11 Q. Or something like that?
 12 MR. PALOUTZIAN: Objection, argumentative.
 13 Go ahead.
 14 THE WITNESS: The project was to put a drip
 15 irrigation system in at the nursery. And Adam quoted me
 16 a flat figure for doing that.
 17 BY MR. TEBBUTT:
 18 Q. And so you relied on Mr. Killerman --
 19 A. Yeah.
 20 MR. PALOUTZIAN: I don't think he was done
 21 with his answer.
 22 BY MR. TEBBUTT:
 23 Q. Okay. Go ahead.
 24 A. And we checked it against some other folks that
 25 were here on the island that do that kind of stuff, and

1 his price was the best, so we went ahead and did his.
 2 Q. Do you know how many feet of irrigation drip
 3 hose you needed for the project?
 4 A. No.
 5 Q. Would Mr. Killerman know that?
 6 MR. PALOUTZIAN: Calls for speculation. Go
 7 ahead.
 8 THE WITNESS: Yeah, I'm sure he could
 9 figure it.
 10 BY MR. TEBBUTT:
 11 Q. Did Mr. Bioemke actually lay the hose?
 12 A. He was there to -- he was there doing it. Adam
 13 had his whole crew there doing it.
 14 Q. Okay. So there were multiple people?
 15 A. (Moves head up and down.)
 16 Q. Okay. Did you assist with that?
 17 A. No.
 18 Q. Did you oversee it?
 19 A. No. I oversaw. I mean, I saw them doing it,
 20 but I didn't get to participate in it or anything like
 21 that.
 22 Q. But you were present when it was laid?
 23 A. Yeah, just towards the tail end when they were
 24 just finishing on the tail end. I had to go out and
 25 tell them how to use it.

1 Q. Okay. And so that was the initial four-acre
 2 nursery patch?
 3 A. Uh-huh (moves head up and down).
 4 Q. Okay. All right. So after that was done, what
 5 else was done on the site? What did you do next?
 6 A. Well, we went to the far north pivot, and we
 7 established a 16-acre patch within that -- that could be
 8 irrigated under the pivot. And we set three different
 9 ways that we planted grass.
 10 No. 1, we harvested the grass off the nursery,
 11 placed it into a bale, hand carried the bales via
 12 machine to a 5-acre patch within the 16-acre patch, and
 13 we used the stolons that we had harvested, which was as
 14 a source of planting the grass.
 15 Q. When you said the stolons, what do you mean by
 16 the stolons?
 17 A. Stolons is basically the length of the grass
 18 from the top to the bottom.
 19 Q. Okay.
 20 A. Kikuyu has numerous stolons in it that breaks
 21 every growth areas because kikuyu typically goes across
 22 the ground.
 23 Q. Fans out and grows from those?
 24 A. Yeah.
 25 Q. From the stolons?

1 A. Uh-huh (moves head up and down) .
 2 Q. So the stolons becomes a source?
 3 A. The stolons, once it hits soil, it starts to
 4 grow, develops the root base.
 5 Q. Okay. Is stolen spelled the way we think it
 6 is?
 7 A. Yes. S-t-o-l-o-n-s.
 8 Q. Okay. And so that was used to essentially
 9 seed, if you will?
 10 A. Correct.
 11 Q. The next 5 acres within the 16 acres, you said?
 12 A. That's correct. We had seen that method used
 13 different places in South Africa, in Australia, in
 14 Nicaragua, Mexico. They had done it that way.
 15 Q. Had you traveled to any of those areas to see
 16 that?
 17 A. No.
 18 Q. When you prepared the four-acre patch at the
 19 nursery in addition to the harrowing, did you do
 20 anything else to that four-acre patch?
 21 A. Fertilized it.
 22 Q. Okay. Did you do anything before you harrowed
 23 it?
 24 A. No. Yes, sir. Yes, sir. I'll retract that.
 25 We sprayed it.

1 Q. With?
 2 A. Roundup.
 3 Q. Okay.
 4 A. One-percent solution.
 5 Q. All right. And then the 16-acre patch that you
 6 talked about at the north pivot, what did you do to
 7 prepare that length?
 8 A. We mowed it initially.
 9 Q. What was there at the time?
 10 A. A hundred percent guinea grass.
 11 Q. Okay. And what did you do with the mowings?
 12 A. Left the clippings on the ground.
 13 Q. Okay.
 14 A. 'Cause organic matter was in real bad
 15 condition, so we left them. Then we let it grow up a
 16 little bit, oh, 8 or 10 inches tall, and we sprayed it,
 17 one-percent solution. We sprayed it twice.
 18 Q. With Roundup again?
 19 A. Yes, sir.
 20 Q. Okay. And then what?
 21 A. We disked numerous times. Six times.
 22 Q. Six times just like you did with the nursery
 23 patch?
 24 A. Yep, yeah.
 25 Q. And that was over a period of 30 days?

1 A. That's correct.

2 Q. And when did that start?

3 A. We started doing that in February of '14,

4 February or March of '14, yeah.

5 Q. Okay. Then what?

6 A. Then we planted a grass that we call mallato.

7 Q. How do you spell that?

8 A. M-a-l-l-a-t-o.

9 Q. What kind of grass is that?

10 A. It's a broad-leafed grass that is grown

11 primarily in the tropics or in tropical conditions,

12 year-round conditions. It's a quality grass as far as

13 protein, and we wanted to try some of that. And we

14 planted that on 3 acres of the 16.

15 Q. And when did you do that?

16 A. Just about the same time that we were preparing

17 the soil for the -- we prepared the whole 16 acres at

18 one time.

19 Q. And that was in February and March of 2014?

20 A. Right.

21 Q. Okay. And then you brought the stolons --

22 A. Right.

23 Q. -- over for five acres?

24 A. And then I planted the seed, the mallato seed.

25 Q. Okay.

1 A. And we finished the balance of the 16 acres

2 with kikuyu seed, via kikuyu grass. Purchased the seed.

3 Q. All right. Purchased the seed for the kikuyu?

4 A. Uh-huh (moves head up and down).

5 Q. So you purchased more seed for the rest of the

6 16 acres 'cause you didn't have enough stolons from the

7 nursery?

8 A. Yeah.

9 Q. Okay.

10 A. We wanted to try both ways.

11 Q. Okay.

12 A. Whichever way would work best.

13 Q. Did you determine which way worked better?

14 A. Yeah.

15 Q. Which way?

16 A. Seed.

17 Q. So after the first 4-acre patch and then the

18 16 acres, what did you do on the site?

19 A. We --

20 MR. PALOUTZIAN: I'm just going to object,

21 calls for a narrative. Go ahead.

22 THE WITNESS: The 16 acres was all planted,

23 and we watered it on a daily basis with at least 3/10s

24 of an inch of rain on a daily basis. And if we received

25 that much moisture within the last 24 hours, we wouldn't

1 water it that following day. So it was the management
 2 of the pivot system. And at that point we began to till
 3 the grounds on both sides of the 16-acre patch for some
 4 additional grass growing that we were going to --
 5 seeding that we were going to do.
 6 BY MR. TEBBUTT:
 7 Q. With kikuyu?
 8 A. Yes.
 9 Q. Okay.
 10 A. I had to move all the fencing material that was
 11 located on the farm.
 12 Q. What fencing material is that?
 13 A. The posts that were there, because the place
 14 where we were going to plant this additional kikuyu was
 15 right where that stuff was unloaded out of the
 16 containers initially. And I wanted to use that ground
 17 'cause it was under the pivot so we could water it.
 18 So I moved all the fencing material down along
 19 the main road that runs through the dairy. And then
 20 there were some culverts and stuff like that, pipe,
 21 white PVC pipe. We removed all that off of there. We
 22 cleaned that ground up, and we sprayed it twice again,
 23 and we used the disk harrow on it and prepared it to be
 24 planted in kikuyu. And that was finally done, I'd say,
 25 in July of 2014.

1 Q. Okay. And how many acres was in addition to
 2 the original that was planted at that point by
 3 July 2014?
 4 A. Total acreage in the whole thing was 36 acres,
 5 so we planted an additional 20 acres.
 6 MR. PALOUTZIAN: Counsel, when it's
 7 convenient, I'd like to take a 5- or 10-minute break.
 8 MR. TEBBUTT: All right. Let me just ask a
 9 couple follow-ups here, and then we'll take a quick
 10 break.
 11 MR. PALOUTZIAN: Thank you.
 12 BY MR. TEBBUTT:
 13 Q. Other than the planting that you're discussing,
 14 36 acres, what other site activities did you undertake
 15 starting in October 2013?
 16 MR. PALOUTZIAN: The question's overbroad
 17 and calls for a narrative. Go ahead.
 18 THE WITNESS: Well, like I told you, we
 19 fertilized.
 20 BY MR. TEBBUTT:
 21 Q. Okay. The whole place? How much did you --
 22 well, let me --
 23 A. Fertilize the nursery and the 36-acre patch.
 24 Q. Okay.
 25 A. We sprayed for broad leaves one time. That's

1 all. And we watered it to maintain it, and that was --
2 and then we mowed it.

3 Q. Did you install any fences when you first got
4 there?

5 A. No.

6 Q. None?

7 A. None, no. There's not been any fences
8 installed at all.

9 Q. Okay. The staging material -- or the fence
10 material, the PVC material, is now, when we went on our
11 site inspection in March, in one general area. Was that
12 where you moved everything?

13 A. That's correct.

14 Q. Or did you move it multiple times?

15 A. No, just one time. It was right there above
16 that, north of that, in that field there over where it
17 was. And then we moved it down there along the road.

18 MR. TEBBUTT: All right. Let's take a
19 break.

20 (Break from 10:13 to 10:26.)

21 BY MR. TEBBUTT:

22 Q. Mr. Garmatz, we're back on the record. And you
23 understand that every time we go off the record and come
24 back you're still under oath, correct?

25 A. Correct.

1 Q. Okay. You had mentioned that you irrigated the
2 36 acres that we talked about just prior to the break.

3 How did you get the water to the fields?
4 A. Pipeline from Waita Reservoir.

5 Q. Okay. When was the pipeline installed?

6 MR. PALOUTZIAN: Well, I think the question
7 is vague as posed. Go ahead. And it may call for
8 speculation, lack of foundation. Go ahead.

9 THE WITNESS: Late March of 2014.

10 BY MR. TEBBUTT:

11 Q. Okay. And who installed it?

12 A. Effluent Irrigation Company.

13 Q. Effluent?

14 A. Effluent.

15 Q. E-f-f?

16 A. (Moves head up and down.)

17 Q. Okay. And was it all installed in March
18 of 2014?

19 A. To the best of my knowledge.

20 Q. Do you know how many feet of irrigation pipe
21 was installed in March of 2014?

22 A. Exact number, no.

23 Q. Approximate?

24 A. A thousand to 1,500 feet.

25 Q. And was that one line or multiple lines?

1 A. One line.

2 Q. And did you oversee the installation of that

3 pipe?

4 A. Yes.

5 Q. And how was that installed?

6 A. Excavator, dug the line, pipe was placed in the

7 hole, glued together and back filled.

8 Q. How deep was the pipe laid?

9 A. Varied, but the deepest point would probably

10 have been four feet.

11 Q. Was any of the excavated material moved off

12 site?

13 A. No.

14 Q. Was it just laid back over the --

15 A. Backfilled.

16 Q. Backfilled. And what was done with the

17 backfilled area? Anything? Was it just allowed to

18 vegetate again normally?

19 A. Correct.

20 Q. How did you get water to the nursery area that

21 was planted in November of 2013?

22 A. Existing waterline.

23 Q. Do you know when that waterline had been

24 installed?

25 A. No.

1 Q. Did you inspect that waterline before you used

2 it?

3 A. No.

4 Q. Did you have to do any maintenance to that

5 waterline before you used it?

6 A. Hook up a riser.

7 Q. And is that the riser that's at the nursery?

8 A. Correct.

9 Q. What did that entail?

10 A. Kind of putting a T in the line.

11 Q. Did you have to dig into the ground to get

12 there?

13 A. Yes, yes.

14 Q. How deep?

15 A. Twelve inches.

16 Q. Over what square foot or yard area?

17 A. Two by -- two-foot by two-foot.

18 Q. Were any roads installed or work done starting

19 in October 2013 to, let's say, the March 2014 timeline?

20 A. Roads, no.

21 Q. Has there been any time when any roads have

22 been installed or improved on the site since you've been

23 there?

24 A. No.

25 Q. You said earlier that no fencing had been

1 installed, is that correct?

2 A. Yes.

3 (Garmatz Deposition Exhibit No. 1 was

4 marked for identification.)

5 BY MR. TEBBUTT:

6 Q. Mr. Garmatz, you have in front of you what's

7 been marked as Deposition Exhibit 1. This is a series

8 of invoices with HDF Bates Nos. 000481 through HDF

9 000555.

10 I'm going to ask you questions throughout the

11 day about various parts of these. But are these

12 invoices that you recognize -- well, let me strike that.

13 Are these the invoices that you reviewed in

14 preparation for your deposition today?

15 A. Yes.

16 Q. Do you know if this is a complete set of the

17 invoices that you reviewed for your deposition today?

18 MR. PALOUTZIAN: The question is overbroad.

19 Go ahead.

20 THE WITNESS: Say that again.

21 BY MR. TEBBUTT:

22 Q. Yes, is this a complete set of the invoices

23 that you reviewed for your deposition today?

24 A. No.

25 Q. What additional invoices did you review?

1 A. All those that you supplied.

2 Q. That who supplied?

3 A. That you supplied to our attorney and my

4 attorney sent to me.

5 Q. So you're saying that Friends of Mahaulepu

6 supplied the invoices from HDF?

7 A. Yes.

8 Q. That's an interesting way to proceed.

9 Are you sure your attorneys didn't just provide

10 you with a package of what they provided Friends of

11 Mahaulepu.

12 A. Where they got them, I don't know. I just got

13 the copies.

14 Q. All right. Let's take a look at -- and I'm

15 going to refer to the Bates number, just the last three

16 digits of the Bates numbers, okay?

17 A. Yes, sir.

18 Q. Down in the lower -- they're generally in the

19 lower right portion of the page. If you turn to 484,

20 please, which I believe is about the fourth page in.

21 And these are front and back. So the fourth page in to

22 Exhibit 1. Do you see that?

23 A. Uh-huh (moves head up and down).

24 Q. It says 10 -- 12/10/13, install hogwire fence

25 in grass area dairy site.

1 A. Yes. That's a fence to prevent the pigs from
 2 eating the grass up.

3 MR. PALOUTZIAN: Let him ask the question.
 4 BY MR. TEBBUTT:

5 Q. Where was that installed?
 6 A. Huh?

7 Q. Where was that installed?
 8 A. Around the perimeter of the nursery.

9 Q. Okay. 'Cause I asked you just a few minutes
 10 ago whether any fence had been installed and you said
 11 no. Is that -- that's not a correct statement, is it?
 12 The earlier statement.

13 A. You need to define for me fence.

14 Q. Well, this says, Install hogwire fence, doesn't
 15 it? Do you consider that a fence?

16 A. I assumed when you asked the question that
 17 you're talking about permanent fencing.

18 Q. Okay. What type of hogwire fence was installed
 19 on December 10, '13?

20 A. Placed steel posts in the ground, hung the wire
 21 to it.

22 Q. What kind of posts?
 23 A. Steel posts.

24 Q. What's a steel post?
 25 A. T posts.

1 Q. What do they look like?
 2 A. Long and slender.

3 Q. Wood?
 4 A. Metal.

5 Q. How long?
 6 A. They're six-foot long.

7 Q. And how are they installed?
 8 A. Pound them in.

9 Q. With what?
 10 A. Post pounder.

11 Q. By hand?
 12 A. Yes.

13 Q. Did you have a post pounder on any mechanical
 14 implement or did you install them all by hand, pound
 15 them by hand?

16 A. I can't tell you that.

17 MR. PALOUTZIAN: It assumes facts not in
 18 evidence. Go ahead.

19 THE WITNESS: I can't tell you that.
 20 BY MR. TEBBUTT:

21 Q. Were you present when the fences were
 22 installed?
 23 A. No, no.

24 Q. Who installed them?
 25 A. AJAR.

1 Q. Is that Scott Bloemke?
 2 A. I don't know that 'cause I wasn't there.
 3 Q. So you're saying that the fence that was
 4 installed on December 10th, '13, was only around the
 5 nursery area, is that correct?
 6 A. Correct.
 7 Q. You can put that aside for right now. We'll
 8 get back to it.
 9 What other irrigation pipe was installed after
 10 that first line from the Waita Reservoir?
 11 A. A portion of the waterline to the lower pivot.
 12 Q. When was that installed?
 13 A. In April of '14.
 14 Q. And how many feet of irrigation pipe was
 15 installed then?
 16 A. About 1,100 feet.
 17 Q. When were the pivots brought in?
 18 A. They were delivered in January of '14.
 19 Q. Both pivots?
 20 A. Yes.
 21 Q. Just the two pivots?
 22 A. Yes.
 23 Q. And today there's still just the two pivots?
 24 A. Yes.
 25 Q. Who installed the pivots?

1 A. Effluent Irrigation.
 2 Q. And did you oversee that installation?
 3 A. Yes.
 4 Q. And was it done to your satisfaction?
 5 A. Yes, sir.
 6 Q. What other preparation -- well, let's start
 7 with the nursery area. You said the nursery area was
 8 sprayed with Roundup before it was harrowed, correct?
 9 A. Yes.
 10 Q. Okay. Was it sprayed with Roundup just one
 11 time?
 12 A. Twice.
 13 Q. Twice. And was it -- the second spraying after
 14 harrowing had begun?
 15 A. Yes.
 16 Q. So sometime in the middle of the harrowing
 17 process?
 18 A. Yes.
 19 Q. Were there any trees cleared in that nursery
 20 area?
 21 A. No.
 22 Q. Trees or shrubs. None?
 23 A. None.
 24 Q. What was there previously? Just --
 25 A. Guinea grass.

1 Q. Okay. What trees or shrubs clearing took place
 2 on the site from the time you started there in
 3 October 2013 until June 2014?
 4 A. Just any tree that was taller than what our
 5 pivot could go under or go over.
 6 Q. So what height would that be?
 7 A. Eight to 10 feet.
 8 Q. So anything over 8 to 10 feet was cleared, was
 9 that on the whole over 500 acres?
 10 A. Yes.
 11 Q. And how many of those trees or shrubs were
 12 there, would you say?
 13 A. Numerous.
 14 Q. How many?
 15 A. Fifty.
 16 Q. What kind of trees were they?
 17 A. Primarily -- you know, I can't identify that
 18 'cause I just don't know.
 19 Q. Okay. What were the tallest trees that were
 20 cleared?
 21 A. The albizia trees.
 22 Q. And how tall were they?
 23 A. Some of them as high as 20 feet.
 24 Q. How many of them would you say were 20 feet?
 25 A. Six or seven of them.

1 Q. Were any over 20 feet?
 2 A. Yes.
 3 Q. What were the tallest ones?
 4 A. Thirty footers, 30 to 35 feet.
 5 Q. And how many were in the 30- to 35-foot range?
 6 A. Just two.
 7 Q. And you think about a total of 50 trees of
 8 approximately 20 feet?
 9 MR. PALOUTZIAN: Objection, misstates
 10 testimony.
 11 BY MR. TEBBUTT:
 12 Q. Is that a fair statement?
 13 A. Say that again.
 14 Q. About 50 trees that were approximately 20 feet
 15 tall?
 16 A. No. Most of -- the balance of the 50 would
 17 have been 10 foot at the max, but they were tall enough
 18 we couldn't get the pivot across.
 19 Q. Okay. About how many would you say were
 20 15 feet or more?
 21 A. Ten to 15.
 22 Q. And what did you do with those trees?
 23 A. We ground them to the stump.
 24 Q. Okay. And just left the material on site?
 25 A. Uh-huh. Let me say that again. We ground them

1 to the stump, which means (indicating).

2 Q. Right. Had the stumps been removed since?

3 A. No.

4 Q. They're still -- are they still there?

5 A. Yes.

6 Q. So the nursery started out with four acres,

7 correct, in 2014?

8 A. Yes, sir.

9 Q. Has that been expanded?

10 A. No.

11 Q. So it's still four acres?

12 A. No.

13 Q. How many acres is it now?

14 A. Three and a half.

15 Q. And what do you do with the cuttings from the

16 nursery? Well, let me back up.

17 How often is the nursery area cut, mowed,

18 whatever? What do you call it cut or mowed?

19 A. Mowed. Ten to 18 days.

20 Q. And what do you do with the cuttings?

21 A. Where?

22 Q. From the nursery.

23 A. They're left.

24 Q. Just right on the nursery property itself?

25 A. Yep. Except for the one time we baled them and

1 hauled them to plant in the 16 acres.

2 Q. How often do you mow the 16 acres?

3 A. Same. Ten to 18 days.

4 Q. And what do you do with the cuttings?

5 A. Most of the time they're left. Sometimes we

6 bale some.

7 Q. And when you bale them, what do you do with

8 them, with the bales?

9 A. Give them to the ranchers.

10 Q. How many bales do you give to the ranchers?

11 A. Oh, I wouldn't have the exact count. Two

12 hundred, 250.

13 Q. Total? That's the total number of bales you've

14 given to the ranchers since you started in 2013?

15 A. Yes, sir.

16 Q. And you don't charge the ranchers?

17 A. No.

18 Q. Okay. The term grubbing and grading has been

19 used. Are you familiar with that term?

20 A. Yes, sir.

21 Q. And you've got a grubbing and grading permit

22 from the County of Kauai, correct?

23 A. Correct.

24 Q. Describe for me what you mean by grubbing and

25 grading.

1 A. Two separate terms.

2 Q. Okay. Let's go with grubbing first.

3 A. Grinding of a forage product or a tree product

4 or a bush product to the ground.

5 Q. Okay. And you testified about that just a

6 little while ago. Other than the approximately 50 trees

7 that were grounds down to the stump, was there other

8 grubbing practice that went on on the site?

9 A. Yes.

10 Q. And describe that for me, please.

11 A. We had a large accumulation of guinea grass and

12 koa trees or koa bushes, I should say. I don't think

13 they're a tree. I think they're a bush. And we had to

14 grub those to get rid of them.

15 Q. Okay. And what did you could to grub them?

16 A. Used the grinder on the front of the excavator,

17 hydraulic-driven grinder.

18 Q. Okay. So the koa trees you would classify as

19 bushes?

20 A. Yes.

21 Q. And how tall were they?

22 A. Oh, some as high as 10-foot tall, and the

23 others, you know, four or five foot tall.

24 Q. How many of the koa bushes or trees would you

25 say --

1 A. About thousands.

2 Q. And was that material just left on site?

3 A. Yes.

4 Q. What other types of brush or small trees were

5 grubbed, other than the ones you've just testified

6 about?

7 A. I'm sure that there was other trees there, but

8 I can't -- I couldn't name them for you.

9 Q. And was this all over the 500 and some acres?

10 A. Yes.

11 Q. What kind of grading was done on the property?

12 A. None.

13 Q. What type of work was done at the construction

14 entrance?

15 A. Define construction entrance.

16 Q. Well, where the trailer is where I met you

17 during the Rule 34 inspections, is that considered the

18 entrance to the dairy site?

19 A. Yeah, I would consider that.

20 Q. Okay. What was done to prepare that area?

21 A. Nothing.

22 Q. Were there any fences installed?

23 A. No.

24 Q. No posts installed there?

25 A. Just the posts -- steel posts they put in the

1 ground to keep the trailer from blowing away.

2 Q. And what about the gate? Was the gate already

3 there?

4 A. Gate's always there.

5 Q. What utility lines were installed on the

6 property since you started there?

7 A. None.

8 (Garmatz Deposition Exhibit Nos. 2 and 3

9 were marked for identification.)

10 BY MR. TEBBUTT:

11 Q. Mr. Garmatz, I'd like you to take a look at

12 Exhibit 2, please?

13 A. That's it right there -- here. Yes, right

14 there.

15 Q. And I'm going to ask if you've seen this

16 document before.

17 A. Yes, sir.

18 Q. And when did you first see it?

19 A. I think Dirk sent it to me.

20 Q. Do you know when that was?

21 A. About two weeks ago. I don't know which date.

22 Q. I'm sorry. About two weeks ago, did you say?

23 A. Yeah.

24 Q. Okay. And do you see Exhibit A to Exhibit 2?

25 A. Exhibit 2 for activities?

1 Q. The Exhibit A.

2 MR. PALOUTZIAN: It's on page 3.

3 BY MR. TEBBUTT:

4 Q. Right here, Exhibit A. Just flip it over.

5 There you go. Do you see that list of --

6 A. Uh-huh.

7 Q. Okay. And you're designated here as the --

8 well, I use the word corporate for purposes of HDF

9 today, okay?

10 A. Uh-huh (moves head up and down).

11 Q. The corporate representative with respect to

12 all areas in No. 1 and No. 2, correct?

13 A. Correct.

14 Q. We've discussed the grubbing and grading that's

15 depicted in 1A. Do you see that?

16 A. Uh-huh (moves head up and down).

17 Q. Is that the full extent -- what you testified

18 about already, is that the full extent to the grading

19 and grubbing of vegetation throughout the site or is

20 there other?

21 MR. PALOUTZIAN: The question is overbroad,

22 go ahead.

23 THE WITNESS: What do you mean here by

24 native vegetation?

25 /

1 BY MR. TEBBUTT:
 2 Q. Well, the vegetation that existed on the site
 3 at the time you came on.
 4 A. Yes.
 5 Q. Okay. So were there any other grubbing or
 6 grading activities that occurred that you haven't
 7 testified about yet?
 8 MR. PALOUTZIAN: I'm going to object to the
 9 form of the question because it misstates the prior
 10 testimony with respect to grading, but go ahead.
 11 BY MR. TEBBUTT:
 12 Q. All right. Let's stick with grubbing, is there
 13 any other grubbing activity other than what you've
 14 described that occurred on the site?
 15 A. Yes.
 16 Q. What?
 17 A. We grubbed the fence line.
 18 Q. And when did you do that?
 19 A. In August of '15, August or September of '15.
 20 Q. Okay. And when you said you grubbed the fence
 21 line, what fence line are you referring to?
 22 A. The perimeter fence line.
 23 Q. So around the outside perimeter of the
 24 property?
 25 A. Correct.

1 Q. And that's separate from what we talked about
 2 just a minute ago, correct?
 3 A. Uh-huh (moves head up and down).
 4 Q. Okay. So along the perimeter -- you said yes?
 5 A. Yes.
 6 Q. Okay. So along the fence line, did you
 7 determine how many feet around that was, around the
 8 perimeter?
 9 A. Estimated length, about 2,200 feet.
 10 Q. Around the perimeter of the entire property?
 11 A. Yes, that we grubbed.
 12 Q. That you grubbed, okay. And in that area that
 13 was grubbed, how many trees were over -- were 15 feet or
 14 more?
 15 A. None.
 16 Q. Any vegetation that was 15 feet or more?
 17 A. No.
 18 Q. What was the highest vegetation that you
 19 grubbed?
 20 A. Ten feet.
 21 Q. Okay. What kind of vegetation was that?
 22 A. Mostly just dead trees and dead stock materials
 23 that had just accumulated.
 24 Q. Were there any koa trees that you had grubbed?
 25 A. Some.

1 Q. Along the fence line?

2 A. Some.

3 Q. Okay. And what did you do with that material?

4 A. Left it. It was ground.

5 Q. So other than what you've just discussed, we've

6 discussed three general areas of grubbing, the one with

7 the trees that we talked about, the taller trees, then

8 the whole property, which you grubbed -- how -- of the

9 580 acres or so on the site, there's about 580 acres on

10 site, correct?

11 A. Uh-huh (moves head up and down).

12 Q. How many of those acres did you grub?

13 A. The whole 580 acres was grubbed because if we

14 could cover the ground with a mower, we mowed it down.

15 I would consider that a portion of the grubbing. So

16 regardless of how it was grubbed, all the acres were

17 grubbed.

18 Q. Okay. SO describe for me the different

19 grubbing practices that you did.

20 A. Well, 15-foot mower propelled by a John Deere

21 tractor or a small excavator with a hydraulically-driven

22 grinder on the front. And then we also utilized a large

23 disk that was pulled by a D8 Cat.

24 Q. Okay. Did you harrow -- how much of the

25 property did you harrow?

1 A. Approximately 480 acres.

2 Q. The whole thing?

3 A. (Moves head up and down.)

4 Q. And did you replant it in some type of grass?

5 MR. PALOUTZIAN: I'm going to object to the

6 question. Misstates the testimony. Go ahead. I think

7 you said 480 acres.

8 BY MR. TEBBUTT:

9 Q. And that's what you said, right, 480 acres?

10 A. Oh, I'm sorry. You said whole thing.

11 Q. Okay. And of the 480 acres, how much did you

12 harrow?

13 A. All of it.

14 Q. Okay. And what did you do after you harrowed

15 it?

16 A. We left it.

17 Q. How many times did you harrow it?

18 A. Some places two times. Most places three

19 times.

20 Q. Okay. Did you apply pesticides?

21 A. No.

22 Q. To any of that 480 acres?

23 A. Define pesticides.

24 Q. Roundup.

25 A. Well, Roundup's a herbicide.

1 Q. Well, herbicide is a category of pesticides,
 2 isn't it?
 3 A. Some portions of it we did and some we didn't.
 4 Q. Okay. So about -- of the 480 acres, had many
 5 acres did you apply Roundup on?
 6 A. Seventy-five at the most.
 7 Q. Okay. And why did you apply Roundup to
 8 75 acres?
 9 A. Because we knew we were going to plant grass on
 10 it.
 11 Q. What did you plant on it?
 12 A. Kikuyu grass.
 13 Q. On all 75 acres?
 14 A. Uh-huh.
 15 Q. So since the time that you planted the 36 acres
 16 that we discussed earlier, you planted another 39 acres?
 17 A. Yes.
 18 Q. When did you do this?
 19 A. In July of '15, July and August of '15.
 20 Q. Okay. So in July and August of '15 you
 21 harrowed that 39 acres?
 22 A. Yes.
 23 Q. How many times?
 24 A. Five times.
 25 Q. And applied Roundup how many times?

1 A. Twice.
 2 Q. Okay. So when you harrow it, you brought the
 3 soil so it's basically just a big soil field, correct?
 4 A. Yes.
 5 Q. Did you place any -- do you know what a best
 6 management practice is?
 7 A. Uh-huh (moves head up and down).
 8 Q. In the context of the work you're doing on the
 9 HDF property, what's constitutes a best management
 10 practice?
 11 MR. PALOUTZIAN: I'm going to object that
 12 it calls for an expert opinion, lacks foundation, calls
 13 for speculation.
 14 BY MR. TEBBUTT:
 15 Q. Go ahead.
 16 A. BMPs, best management practices are procedures
 17 outlined in writing as to how work should be done.
 18 Q. Okay. Did you have any BMPs in place related
 19 to the harrowing that you did on any of the acreage on
 20 the facility?
 21 A. No.
 22 MR. PALOUTZIAN: Same objections.
 23 BY MR. TEBBUTT:
 24 Q. And the answer is no?
 25 A. No.

1 Q. The area that you harrowed, how close was that
2 to any of -- any edges of the fields? How close was
3 that to any irrigation ditches?

4 MR. PALOUTZIAN: The question is over
5 broad, lacks foundation, calls for speculation. Go
6 ahead.

7 THE WITNESS: Restate that question again.

8 BY MR. TEBBUTT:

9 Q. Yes, the field that you harrowed to plant
10 kikuyu grass in July and August of 2015, what was the
11 closest irrigation ditch to any of those fields?

12 MR. PALOUTZIAN: Same objections. Go

13 ahead.

14 THE WITNESS: They were around two of the
15 ditches. An eight-acre patch was around two ditches and
16 then the --

17 BY MR. TEBBUTT:

18 Q. The what? I'm sorry.

19 A. An eight-acre patch was near the ditches.

20 Q. Okay.

21 A. And then the balance of it was located near one
22 of the ditches.

23 MR. TEBBUTT: Go off the record for just a
24 second.

25 (Off the record from 11:05 to 11:06.)

(Garmatz Deposition Exhibit No. 4 was
marked for identification.)

3 BY MR. TEBBUTT:

4 Q. Mr. Garmatz, I'm going to hand you a green
5 marker, which I think might be a good color for what
6 we're about to do. Yeah. And if you could with the
7 green marker, please, on Exhibit 4, which is -- let me
8 strike all that.

9 Do you recognize Exhibit 4, sir?

10 A. Yes.

11 Q. Okay. And do you recognize it to be a figure
12 from -- produced by HDF as part of its proposal to put a
13 dairy site at the Mahaulepu property?

14 A. Yes.

15 Q. Okay. I'm going to ask you to draw the area
16 that was planted in July and August of 2015 on Exhibit 4
17 with the green marker. Can you do that for us?

18 A. (Writing.)

19 Q. Okay. So there are two areas -- well,
20 actually, if I may ask you, this line here that goes to
21 the irrigation pivot, does it complete --

22 A. (Writing.)

23 Q. There we go. All right. So there are
24 essentially two areas that you've indicated on Exhibit 4
25 as the areas that were harrowed and then planted in

1 kikuyu grass in July and August 2015, correct?

2 A. Yes.

3 Q. Could you please put the No. 1 in one of them
4 and 2 in the other?

5 A. (Writing.)

6 Q. And then circle the number, please.

7 A. (Writing.)

8 Q. Okay. Do you know how many -- approximately
9 how many acres No. 1 is?

10 A. Eight.

11 Q. Okay. And No. 2, how many acres?

12 A. Just thinking here.

13 Q. Okay.

14 A. Approximately 30.

15 Q. Okay. And the total is approximately 39, you
16 said earlier?

17 A. Yeah.

18 Q. Okay. I'm going to hand you a brown marker,
19 and if you could tell me where the irrigation ditches
20 are in proximity to fields 1 or 2. Well, hang on just a
21 second. Let me back up. Move your hand, please. Okay.

22 Before you do that, do you see the stream or
23 river markings are in light blue on the key?

24 A. Uh-huh (moves head up and down).

25 Q. Is that yes?

1 A. Yes.

2 Q. Okay. And the stream or river marking, is that
3 what runs right along the green line that you have on
4 the west side of field one?

5 A. Yes.

6 Q. And is there a name for that river or stream?

7 A. Ditch.

8 Q. What do you call it?

9 A. Ditch.

10 Q. Is that -- that's all you call is the ditch?

11 A. Uh-huh (moves head up and down).

12 Q. And does a ditch also enter in the upper
13 left-hand corner of field two coming from north of the
14 green line that you put in?

15 A. Yes, yes.

16 Q. And does that join up with the ditch that --

17 A. Yes.

18 Q. Just a moment, please. That borders the green
19 line that you drew in on the west side of one?

20 A. Yes.

21 Q. And where does that ditch go? The ditch

22 where -- after the confluence of the two ditches that
23 we're discussing here, and I'm going to ask you with my
24 blue pen to circle the confluence of those ditches.

25 A. Define confluence.

1 Q. Where this ditch that we talked about that runs
 2 into the northwest corner of field two meets up with the
 3 ditch that comes in along side the west edge of field
 4 one.
 5 A. (Writing.)
 6 Q. Okay. So that's the confluence where you've
 7 circled there.
 8 And then where does that ditch proceed then?
 9 Before you mark, just tell me where it goes.
 10 A. (Indicating.) Straight to the south.
 11 Q. Okay. So is that the purple line at that
 12 point?
 13 A. Yes.
 14 Q. Okay. And is that open to the surface all the
 15 way?
 16 A. Define open to the surface.
 17 Q. Open to the air.
 18 A. Yes.
 19 Q. Okay. So none of it is piped underground?
 20 A. Oh, no, no.
 21 Q. That's what I was trying to get at. Okay.
 22 THE WITNESS: I need to take a break.
 23 (Break from 11:13 to 11:18.)
 24 BY MR. TEBBUTT:
 25 Q. Mr. Garmatz, I'm going to ask you some more

1 questions with respect to the categories of questioning
 2 in Exhibit 2. Have we discussed everything there is to
 3 discuss about 1A with grading and grubbing?
 4 MR. PALOUTZIAN: I'm going to object to the
 5 form of the question. Go ahead.
 6 THE WITNESS: Yes.
 7 BY MR. TEBBUTT:
 8 Q. With respect to 1B, the watering troughs, how
 9 many watering troughs have been installed?
 10 MR. PALOUTZIAN: Object to the form of the
 11 question on that as well. Go ahead.
 12 THE WITNESS: Approximately 160.
 13 BY MR. TEBBUTT:
 14 Q. Okay. And those to the concrete watering
 15 troughs referred to in 1B in Exhibit 2, correct?
 16 A. Correct.
 17 Q. And what did you do to prepare the area for the
 18 installation of the water troughs? Was it -- well, let
 19 me ask you this: Was the preparation similar for all
 20 160?
 21 A. Yes.
 22 Q. Tell me what the preparation was.
 23 A. The ground was left as is, level as it was, and
 24 we brought in the limestone from the quarry and leveled
 25 the ground and raised the water trough up on a level

1 plane so they could place the water trough on that level
2 plane.

3 Q. Okay. Was there any excavation work done?
4 A. No.

5 Q. So the limestone was added to the surface?
6 A. Correct.

7 Q. And built up?
8 A. Built up and leveled.

9 Q. Okay. And it was brought from the neighboring
10 quarry?

11 A. Yes.

12 Q. The one that's pretty close to the site?

13 A. Yes.

14 Q. That you can see from the site?

15 A. Yes.

16 Q. And how much over ground level was each water
17 trough built up or the setting for the water trough?

18 A. The design was 12 to 15 inches, but some places
19 we had to put more. If the ground was unlevel, we had
20 to put more.

21 Q. Okay. And are all the watering troughs, do
22 they now have waterlines that connect them?

23 A. No.

24 Q. Do any of them have waterlines that feed them?

25 A. Some.

1 Q. How many?

2 A. Forty.

3 Q. Are they in one particular area, those 40?
4 A. Yes.

5 Q. Okay. And are they fed by one of the two
6 irrigation pipes that was installed at the facility that
7 you testified about earlier?

8 A. No.

9 Q. Are they fed by an existing waterline?

10 A. No.

11 Q. How are they fed?

12 A. Not fed at all yet.

13 Q. Right. But that infrastructure is there,
14 correct?

15 A. Uh-huh.

16 Q. Is that a yes?

17 A. The infrastructure to the --

18 Q. To the watering troughs.

19 A. That was installed.

20 Q. Okay. And when was that installed?

21 A. April of '14, March and April of '14.

22 Q. And those installations were in addition to the
23 two pipes that you testified about earlier, correct?

24 A. Correct.

25 Q. And how was that piping installed?

1 A. We used a tool that digs down in the ground by
 2 the force of a bucket of an excavator, large excavator.
 3 We call it the wedge bullet. And the pipe is attached
 4 to the bullet that comes along in the ground underneath.
 5 It digs down about 16, 18 inches. Just a thin line.
 6 Q. Okay.
 7 A. And the pipe trailer is right behind it. And
 8 as you -- as the excavator moves backwards, the bullet
 9 stays in the ground continuously, and the excavator just
 10 drives it where he wants the line to go.
 11 Q. Okay. So the earth along the line is
 12 disturbed, it's moved up and around, is it or not?
 13 A. Yes, it is.
 14 Q. Okay.
 15 A. Just a small portion. Not very large. I mean,
 16 four or five inches might be the most because that
 17 bullet stays in the ground as it pulls that pipe. And
 18 then the pipe is in the ground and right behind the
 19 bullet. The ground comes together. I mean, it's just a
 20 thin piece of steel, real (indicating).
 21 Q. Okay. And how wide is the area of disturbance?
 22 A. Two to three inches, four inches. Let's just
 23 say six inches.
 24 Q. And how many feet of the bullet piping, is that
 25 what you call it? What was the phrase you used? I'm

1 sorry, Mr. Garmatz.
 2 A. Bullet. We call it the bullet drill is what we
 3 call it.
 4 Q. Bullet drill.
 5 A. Yeah.
 6 Q. Okay. How many feet of piping was installed
 7 with the bullet drill?
 8 A. I wouldn't know that figure. I couldn't tell
 9 you that.
 10 Q. Approximately.
 11 MR. PALOUTZIAN: Lacks foundation, calls
 12 for speculation. Go ahead.
 13 THE WITNESS: Thirty-five hundred feet.
 14 BY MR. TEBBUTT:
 15 Q. Okay. Do you know what the distance is between
 16 the water troughs? Is it kind of a similar distance
 17 between them?
 18 A. It's a similar pattern.
 19 Q. Okay. So are they laid out circularly,
 20 linearly?
 21 A. Linearly.
 22 THE COURT REPORTER: Hang on one second.
 23 Something happened with my machine.
 24 (Court Reporter machine malfunction.)
 25 (Off the record from 11:25 to 11:27.)

1 BY MR. TEBBUTT:

2 Q. Do you know what the distance is between the

3 water troughs generally?

4 A. Estimate 200 feet.

5 Q. Okay. And the water troughs are patterned such

6 that they'd be available in the paddocks that the cows

7 would be able to use, correct?

8 A. Two water troughs per paddock.

9 Q. Okay. Are all the water troughs that would be

10 -- that are planned for the site installed now?

11 A. No.

12 Q. How many more water troughs need to be

13 installed?

14 A. Well, the difference in the number that I gave

15 you before from -- no, there's a total of 238 water

16 troughs. What's the number I gave before?

17 Q. You said there're 40 that had piping to them.

18 A. Yeah. But you asked me how many had been

19 installed.

20 Q. Right. And I don't remember.

21 A. I don't know what that difference number is.

22 MR. PALOUTZIAN: I believe the testimony

23 was more than 60.

24 THE WITNESS: Yes. So there's probably 70

25 to 80 that need to be installed yet.

1 BY MR. TEBBUTT:

2 Q. Okay. Are there any other waterlines other

3 than the two irrigation lines that we talked about and

4 the waterlines that are installed to the approximately

5 40 troughs that are already installed? Are there any

6 other waterlines that have been installed on the site

7 since you started in October 2013?

8 A. No.

9 Q. The first the pivot, when was that installed?

10 A. March 2014.

11 Q. Okay. And is that Pivot 1 as depicted on

12 Exhibit 4?

13 A. Yes.

14 Q. So that's March 2014 was its installation,

15 correct?

16 A. Yes.

17 Q. Were there bridges or ramps installed to allow

18 Pivot 1 to do its job?

19 A. Yes.

20 Q. And how many pivots or ramps were installed?

21 A. Well, you've got 12 towers.

22 Q. Let's just say for Pivot 1 to start with.

23 A. I'd say 18 to 20.

24 Q. Okay. In the field that covers Pivot 1, about

25 18 to 20 ramps?

1 A. Uh-huh (moves head up and down).

2 Q. Describe how a ramp is installed.

3 A. Well, they're mechanically --

4 MR. PALOUTZIAN: Let me just state the

5 question is vague and overbroad. Go ahead. Go ahead.

6 THE WITNESS: They're mechanically put

7 together. They're welded together before they're

8 placed.

9 BY MR. TEBBUTT:

10 Q. Where was that work done?

11 A. On the edges.

12 Q. Of the fields?

13 A. In the fields, yes.

14 Q. Okay.

15 A. And then the large excavator would attach it in

16 the middle, and each location of bridge had a GPS site.

17 We would determine that GPS site and center one into the

18 bridge on one side of the bank, and then we would go to

19 the other side and determine what the GPS point is and

20 situate that point in the middle. And then we had --

21 there's long spikes, 32 inches long, that are on the

22 edge -- ends of the bridges. And we would have a

23 backhoe that would be there, that once it was set and

24 everybody agreed it matched the GPS, would set both

25 sides down into the ground.

1 Q. How would you set them down?

2 A. Backhoe, hydraulic. The bucket would push it

3 in the ground.

4 Q. Would push the spike down?

5 A. Yes.

6 Q. Did you prepare the areas where the anchor ends

7 of the bridges went?

8 A. Where it was needed.

9 Q. And so what would you do to prepare the ground

10 where it was needed?

11 MR. PALOUTZIAN: The question is vague. Go

12 ahead.

13 THE WITNESS: We would drag the soil back,

14 just the width of the bridge.

15 BY MR. TEBBUTT:

16 Q. And how wide are the bridges?

17 A. Thirty inches.

18 Q. Okay. And how far would you drag the soil

19 back?

20 A. Just far enough to make sure that the tire

21 could get on top of the bridge.

22 Q. How many feet would that be?

23 A. In worst case scenario, probably three feet.

24 Q. What do you think the average is?

25 A. Two to three feet.

1 Q. And how many bridges did you have to do that
2 for?

3 A. I couldn't tell you that exactly.

4 Q. More than half of them?

5 A. Oh, no. No.

6 Q. More than five?

7 A. Yeah. Let's say 5 to 10.

8 Q. Five to 10 for Pivot 1?

9 A. Uh-huh (moves head up and down).

10 Q. Was that also true for Pivot 2? Same number --
11 are there the same number of ramps or are their fewer?

12 A. There's fewer, because it only crosses one
13 drain. It crosses this drain right here (indicating).

14 Q. Okay. Does Pivot 2 not cross the drain that
15 comes through the field where Pivot 1 is?

16 A. Yes.

17 Q. It does cross that?

18 A. Yes.

19 Q. So are there ramps there, too?

20 A. Yeah, there's ramps there, too. My mistake.

21 Q. And is there actually a third waterway that
22 Pivot 2 crosses right here?

23 A. Yeah, but it's not designated for bridges.

24 Q. There are no bridges on this --

25 A. No.

1 Q. -- particular segment?

2 A. No, it's just a swale, going to be a swale.

3 Q. Okay. So do you have names for these -- this
4 particular what you call a swale?

5 A. No.

6 Q. Do you have a name for this one (indicating)?

7 A. We call it the main drain -- main ditch.

8 Q. Okay. Can you just write the initials -- or
9 just write the word, main ditch, somewhere right next to
10 that and point to it, please?

11 A. (Writing.)

12 Q. And just draw an arrow.

13 A. (Writing.)

14 Q. Okay. And what do you call this -- the ditch
15 that's to the --

16 A. Center ditch.

17 Q. -- east of it? Is that right? West, east?

18 A. East, east.

19 Q. I'm confused. East. Thank you.

20 A. (Writing.)

21 Q. Okay. Are there any other ditches on the
22 property that you have names for?

23 A. I call this the No. 6 (writing).

24 Q. So that's the swale we were just talking about?

25 A. Uh-huh.

1 Q. Would you put an arrow to that, please?

2 A. (Writing.)

3 Q. Okay.

4 A. Call this one the one that comes down here.

5 That's right here, the No. 3 (writing).

6 Q. And the No. 3 goes into a little pond on the

7 property?

8 A. No. This map isn't a hundred percent right.

9 It goes into this -- it goes into the main ditch.

10 Q. So can you take my blue pen and draw the

11 continuation where it goes into the main ditch?

12 A. (Writing.) That's where it needs to be, right

13 here, not here.

14 Q. Okay. So this ditch is off, you think, a

15 little bit?

16 A. Yes.

17 Q. Potentially a little bit to the northeast?

18 A. Yes. Northwest.

19 Q. Northwest, okay. So that's No. 3 ditch?

20 A. Uh-huh (writing).

21 Q. Okay. And you drew squiggly lines through the

22 other No. 3 ditch because you think that's incorrectly

23 sited on the map, correct?

24 A. Yes.

25 Q. Okay. Any other water courses or ditches that

1 you have names for on the site?

2 A. No.

3 Q. And all of these ditches eventually converge

4 just south of the site, correct?

5 A. Correct.

6 Q. Okay. And then eventually go to the ocean

7 through the Waiopili Stream?

8 A. Correct.

9 Q. And are there other swales on the property that

10 are unnamed?

11 A. No.

12 Q. There are no other ditches or swales that could

13 carry water off the site in your mind?

14 MR. PALOUTZIAN: Lacks foundation, calls

15 for speculation. Go ahead.

16 THE WITNESS: No.

17 BY MR. TEBBUTT:

18 Q. Were you present when the ground water

19 monitoring wells were installed on the site?

20 A. Yes, sir.

21 Q. For all four of them?

22 A. Yes, sir.

23 Q. And have there been just four thus far?

24 A. That's all.

25 Q. Describe the site preparation for the first

1 monitoring well.

2 A. Just mowed the grass. They went in and

3 started.

4 Q. Did you do any excavating or digging?

5 A. No.

6 Q. When the wells were drilled, where did the

7 cuttings from the drilling go?

8 A. We kept them local. Just brought 'em off to

9 the side.

10 Q. How far away from the actual drilling site?

11 A. Twenty feet at the most.

12 Q. And did you do anything to them?

13 A. No, just kept them there.

14 Q. Just going back to my question earlier. I just

15 wanted to clarify. You said -- well, let me ask you

16 this question with respect to the other ditches: Are

17 there any other smaller unnamed ditches that go to the

18 main ditches that drain to -- that eventually drain into

19 the ocean?

20 MR. PALOUTZIAN: Lacks foundation, calls

21 for speculation. Go ahead.

22 THE WITNESS: Yeah.

23 BY MR. TEBBUTT:

24 Q. And are they depicted on Exhibit 4?

25 A. Yeah.

1 Q. All right. Circle, if you will, the headwaters

2 of those ditches.

3 A. (Writing).

4 Q. Okay. So that's the beginning of it?

5 A. Uh-huh.

6 Q. Okay. And that's actually along the -- okay.

7 Is that the eastern ridge or western ridge? Eastern

8 ridge of the -- eastern edge of the property?

9 A. Uh-huh.

10 Q. Okay. And that doesn't go onto the property?

11 A. Yes.

12 Q. It does?

13 A. Uh-huh.

14 Q. Where does it go onto the property?

15 A. Right here (indicating).

16 Q. Okay. And so take your pen and draw where it

17 goes.

18 A. (Writing.)

19 Q. Okay. Does it end there?

20 A. Yes.

21 Q. Or does it hook up with the center ridge?

22 A. Ends there. Ends there.

23 Q. And so it doesn't hook up with any of the other

24 ditches or water courses? Does it continue somewhere?

25 A. It ends here.

1 Q. What does it end in?
 2 A. In a field.
 3 Q. Okay.
 4 A. The large area currently.
 5 Q. All right. So do you have a name for that
 6 ditch?
 7 A. No, no.
 8 Q. Okay.
 9 A. Haven't worked with it.
 10 Q. Okay. You haven't done anything on that?
 11 A. No.
 12 Q. Okay. So can you put an X on the spot where
 13 you said it terminates.
 14 A. (Writing.)
 15 Q. Okay. And then circle it, please.
 16 A. (Writing.)
 17 Q. Okay. Are there any other ditches like that on
 18 the property or just -- are there other ditches that
 19 come onto the property?
 20 A. Yeah, we've got one back here.
 21 Q. So take the blue pen and draw the outline of
 22 that one, too, please.
 23 A. (Writing.)
 24 Q. And did that -- the one you just drew with the
 25 blue pen starting on the western side by the pumping

1 station going right across the top where it says, Drip
 2 irrigation 3.9 percent, and then continuing over, does
 3 that continue over to the main ditch?
 4 A. Yes.
 5 Q. And it --
 6 A. Enters the main ditch.
 7 Q. Enters the main ditch. And do you see water
 8 flowing in that ditch sometimes?
 9 A. Yes.
 10 Q. Okay.
 11 A. That's the Waita drain.
 12 Q. That's what's called the Waita drain?
 13 A. Right.
 14 Q. Okay. And are there other low spots on the
 15 site that when, you know, we were there during the
 16 Rule 34 inspection, you said there were a number of low
 17 spots around the facility. Are there other low spots
 18 that are not drawn on Exhibit 4?
 19 A. You mean -- what do you mean by low spots?
 20 Q. Well, low spots that or old swales or something
 21 like that.
 22 MR. PALOUTZIAN: The question is overbroad,
 23 it's vague.
 24 THE WITNESS: There's a line that runs
 25 right through here (indicating).

1 BY MR. TEBBUTT:
2 Q. What kind of line?
3 A. It's where the old PVC line is that feeds all
4 these people down here (indicating).
5 Q. Feeds them what?
6 A. Water.
7 Q. From where?
8 A. Waita.
9 Q. So has that sort of eroded and become a low
10 spot where that pipe is over time?
11 A. Yes.
12 Q. Okay. And so that runs parallel to the center
13 between the main ditch and the center ditch?
14 A. Right here, right here (indicating). Parallel
15 to it all the way down.
16 Q. Okay. Where does it start?
17 A. Right here (indicating).
18 Q. And it comes off the dotted yellow line?
19 A. No, no, no, no, no, no. It starts --
20 there's a pump station right here (indicating).
21 Q. Okay.
22 A. We call it a pump station.
23 Q. All right.
24 A. And that's where that P --
25 Q. Can you write PS next to that, please?

1 A. (Writing.)
2 Q. Okay. And then draw where it goes.
3 A. (Writing.)
4 Q. So it goes from the pump station, fairly close
5 to the middle of where the main ditch and the center
6 ditch are, correct?
7 A. Yes, yes.
8 Q. And what does it go to once it goes off the HDF
9 site?
10 A. To other people.
11 Q. Other farms?
12 A. Yes.
13 Q. For irrigation?
14 A. Yes.
15 Q. Is there an end point right there where it
16 ends?
17 A. I couldn't tell you that. I wouldn't know.
18 Q. Okay. And so that's -- the PS line is a low
19 spot in the fields?
20 A. Uh-huh (moves head up and down).
21 Q. Okay. Have you ever seen water running in
22 there?
23 A. No.
24 Q. Were you responsible for the well completion
25 reports?

1 A. No.

2 Q. Were the well drillers responsible for that?

3 A. Correct.

4 Q. Did you review their reports?

5 A. Yes, sir.

6 Q. Did you review them before they were submitted

7 to the state?

8 A. No.

9 Q. Do you know if anyone from HDF reviewed them

10 before they were submitted to the state?

11 A. Tom Nance or our advisor.

12 Q. One of your consultants?

13 A. Yes.

14 Q. Have you done any work on repairing or

15 replacing fencing along the perimeter of the HDF

16 property?

17 A. No. Define repairing or fencing.

18 Q. Well, is there -- all right. Let's try it this

19 way: Is there a fence all around the perimeter of the

20 HDF property?

21 A. Some fencing, which would be neighbors'

22 fencing.

23 Q. Okay. Does HDF own fence that goes all around

24 its property?

25 A. We don't have anything installed.

1 Q. Okay. So the fences then are all neighbors'

2 fences, not HDF fences?

3 A. Uh-huh (moves head up and down).

4 Q. Has HDF maintained any of those fences?

5 A. No.

6 (Garmatz Deposition Exhibit No. 5 was

7 marked for identification.)

8 BY MR. TEBBUTT:

9 Q. Sir, handing you what's been marked Exhibit 5,

10 an aerial photo, do you recognize the area that's

11 depicted in this photo?

12 A. Yeah.

13 Q. Do you recognize it to be some portion, at

14 least, of the HDF site?

15 A. Yeah.

16 Q. Do you see what we're going to refer to and

17 what was referred to in Exhibit 2 as the keyhole pond?

18 A. Yes, sir.

19 Q. Tell me how that pond -- well, strike that.

20 When was that keyhole pond dug?

21 A. Late April or early May of '14.

22 Q. And why was it dug?

23 A. Observation purposes.

24 Q. Observation of what?

25 A. Possible rock formations closer to the surface.

1 Q. So would you characterize it as a geological
2 excavation?

3 A. Yeah.

4 Q. All right. And what were the results of that
5 excavation?

6 A. That there was no rock there.

7 Q. Okay. Were any samples taken?

8 A. No.

9 Q. Any soil samples taken?

10 A. No.

11 Q. No water quality samples?

12 A. No.

13 Q. What's the source of the water in that pond?

14 A. Probably groundwater.

15 Q. How deep was that pond dug?

16 A. Originally dug about 8 to 10 feet.

17 Q. And what about the area around it, was that
18 excavated at all before that pond was dug?

19 A. No, we just had the excavator down -- well, the
20 excavator might have done some work around it. But I
21 was there that day, and I don't recall any of that going
22 on there.

23 Q. The excavated material, what was done with
24 that?

25 A. As you see there, it's placed to your left in

1 that little berm, that grassy berm.

2 Q. Can you, with my blue pen, please circle the
3 area where the excavated material was placed?

4 A. (Writing.) How do you want me to identify it?

5 Q. Just put EXC.

6 A. (Writing.)

7 Q. Do you see how the area there looks squared
8 off?

9 A. Uh-huh (moves head up and down).

10 Q. Where keyhole pond was.

11 A. Uh-huh.

12 Q. Was there excavation done to create that square
13 or rectangular area?

14 A. I couldn't tell you that. I wouldn't know.

15 Q. Wasn't, in fact, that whole area excavated
16 before the keyhole pond was dug?

17 A. I couldn't tell you that.

18 Q. Who could?

19 MR. PALOUTZIAN: Calls for speculation,
20 lacks foundation. Go ahead.

21 THE WITNESS: Probably Mason, the excavator
22 operator.

23 BY MR. TEBBUTT:

24 Q. Mason who?

25 A. Slako, S-l-a-k-o.

1 Q. Were you there with him the whole day when that

2 --

3 A. No, I came later that day when they decided to
4 go ahead, but I remember we followed the excavator in
5 there.

6 Q. Who's we?

7 A. Myself and Doyle Waybright.

8 Q. Just the two of you?

9 A. No, Marty was there also.

10 Q. Who's Marty?

11 A. Marty Forster is the guy that owns Effluent
12 Irrigation.

13 Q. Okay. Who else was there?

14 A. Myself and Doyle and Mason. And I believe Adam
15 was with us, too. I'm not for sure about that.

16 Q. Who requested that this area be dug?

17 A. The geophysicist that was doing the soil work,
18 the geophysical study for the slab for the parlor, the
19 dairy parlor.

20 Q. And who is that?

21 A. I can't recall his name.

22 Q. Was he present during the excavation?

23 A. No.

24 Q. Was this all done in one day?

25 A. Yeah, one afternoon.

1 Q. Did you take pictures for the geophysicist?

2 A. No, we never did.

3 Q. How did he get information about what you did?

4 A. We just told him, called him the next day and
5 told him what we ran into. But this wasn't for his
6 study.

7 Q. What was it for then?

8 A. Our own information.

9 Q. For what kind of information?

10 A. To determine if there was any stone or what
11 depth the stone was at.

12 Q. Was this the area where you planned to put the
13 lagoon, the effluent lagoon?

14 A. Yes.

15 Q. So was part of the purpose to determine depth
16 to groundwater?

17 A. No, we were looking for stone.

18 Q. Have you determined what the depth to
19 groundwater is in that area?

20 A. Varies from time to time.

21 Q. Right where the keyhole pond is, have you
22 determined the depth to groundwater there?

23 A. Like I said, it varies.

24 Q. From what to what?

25 A. Two or three feet.

1 Q. Have you changed your lagoon design plan for
 2 the proposed dairy based on the work that was done at
 3 the site?
 4 A. No.
 5 Q. Do you know if any neighbors have installed
 6 additional fencing along the perimeter of the HDF
 7 property since HDF said it was planning to put a dairy
 8 site there?
 9 A. Yes.
 10 Q. How many?
 11 A. Only one to my knowledge.
 12 Q. And how much additional fencing?
 13 A. Oh, man. He probably put in a thousand feet.
 14 Q. Where?
 15 A. On his boundaries.
 16 Q. Yeah. Which are his boundaries?
 17 A. He's right here (indicating).
 18 Q. Okay. Draw just a line across the red for
 19 where it starts.
 20 A. His boundaries?
 21 Q. No, where the -- where you say the fence is.
 22 A. Okay. It started way back here (writing).
 23 Q. Okay. And if you go above that line, just put
 24 the name of the person, say right up here.
 25 A. (Writing.)

1 Q. Whose property it is.
 2 A. Evan Vasconcelles.
 3 Q. Okay. I'm just going to take my pen and draw
 4 an arrow to the fence. All right. And I'm just going
 5 to write down, New fencing, okay? When was that
 6 installed, do you know?
 7 A. The summer of '15.
 8 Q. Okay. I'll just writing down, New fencing
 9 summer of 2015, all right?
 10 A. No, put repaired fencing.
 11 Q. Repaired fencing. Okay.
 12 A. Not new, repaired.
 13 Q. All right. Did HDF assist with any of that --
 14 A. No.
 15 Q. -- repair?
 16 A. No.
 17 Q. Did it pay for any of it?
 18 A. No.
 19 Q. When we were there at the nursery in March; end
 20 of this group of questions for now; there was additional
 21 disturbed area around the perimeter, the planted area,
 22 correct?
 23 A. Correct.
 24 Q. When had that been plowed?
 25 A. Disked.

1 Q. Disked. Pardon me.
 2 A. I've maintained that disked area since late
 3 '14, early '15 to keep any grasses that might leach into
 4 the field, into the nursery. We had a lot of watergrass
 5 down there.
 6 Q. A lot of what? Watergrass?
 7 A. Watergrass, yeah.
 8 Q. Okay. And so that area was disked, how deep?
 9 A. Six inches.
 10 Q. Okay. And is that a practice that you do
 11 regularly on that same area?
 12 A. Yes.
 13 Q. Do you intend to plant that area?
 14 A. Yes.
 15 Q. The part that was disked?
 16 A. Uh-huh (moves head up and down) .
 17 Q. Has it been planted since we were there?
 18 A. No.
 19 Q. Has there been any soil amendments or other
 20 materials brought in and added to that area that was
 21 disked when we were there in March 2016?
 22 A. Define soil amendments.
 23 Q. Well, anything from off the site. Let's start
 24 with that.
 25 A. Okay. Now repeat your question again.

1 Q. Yes. Has anything from off site been added to
 2 the area that was disked in March 2016?
 3 A. No.
 4 (Garmatz Deposition Exhibit No. 6 was
 5 marked for identification.)
 6 BY MR. TEBBUTT:
 7 Q. Handing you what's been marked as Exhibit 6, is
 8 this the area, part of the area at least, where we were
 9 just talking about that was disked?
 10 A. Uh-huh (moves head up and down) .
 11 Q. When was that disked? This is, I will
 12 represent you, is a picture from the site inspection in
 13 March of 2016.
 14 A. No, it was probably done 30 days before then
 15 based on the growth of what you see there.
 16 Q. Okay. And has it been disked since?
 17 A. I don't believe so.
 18 Q. Is it still in that similar condition?
 19 A. Pretty much so, yeah, yeah.
 20 Q. So that's native soil that we see there?
 21 A. Yeah, yeah.
 22 Q. Has there been anything -- any fertilizers or
 23 any pesticides, herbicides, added to that area?
 24 A. I've sprayed the green grass that's growing.
 25 Q. In the disked area?

1 A. Yes, sir.

2 Q. Sprayed it with what?

3 A. Roundup.

4 Q. So it looks mostly the same as what it did in

5 March at this point?

6 A. Yeah, yeah.

7 MR. TEBBUTT: Why don't we take a break for

8 lunch?

9 MR. PALOUTZIAN: Okay.

10 (Break from 12:03 to 4:47. Moved

11 location.)

12 (Garmatz Deposition Exhibit No. 22 was

13 marked for identification.)

14 MR. TEBBUTT: Back on the record with Mr.

15 Garmatz.

16 BY MR. TEBBUTT:

17 Q. Mr. Garmatz, it's my duty it remind you that

18 you're still under oath.

19 A. Correct.

20 Q. Do you understand that?

21 A. Correct.

22 Q. Okay. When we were talking this morning, one

23 question -- or one answer you gave me about the nursery,

24 you said the nursery is now three and a half acres and

25 it was originally four. Do you recall that testimony?

1 A. Correct, yes, yes.

2 Q. Why it is 3.5 acres now when it was initially

3 four?

4 A. When the E&I folks came to install the pivot,

5 the main point section was located in the area right in

6 the middle of the pivot -- right in the middle of the

7 nursery. And so they tore out a lot of the ground

8 around it, and I never replaced it.

9 Q. Okay. Did it have anything to do with any

10 archeological issues around the nursery?

11 A. No, no.

12 Q. When you first started for HDF, you had one

13 other employee, Mr. Waybright, is that right in

14 October 2013?

15 A. No. No, not at that time.

16 Q. When did Mr. Waybright start?

17 A. February of '14.

18 Q. Okay. Was it January or February, do you

19 remember?

20 A. February.

21 Q. Okay. Has HDF had any other employees since

22 Mr. Waybright left besides you?

23 A. No.

24 Q. During the Rule 34 inspection, there were two

25 guys there wearing HDF construction crew shirts. Who

1 were they?

2 A. They were Grove Farm personnel.

3 Q. What were their names?

4 A. Roy Gagasa.

5 Q. Gagasa?

6 A. Yeah.

7 Q. How do you spell that, do you know?

8 A. G-a- -- just a second for this phone to come

9 on. G-a-g-a-s-a.

10 Q. And the other person?

11 A. Royce. Just a second. I'll get you that.

12 Royce Kawabata, K-a-w-a-b-a-t-a.

13 Q. And you said they were both Grove Farm

14 employees?

15 A. Uh-huh.

16 Q. How many HDF construction crew T-shirts did you

17 guys make up?

18 A. I think it was 300 Approximately. I don't know

19 that number for sure, but approximately 300.

20 Q. Di you just give 'em out?

21 A. Yeah.

22 Q. I'm going to hand you what's been marked as

23 Exhibit 22 in this case, which is a declaration of you

24 in support of the defendants' motion for summary

25 judgment filed back on November 25th, 2015. Do you see

1 that?

2 A. Uh-huh (moves head up and down).

3 Q. I'm going to ask you some questions about it.

4 You signed that under penalty of perjury, correct?

5 A. Uh-huh.

6 Q. In paragraph five of your declaration you list

7 the construction that was performed at the property from

8 February 2014 to June '14. Is that a complete list?

9 A. (Writing.) Just two or all of -- just five?

10 Q. Yeah, five, A through F. Is that a complete

11 list of the construction activities that took place

12 between February 2014 and June 2014?

13 A. Yeah, yes, (writing).

14 Q. Paragraph seven --

15 MR. PALOUTZIAN: Let's not mark it up.

16 Don't mark it.

17 MR. TEBBUTT: Did he mark on it?

18 MR. PALOUTZIAN: He put some checkmarks on

19 there.

20 BY MR. TEBBUTT:

21 Q. Okay. So the checkmarks next to -- on

22 Exhibit 22 next to paragraph five A through F, were made

23 by you, correct?

24 A. That's correct.

25 Q. Okay. All right. Keep that in front of you,

1 but let's not mark on this anymore, please.

2 In paragraph seven, it says, In addition,
3 between February and April of 2015, ground work,
4 drilling, casing and grouting work was completed on four
5 separate vertical monitor wells.

6 What groundwork was done?

7 A. Well, they drilled the wells from the ground,
8 from the top of the ground.

9 Q. Understood. How is that different than
10 drilling? What's the groundwork that was done?

11 MR. PALOUTZIAN: Objection, asked and
12 answered. Go ahead.

13 THE WITNESS: The only groundwork that we
14 did there was we sprayed the ground before they went in
15 there.

16 BY MR. TEBBUTT:

17 Q. How soon before?

18 A. A couple weeks.

19 Q. To kill the vegetation to allow easier access?

20 A. Yes, sir.

21 Q. Did you do any backhoe work or any harrowing?

22 A. No. We also mowed some areas there also.

23 Q. Okay. So you also did some mowing, too, for
24 access?

25 A. Yeah.

1 Q. And you said no backhoe work?

2 A. No.

3 Q. Sir, if you'll take a look at Exhibit 1 to your
4 deposition. That's the pile of invoices that we talked
5 about earlier this morning. I'd like you to take a look
6 at HDF 000544 and 545. Do you see those two pages?

7 A. Yeah.

8 Q. And do you see the entries for backhoe, well
9 drilling?

10 A. Yeah.

11 Q. On 3/25/15 three hours at \$75?

12 A. Uh-huh.

13 Q. What was done with the backhoe associated with
14 the well drilling?

15 A. I couldn't tell you.

16 Q. And so there was backhoe work done?

17 A. Well, if they're billing us for it, yeah.

18 Q. Okay. And you even have notes. It says, Under
19 budget. Is that your language?

20 A. Yeah, that's mine, that's mine.

21 Q. Okay. So you approved that invoice?

22 A. Yeah, yeah.

23 Q. Okay. Same thing with -- on 545, entry for
24 4/8/15 backhoe, well drillers, two hours at 75. And you
25 said that that was on budget, correct?

1 A. Yeah.

2 Q. So you approved that work as well?

3 A. That's correct.

4 Q. So that contradicts your prior statement about

5 whether there was backhoe work being done, correct?

6 A. That's right, correct.

7 Q. Are there any other statements that you've made

8 thus far today that you'd like to correct that are

9 incorrect?

10 A. No.

11 MR. PALOUTZIAN: I'm going to object to the

12 form of the question.

13 BY MR. TEBBUTT:

14 Q. If you look at HDF 000548. Do you have that in

15 front of you?

16 A. Uh-huh (moves head up and down).

17 Q. The entry is --

18 A. Hold on, hold on, hold on. Yeah. 548, okay.

19 Q. 548. The entry for 6/9/2015, irrigation

20 repairs, nine hours. What type of irrigation repairs

21 were undertaken?

22 A. That's back in June. I'm sorry. I can't tell

23 you that. I'm sure that it was done, but I can't tell

24 you what that would be. I just can't recall that far

25 back.

1 Q. Okay. Are there any documents that you would

2 have that would tell you what was done other than this

3 invoice?

4 A. No, sir.

5 Q. Do you know who did that work? Whether it was

6 Mr. Bloemke?

7 A. Mr. Bloemke.

8 Q. On 6/26/15, entry for replace eight-inch valve

9 at pivot, labor.

10 MR. PALOUTZIAN: Are we on a different page

11 now?

12 BY MR. TEBBUTT:

13 Q. Yeah, next page, 549. Do you see that entry?

14 A. Uh-huh (moves head up and down).

15 Q. What was that, do you know?

16 A. Well, the valve at the No. 1 pivot froze, and

17 we had to replace the eight-inch valve.

18 Q. So was that all above-ground work?

19 A. Yeah, yeah.

20 Q. Turn to the next page, 550. There are two

21 entries for fencing on 7/15 and 7/14/15. Do you see

22 that?

23 A. Uh-huh (moves head up and down).

24 Q. Do you know what kind of fencing work was done?

25 A. Well, that was about the time that we were

1 starting to set the fence line by the GPS points, and I
2 would use Scott Bloemke to help me do that.

3 Q. What fencing line?

4 A. The perimeter fence line.

5 Q. So --

6 A. The perimeter.

7 Q. So I'm sorry. What were you doing? Explain to
8 me what that was?

9 A. There's GPS locations for all the fence posts.

10 Q. And so you were doing the GPS locating?

11 A. Uh-huh (moves head up and down).

12 Q. And he was assisting you with that?

13 A. Yes, yes.

14 Q. On the entry for 7/18/15 on that same page,

15 harrow. Do you know what area was harrowed?

16 A. Down around the nursery.

17 Q. On a page or two later, 552, on 7/1/15, entry
18 for backhoe work. Do you know what kind of backhoe work
19 was done?

20 A. 7/1, that was the day that we lost the -- the
21 bolts broke on the end portion of the pivot, the end
22 gun. And Scott and myself and one -- another AJAR
23 employee came down, and we used the backhoe to lift the
24 end section up so we could place new bolts through.

25 Q. The next page, 553, there's an entry for a

1 period of time June 29, '15 through July 23, '15. It
2 says, Shred trees and grass for fence installation. Do
3 you see that?

4 A. Yes.

5 Q. How many trees were shredded during that time
6 period?

7 A. Same thing we discussed this morning when I
8 told you we shredded so many lineal feet.

9 Q. Okay.

10 A. We discussed this already.

11 Q. All right. Next page, 554, there are a series
12 of entries for fencing. What kind of fencing was done?
13 Let's start with 7/23.

14 A. Same thing we were doing before. Setting those
15 -- setting that fence line.

16 Q. Okay. So that was all GPS work?

17 A. Yes.

18 Q. Did you stake anything?

19 A. Yes, sir.

20 Q. What did you stake with?

21 A. Wooden stakes.

22 Q. Are those stakes still in place today?

23 A. The biggest portion of them are not.

24 Q. Have they been removed by you or?

25 A. No, not been removed by me.

1 Q. Do you know who they've been removed by, if
2 anyone?

3 A. I couldn't tell you that, wouldn't know.

4 Q. They've just kind of fallen off over time?

5 A. Yeah, yeah.

6 Q. On 8/6/15 on 554, entry backhoe, pivot. Can
7 you tell me what that is?

8 A. I'd be guessing if I told you that.

9 Q. Okay. You remembered the one on 7/1/15, but
10 you don't know what happened on 8/6/15, is that correct?

11 A. Yeah, I recall the date at that point that that
12 pivot broke.

13 Q. Okay. Nothing jumps out in your memory about
14 8/6?

15 A. The only thing it could possibly be is the
16 lower pivot, the No. 2 pivot on your map. We had some
17 backfill work that needed to be done there.

18 Q. Okay. Does the next page help you with that,
19 555. It says, Cap eight-inch line, field 728?

20 A. No, no.

21 Q. Is that different than the 8/6 entry?

22 A. Yeah, yeah.

23 Q. Okay. So labor and backhoe for the 8/3/15
24 entry, what was -- what did that entail?

25 A. There was a line riser broke, and it was

1 leaking severely, so we turned off the water and dug
2 down like, again, 8 or 12 inches and reset the riser on
3 the main line.

4 Q. Is that the one at the nursery, the riser at
5 the nursery?

6 A. Yes.

7 Q. And I think we have might have had a picture of
8 it earlier in Exhibit 6.

9 A. Yeah.

10 Q. Is that it? Is that the riser?

11 A. No, because it's back here a ways. It's not in
12 the picture.

13 Q. Okay. Is it close to that apparatus?

14 A. Yeah, yeah.

15 Q. Okay. Do you still have Exhibit 1 in front of
16 you, sir?

17 A. Yes.

18 Q. I just want to ask you a few more questions.
19 518, HDF 518, maybe halfway through the bundle. Do you
20 have that one in front of you?

21 A. Uh-huh.

22 Q. There are a number of things crossed out.

23 A. Uh-huh.

24 Q. Why are they crossed out?

25 A. I don't know why they're crossed out. There's

1 another invoice that goes with that, because this is 235
 2 -- 203505B, so there's goes to be 203505A.

3 Q. Or maybe even just 505?

4 A. Huh?

5 Q. Or maybe even just the 505?

6 A. Oh, here it is right here. Your number is 510.

7 Q. Okay.

8 A. No, this is 405. That's not the right one.

9 Q. How about 532?

10 A. Yeah, that's it.

11 Q. Okay.

12 A. Notice the dates. Some of the work was done in
 13 November, and some of the other work was done in
 14 December. As it states -- as it's written up there on
 15 the top. Yeah there, see --

16 MR. PALOUTZIAN: Just let him ask a
 17 question.

18 BY MR. TEBBUTT:

19 Q. Yeah, I'm just kind of curious why I have two,
 20 but I guess it doesn't really matter, does it?

21 All right. Next, 533. There's an entry for
 22 backhoe work. Do you know what that was regarding?

23 A. I couldn't tell you.

24 Q. So in your preparation for the deposition did
 25 you look over the backhoe entries --

1 A. No.

2 Q. -- and try to determine what they were about?

3 A. No, I didn't.

4 Q. Okay. Let's look at 530, please. And again,
 5 this is still in Exhibit 1. The entry for 11/10/14, it
 6 says, Move fence post, three hours at 60. What fence
 7 post was moved?

8 A. Like we talked about this morning. We moved
 9 fence posts from one area to the other so I could plant
 10 that kikuyu in that field where the fence posts were at.
 11 We talked about it this morning.

12 Q. So is that the fence posts that were just laid
 13 in the field?

14 A. They were in bundles.

15 Q. In bundles, okay. So it wasn't that you were
 16 actually replacing the fence post?

17 A. No, no.

18 Q. Okay. What about the repair of the two-inch
 19 drain in that next entry on 11/18/14, what was that
 20 about?

21 A. I couldn't tell you.

22 Q. What is the two-inch drain?

23 A. That's probably the two-inch drain on the
 24 nursery. The drip system has a drain on it.

25 Q. Is that -- that's a two-inch drain system?

1 A. Uh-huh (moves head up and down).

2 Q. All right. Let's take a look at 534, please,

3 entry on 1/14/15 for backhoe. Do you know what that was

4 in relation to?

5 A. No, I sure wouldn't.

6 Q. Does the context of the other work done help

7 you -- help tell you what that might have been related

8 to?

9 A. No, no.

10 Q. All right. Let me ask you questions for the

11 next one, 535, entry on 1/5/15 for backhoe.

12 A. Again, I can't tell you.

13 Q. Same with 1/9.

14 A. Uh-huh.

15 Q. Is that the same answer, you don't know?

16 A. Yes, sir.

17 Q. All right. 536, entry for backhoe and bold,

18 1/28/15, two hours.

19 A. Couldn't tell you that either.

20 Q. All right. Take a look at 540, entry on

21 2/17/15, water irrigation, any idea what that is?

22 A. More than likely it's just a short period of

23 time, and I probably was away from the trailer, and

24 Scott probably turned on the pivot system.

25 Q. Okay. Entry 2/19/15, mowing, soil samples.

1 What kind of soil samples were taken?

2 A. That's when the U of H came out and took the

3 samples for the EIS instead of -- that's all.

4 Q. Okay. Instead of the what?

5 A. Nothing.

6 Q. There was something there. Instead of who?

7 Somebody else was going to take the soil samples?

8 A. No, U of H was collecting their soil samples.

9 Q. 541, next page, there's a column for backhoe

10 and dump truck in March of 2015. What backhoe work was

11 done?

12 A. Probably the loading of the HDF truck.

13 Q. With what?

14 A. I couldn't tell you. I'd have to get refreshed

15 on this.

16 Q. Okay. Same thing with the dump truck that was

17 used for four hours, it looks like, on one of the days.

18 What was the dump truck used for?

19 A. I'd have to get my mind refreshed and find out.

20 Q. Did it have anything to do with moving rocks

21 around?

22 A. No, no.

23 Q. Dirt?

24 A. I just don't want to guess now.

25 Q. Okay. What do you recall ever using a dump

1 truck for on site?
 2 A. I don't.
 3 Q. At all.
 4 A. At this point, no. I mean, I can --
 5 Q. Okay. Just asking. Next page, 542, did AJAR
 6 assist the well drillers?
 7 A. Yeah.
 8 Q. How did they assist them?
 9 A. We supplied them water so that they could run
 10 their rigs. We had to stay there and pay attention to
 11 the well.
 12 Q. What kind of drilling system was used, do you
 13 recall?
 14 A. It's an upright system, runs in the back end of
 15 a truck, large truck.
 16 Q. So is the water used to --
 17 A. Cool.
 18 Q. Cool the bit?
 19 A. Yeah.
 20 Q. And so the water that was used to cool the bit
 21 got spit back up onto the ground?
 22 A. Yeah, you had some of that coming back up.
 23 Q. Did you see any of that run off anywhere, the
 24 water that was used?
 25 A. No, we contained it.

1 Q. How did you contain it?
 2 A. With small berms that we built around the well
 3 site -- that the well drillers built around the well
 4 site. They used sandbags to contain the water.
 5 Q. How long did they leave the sandbags in place
 6 after they finished drilling?
 7 A. They were finished with the well, they were
 8 gone.
 9 Q. Had the water disappeared at that point?
 10 A. Oh, yeah.
 11 Q. Okay. I don't know if I've asked you about 544
 12 yet. I don't think I have, right? I asked about a few
 13 of the others. You see, backhoe, well drilling there?
 14 A. Uh-huh (moves head up and down).
 15 Q. What kind of work would the backhoe --
 16 A. I don't couldn't tell you that either.
 17 Q. Okay. On --
 18 MR. PALOUTZIAN: I think you did ask about
 19 that.
 20 MR. TEBBUTT: Well, I did about some
 21 others. I don't think it was that one.
 22 MR. PALOUTZIAN: I wrote down, 544 and 545,
 23 does not know what the backhoe work was done on 3/25.
 24 BY MR. TEBBUTT:
 25 Q. All right. On 545, the entry for 4/6/15, it

1 says, Move PVC pipe. What was that?
 2 A. PVC pipe that was located within that area
 3 where we had the -- where the fence posts were, and I
 4 wanted to get that out of there, clean that area all up.
 5 Q. So those were the bundles of PVC pipe?
 6 A. Yes, and there was some loose PVC pipe also.
 7 Q. How much of that PVC pipe had been used for the
 8 irrigation system?
 9 A. Had been used or was going to be used?
 10 Q. Had been used.
 11 A. There was probably twice that much there, so
 12 what's there probably represents the other half that
 13 needs to be installed yet.
 14 Q. Okay. I want to ask you some more questions
 15 about -- have we looked at Exhibit 22, your declaration?
 16 A. Yes, we have.
 17 Q. Do you have that in front of you?
 18 A. Yeah. That's the one I marked.
 19 Q. All right. Don't do that again.
 20 A. Yep.
 21 Q. Paragraph 13, it says, I continue to gather
 22 various materials that were spread out over the property
 23 when construction was halted.
 24 In addition to, you talk about including
 25 irrigation piping and fencing materials. What other

1 materials?
 2 A. That's all.
 3 Q. That's all?
 4 A. Yeah.
 5 Q. Do you remember receiving a specific basically
 6 stop work order on construction activities from Mr.
 7 Datta?
 8 A. Yeah, an email, and then him and I would
 9 communicate on the phone.
 10 Q. Did he help define what things to do and not to
 11 do?
 12 A. Yes, sir.
 13 Q. What did he tell you to do and not to do?
 14 Let's start with the to-dos. What did he tell you to
 15 do, to continue doing or?
 16 A. Continue to produce grass, manage the grass.
 17 Q. Anything else?
 18 A. (Moves head from side to side.)
 19 Q. Okay. What did he tell you not to do?
 20 A. Any additional development of the grass crop
 21 other than what he told me to do.
 22 Q. So does that include laying more irrigation?
 23 A. Yeah.
 24 Q. Or installing waterlines to the water troughs?
 25 A. That's correct.

1 Q. Or installing more water troughs?
2 A. Couldn't do that.

3 Q. Did he tell specifically not to do that stuff?
4 A. I understood that, yes.

5 Q. My question is: Did he tell you specifically
6 not to do that stuff?

7 A. Yes, yes.

8 Q. Okay. Did you have any other lists of things,
9 that you said, Can I do this or can I not do this, other
10 than the things I've mentioned?

11 A. No, he was very clear. I understood what he
12 wanted to do.

13 MR. TEBBUTT: I think we're going to break
14 for the rest of the day.

15 MR. PALOUTZIAN: All right.

16 MR. TEBBUTT: We'll pick up in the morning.
17 THE COURT REPORTER: Reading and signing?

18 MR. PALOUTZIAN: Yes.

19 (Concluded at approximately 5:22 p.m., June
20 13, 2016.)

21 * * * * *

1 I, JAMES J. GARMATZ, VOLUME 1, hereby certify that I
2 have read the foregoing typewritten pages 1 through 133,
3 inclusive, and corrections, if any, were noted by me,
4 and the same is now a true and correct transcript of my
5 testimony.

6 DATED: Koloa, Hawaii _____
7

8 _____
9
10 _____
11 JAMES J. GARMATZ

12
13
14 Signed before me this _____
15 day of _____ 2016.

16
17 _____
18 _____
19
20 Friends of Mahaulepu, Inc. vs. Hawaii Dairy Farms, LLC;
21 Civil No. 1:15-cv-00205-LMK-KJM; Deposition taken on
22 June 13, 2016, by Terri R. Hanson, RPR, CSR 482.
23
24
25

1 STATE OF HAWAII)
2) ss.
3 COUNTY OF KAUAI)

4 I, TERRI R. HANSON, RPR, CSR 482, do hereby
5 certify:

6 That on Monday, June 13, 2016, at 9:02 a.m.
7 appeared before me JAMES J. GARMATZ, VOLUME 1, the
8 witness whose deposition is contained herein; that prior
9 to being examined, the witness was by me duly sworn;

10 That pursuant to Rule 30(e) of the Hawaii Rules
11 of Civil Procedure, a request for an opportunity to
12 review and make changes to this transcript:

13 ___X___ Was made by the deponent or a party (and/or their
14 attorney) prior to the completion of the deposition.
15 ___ Was **not** made by the deponent or a party (and/or their
16 attorney) prior to the completion of the deposition.
17 ___ Was waived.

18 That the foregoing represents, to the best of my
19 ability, a full, true and correct transcript of said
20 deposition.

21 I further certify that I am not an attorney for
22 any of the parties hereto, nor in any way concerned with
23 the cause.

24 This 135-page Deposition of James J. Garmatz,
25 Volume 1, dated June 13, 2016, was subscribed before me
this 23rd day of June, 2016, in Lihue, Hawaii.

26 _____
27 TERRI R. HANSON, CSR 482
28 Registered Professional Reporter

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE DISTRICT OF HAWAII

3 -----)

4 FRIENDS OF MAHAULEPU, INC.,) CIVIL NO.

5 Hawaii non-profit corporation,) 1:15-cv-00205-
6 Plaintiff,) LMK-KJM

7 vs.)

8 HAWAII DAIRY FARMS, LLC, a)

9 Delaware Limited Liability)

10 Company; ULUPONO INITIATIVE, LLC;)

11 a Delaware Limited Liability)

12 Company; MAHAULEPU FARMS, LLC; a)

13 Delaware Limited Liability)

14 Company,)

15 Defendants.)

16 -----)

17 DEPOSITION OF JAMES J. GARMATZ,
18 VOLUME 2,

19 Taken on behalf of Plaintiff at Sheraton Kauai Resort,
20 2440 Hoonani Road, Koloa, Hawaii 96756, commencing at
21 8:35 a.m. on June 14, 2016, pursuant to Notice.

22 REPORTED BY:

23 TERRI R. HANSON, CSR 482

24 Registered Professional Reporter

25

APPEARANCES

For Plaintiff:

CHARLES M. TEBBUTT, ESQ.

SARAH A. MATSUMOTO, ESQ.

Law Offices of

Charles M. Tebbutt, PC

941 Lawrence Street

Eugene, Oregon 97401

For Defendants:

DIRK B. PALOUTZIAN, ESQ.

Baker, Manock & Jensen, PC

Suite 421

5260 North Palm Avenue

Fresno, California 93704-2209

Also Present:

Bridget Hammerquist

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I N D E X

EXAMINATION BY

Mr. Tebbutt (continued)

EXHIBITS FOR IDENTIFICATION

Deposition Exhibit No. 4A

Diagram.

Deposition Exhibit No. 23

Letter, United States Department of the

Interior. FOM_001028 - 001033

Deposition Exhibit No. 24

Results of Analyses, Report of Analytical

Results. HDF00011 and HDF000647

Deposition Exhibit No. 25

Letter, February 2, 2014. HDF-PROD2-000377

Deposition Exhibit No. 26

Letter, June 1, 2016.

PAGE

139

187

196

199

230

230

25

1 WHEREUPON, the following proceedings were duly
2 had:

3 JAMES J. GARMATZ,
4 after having been first duly sworn,
5 was examined and testified as follows:
6

7 EXAMINATION

8 BY MR. TEBBUTT:

9 Q. Good morning, Mr. Garmatz.

10 A. Good morning.

11 Q. We are back on the record, in both your
12 individual and your 30(b)(6) deposition continuing from
13 yesterday. Do you understand that?

14 A. Yes, sir.

15 Q. And you're still under oath.

16 A. Yes, sir.

17 Q. Okay. Today I just want to ask you a few
18 questions -- well, about a number of topics. So let's
19 just start with, in 2014, did a number of workers come
20 from New Zealand to work on the HDF site?

21 A. Yes.

22 Q. How many?

23 A. Eight to 10 depending on which time.

24 Q. Okay. And did HDF arrange for their work visas
25

1 to come to work at HDF?

2 A. No.

3 Q. Did HDF pay for their lodging while they were
4 here?

5 A. Yes.

6 Q. Okay. And so HDF arranged housing for them
7 while they were here?

8 A. Correct, yes.

9 Q. And what did those -- you said 8 to 10 people?
10 A. (Moves head up and down.)

11 Q. What did those 8 to 10 people do? Well, first
12 of all. Let me back up.

13 Approximately when did they arrive?

14 A. First part of February of 2014.

15 Q. Okay. And how long did they stay?

16 A. Stayed until middle part of May. The last --
17 the 15th of May and the 30th of May.

18 Q. Okay. Was that about when you got the stop
19 work order from Mr. Datta or was it before that that
20 they left?

21 A. It was that time.

22 Q. Okay. And during that three or so month
23 period, what did they do?

24 A. Well, they manufactured all the water troughs,
25 they constructed the water pads that the water troughs

1 go on, they installed some of the water trough
 2 waterlines, they built both pivots, No. 1 and No. 2,
 3 they installed the waterline in Pivot No. 2, partially
 4 installed the waterline in No. 1, they installed the
 5 water trough -- excuse me -- the water -- the pivot
 6 bridges.

7 Q. Anything else you can think of?

8 A. They helped in the unloading of some of the
 9 containers of equipment that had been received, they put
 10 together the pivot bridges, and they made sure that the
 11 No. 1 pivot was functional before they left.

12 Q. What do you mean by that?

13 A. We ran water through it, we made sure it moved,
 14 we made sure that the electronics was correct, just made
 15 sure that it was workable.

16 Q. Okay. Pivot 1 is operating now?

17 A. I need to change that 'cause you and I are
 18 opposite.

19 Q. Okay.

20 A. I call the top pivot No. 1.

21 Q. Okay.

22 A. Pivot No. 2 is the lower one.

23 Q. So you call 2 --

24 A. (Indicating.)

25 Q. -- the northern most one, correct? Even though

1 the map that we have --

2 A. No.

3 Q. Just a second. Let me just clear the record
 4 up. Exhibit 4 is the map that we talked about, and it
 5 says Irrigation Pivot No. 1 on the more northerly of the
 6 two pivots, and the southerly is Pivot 2. But you
 7 referred to -- when you're testifying now, you're
 8 referring to Pivot 1 as Pivot 2 and Pivot 2 as Pivot 1,
 9 correct?

10 A. No, sir. It's exactly like you got on the map.
 11 It's Pivot Irrigation No. 1 is the top pivot and Pivot
 12 No. 2 is the bottom pivot.

13 Q. Oh, so we're correct then?

14 A. Yes.

15 Q. Okay. I just wanted to clarify that.

16 A. I remembered it different.

17 Q. All right. So I'll just ask you this: Is
 18 Pivot 1 operating now?

19 A. Yeah.

20 Q. It's functional? It's operating? It's --
 21 you're using it for irrigation purposes?

22 A. Uh-huh (moves head up and down).

23 Q. Same with pivot 2?

24 A. No.

25 Q. It doesn't have water to it?

1 A. It doesn't have water to it.

2 Q. Okay. So your question earlier about -- or

3 your statement earlier about getting water to Pivot 2,

4 is that what they tested to make sure it was running

5 properly?

6 A. No, never did anything with this one but just

7 install it and put it in place.

8 Q. Okay. So has Pivot 2 operated at all?

9 A. No.

10 Q. Have you done any test runs with Pivot 2?

11 A. No.

12 Q. Okay. So there's no water to Pivot 2 right

13 now?

14 A. No, no.

15 Q. Is that correct?

16 A. That's correct.

17 Q. Okay. Where were the water troughs

18 manufactured?

19 A. We manufactured the water troughs in the

20 begass-house. The begass-house.

21 Q. Is that the old sugarcane factory?

22 A. That's correct.

23 Q. Okay. So right near the proposed dairy farm

24 site but not on it?

25 A. Correct.

1 Q. Okay. And where were the water pads

2 manufactured?

3 MR. PALOUTZIAN: Misstates testimony. Go

4 ahead.

5 THE WITNESS: The water pads were

6 constructed --

7 BY MR. TEBBUTT:

8 Q. Constructed.

9 A. No, no. The water pads were prepared on site

10 with the hauling in of the material that is stored

11 within the farm to have a level pad of --

12 Q. Right. Okay. And so what's the name of the

13 New Zealand group that did this?

14 A. Effluent and Irrigation.

15 Q. Okay. So they manufactured the water troughs

16 to the begass-house, correct?

17 A. Yes.

18 Q. B-e-g-a-s-s?

19 A. Yes.

20 Q. They then constructed the water pads on which

21 the troughs would be placed, correct?

22 A. Yes.

23 Q. And --

24 A. I think a better word instead of construction

25 would be developed, because there was no construction

1 involved. We just hauled the equipment -- the material
2 in and leveled it.

3 Q. I see. So it was laying limestone and what
4 other materials you used to create the water pads in
5 place?

6 A. Correct.

7 Q. And once they manufactured the water troughs,
8 did they install them?

9 A. Yes.

10 Q. And I think we discussed yesterday, it was
11 about 160 of them that were installed, correct?

12 A. Correct.

13 Q. Had the other remaining ones that would be
14 needed for the proposed dairy site, have they been
15 constructed, too?

16 A. No.

17 Q. Are there any water troughs that have been
18 constructed sitting around that haven't been installed?

19 A. Yes.

20 Q. How many?

21 A. Probably 30 approximately.

22 Q. The pivots, were they constructed in place?

23 A. Define in place.

24 Q. On site.

25 A. Yes, sir.

1 Q. Okay. So close to where they were going to be
2 used?

3 A. Yes.

4 Q. Was there any preparation of the work areas
5 where the pivots -- I'll say assembled, is that a proper
6 term or?

7 A. No.

8 Q. Constructed a better term?

9 A. No.

10 Q. What's the term we should use?

11 A. Placed together 'cause that's what you do, is
12 you place them -- you put 'em together.

13 Q. Put 'em together. That's why I said assembled.

14 A. Yeah.

15 Q. Is assembled --

16 A. Assembled, yeah, that's a good word.

17 Q. Is that a good word?

18 A. Yeah.

19 Q. Okay. So were there any assembly areas created
20 for the workers when they assembled the pivots?

21 A. No, there wasn't, because you had to go -- each
22 station was different.

23 Q. Okay. Did you mow the areas where --

24 A. No.

25 Q. Just a minute. Let me finish my question,

1 please.
 2 A. Okay.
 3 Q. Just like yesterday. Let's not talk over each
 4 other, please.

5 Did you mow any areas to make it easier to
 6 assemble the pivots?

7 A. No.

8 Q. Did you disturb any ground in any other way --
 9 A. No.

10 Q. Okay. Again, you've got to let me finish my
 11 question.

12 MR. PALOUTZIAN: I think he thought you
 13 were done.

14 MR. TEBBUTT: I understand that, but
 15 sometimes it doesn't happen that way.

16 BY MR. TEBBUTT:

17 Q. So were there any other ground preparations
 18 that were done to assemble the pivots?

19 A. No.

20 Q. So this is the group, you said, that installed
 21 the waterline to Pivot 2?

22 A. Which group?

23 Q. The E&I group.

24 A. Correct, yes.

25 Q. And partially -- you testified earlier

1 partially installed the waterlines to Pivot 1, isn't it
 2 the other way around?

3 A. Correct.

4 Q. So they partially installed the waterline to
 5 Pivot 2?

6 A. Correct, yes.

7 Q. And they did install the waterline to P1,
 8 correct?

9 A. Correct.

10 Q. 'Cause P1 has been operating since that time,
 11 correct?

12 A. Correct.

13 Q. While E&I was here, were there any alterations
 14 to the pivot tracks made while Pivot 1 was operational?
 15 MR. PALOUTZIAN: Object, vague and
 16 ambiguous.

17 THE WITNESS: Rephrase your question.

18 BY MR. TEBBUTT:

19 Q. Yes, were there any alterations to the tracks
 20 over which the pivot moved?

21 A. Define alterations.

22 Q. Any kind of modifications to the pivot track,
 23 to the ground itself.

24 A. While E&I was here?

25 Q. Correct.

1 A. No.

2 Q. Okay. There were some afterwards, correct?

3 A. No, there wasn't.

4 Q. The Pivot 1 got stuck at various times, didn't

5 it?

6 A. Oh, yeah.

7 Q. So that's what I'm referring to about

8 alterations to the ground to make the pivot track run

9 better.

10 A. Okay. Yes. In that case, yes.

11 Q. Okay. How many times have the pivot tracks

12 been modified at Pivot 1?

13 A. Numerous times.

14 Q. Okay. And more than 10?

15 A. Yes.

16 Q. More than 20?

17 A. Yes.

18 Q. More than 30?

19 A. No.

20 Q. Okay. What types of modifications have been

21 made to the pivot tracks?

22 A. Placing of rocks found within the fields into

23 the bottoms of the pivot tracks.

24 Q. Why?

25 A. To improve the hardness of the ground

1 underneath the tire tracks.

2 Q. Are you done with your answer?

3 A. Yes.

4 Q. Okay. And is that because the pivot tracks

5 got -- or the wheels of the pivot got stuck?

6 A. That's correct.

7 Q. Any other reason why you had to do that, or you

8 chose to do that?

9 A. Initially, before the pivot ran, we should have

10 compacted that ground and altered it, but we didn't do

11 it. So that caused the pivot tracks to be made. Since

12 that time, we've improved our working -- our practices

13 on that, and it shouldn't happen no more.

14 Q. Have you compacted some ground in the field

15 where Pivot 1 is located?

16 A. Yes, sir.

17 Q. How much of the land?

18 A. Probably a 13- to 16-inch width and the length

19 of the wheel track within the working area of Pivot No.

20 1, present working area of Pivot No. 1.

21 Q. For all the tire tracks?

22 A. No, not all.

23 Q. Okay. How many?

24 A. One, two, three, four, five, six. I believe,

25 I'm up to seven. Number seven now.

1 Q. And how many tracks are there?
 2 A. Ten.
 3 Q. And is part of your plan to compact the other
 4 three tracks as well?
 5 A. That's my plan.
 6 Q. And when you have compacted the seven tracks
 7 thus far, have you removed rocks that were in -- that
 8 you had placed in there?
 9 A. No.
 10 Q. Okay. And let me just clarify the record. Had
 11 you placed rocks in those seven pivot tracks that have
 12 been compacted?
 13 A. Yes.
 14 Q. In all seven?
 15 A. No.
 16 Q. How many of them?
 17 A. Just three of 'em.
 18 Q. Okay. I'm going to show you, again, Exhibit 4.
 19 Starting with the most outside track -- I assume that
 20 the tracks run the full circumference of the area,
 21 correct?
 22 A. That's correct.
 23 Q. So the outside one would have the largest
 24 circumference and the inside would have the shortest?
 25 A. That's correct.

1 Q. Did you start with the longest track or the
 2 shortest track for the seven that you've done?
 3 A. Shortest.
 4 Q. So you started from the inside out?
 5 A. Correct.
 6 Q. Okay. And from the inside out, let's just
 7 imaginarily for the time being call the tracks 1 through
 8 10. One being the shortest circumference.
 9 A. Correct.
 10 Q. Are there rocks in the first track?
 11 A. No.
 12 Q. Second track?
 13 A. No.
 14 Q. Third track?
 15 A. No.
 16 Q. Fourth track?
 17 A. Yes.
 18 Q. How many rocks did you place in the fourth
 19 track?
 20 A. Numerous.
 21 Q. More than 20?
 22 A. Yes.
 23 Q. More than 50?
 24 A. Yes.
 25 Q. More than a hundred?

1 A. Yes.

2 Q. More than 200?

3 A. Yes. Thousands.

4 Q. Thousands in track two.

5 A. Track.

6 Q. Well, what's -- I'm sorry. Track four. What
7 size rocks were placed in there?

8 A. Do you mean anything --

9 Q. Use your hands and show me the smallest one and
10 the largest one.

11 A. Smallest one.

12 Q. Would be about fist size?

13 A. Yeah.

14 Q. Okay. And the largest.

15 A. And the largest one, anything that I could
16 handle. Anything that I could lift.

17 Q. So up to about a hundred pounds?

18 A. Yes.

19 Q. Is that a fair assessment?

20 A. Yes, very.

21 Q. Okay. Having moved a lot of rocks in my day, I
22 can gather that.

23 A. Yeah.

24 Q. All right. And then anything in between?

25 A. Yes.

1 Q. Just whatever you found on the site?

2 A. Yes.

3 Q. Okay. So that's pivot four. When was that
4 done?

5 A. Early -- no, from April of '14 through January
6 of '15.

7 Q. Okay. And then pivot five?

8 A. No.

9 Q. You haven't done any in pivot five?

10 A. No.

11 Q. Or track five we're talking. Track six?

12 A. Yes.

13 Q. Okay. And how many -- when did you start
14 putting rocks in track six?

15 A. Same time, same time we talked about above.

16 Q. Okay. Okay. And is it about the same number?
17 Hundreds or thousands of rocks?

18 A. Yeah.

19 Q. And all the same size?

20 A. Yes. Same process.

21 Q. That we talked about?

22 A. Same process, yes.

23 Q. Okay. And track seven?

24 A. Small portion of track seven.

25 Q. Okay.

1 A. Let's just say a hundred foot of track seven.
 2 Q. Okay. So we have rocks -- a significant number
 3 of rocks in four and six?
 4 A. Right.
 5 Q. And a small number in seven?
 6 A. Correct.
 7 Q. Are you done with seven, adding rocks?
 8 A. Yes.
 9 Q. Okay. And do you need to add -- have you added
 10 rocks to 8, 9 or 10?
 11 A. No.
 12 Q. And you don't think you do?
 13 A. No.
 14 Q. Okay. And it's 8, 9, and 10 that haven't been
 15 compacted yet, correct?
 16 A. That's correct.
 17 Q. When did you do the compacting on track one?
 18 A. April of '14. That's the first one I did.
 19 Q. Okay. Is that the rolling machine that's
 20 referred to in the invoices?
 21 A. No, sir.
 22 Q. What did you use to compact the tracks?
 23 A. I purchased calcium finds from Glover and
 24 deposited them within the track.
 25 Q. And what did you use to compact the tracks?

1 A. Tractor tire.
 2 Q. Is that it?
 3 A. Uh-huh (moves head up and down).
 4 Q. Yes?
 5 A. Yes, sir.
 6 Q. Okay. So track two, when was that compacted?
 7 A. After No. 1 was complete, which was within
 8 weeks. Within a couple weeks after No. 1 was complete.
 9 Q. So that was approximately what month?
 10 A. May.
 11 Q. Of 2014?
 12 A. May of '14.
 13 Q. And then track three, when was that compacted?
 14 A. June.
 15 Q. Of 2014?
 16 A. Yes, sir.
 17 Q. Track four, when would that have been
 18 compacted?
 19 A. We did -- we did No. 1 and No. 4 in conjunction
 20 with each other because they were the worst ones. So
 21 No. 4 was scattered all the way from April all the way
 22 till late in the year, 'cause it was the worst one.
 23 Q. Okay. Track five, when was that compacted?
 24 A. Late in the year.
 25 Q. Of 2014?

1 A. Yeah.

2 Q. So October, November?

3 A. October. October.

4 Q. Okay. Track six, when was that compacted?

5 A. That was November when it started raining.

6 Q. November of '14?

7 A. Right.

8 Q. And track seven, when was that compacted?

9 A. In conjunction with six. Same time.

10 Q. Okay. So when it's rained on the site, I

11 assume you've seen some pretty heavy rains?

12 A. Uh-huh (moves head up and down).

13 Q. What do you think the heaviest rainfall is that

14 you've observed on the site since you've been there?

15 MR. PALOUTZIAN: Objection, calls for

16 speculation, lacks foundation. It's overbroad. Go

17 ahead.

18 THE WITNESS: Seven-inch rainstorm the day

19 after Thanksgiving of '13.

20 BY MR. TEBBUTT:

21 Q. Was that a 24-hour event?

22 A. No, it was an overnight event.

23 Q. So less than 24 hours, seven inches of rain?

24 A. Twelve, about 12 hours, yeah.

25 Q. Twelve hours.

1 A. Let's say 12 to 18 hours 'cause -- yeah, 12 to

2 18 hours.

3 Q. Okay. And how much -- and how did you know

4 that there was seven inches of rain that day?

5 A. We've got a weather data on our farm. And then

6 Grove Farms also has a weather data machine on our farm

7 also. Not a machine but an instrument.

8 Q. So there's two difference weather stations on

9 that site?

10 A. Uh-huh (moves head up and down).

11 Q. Is that yes?

12 A. Yes.

13 Q. And do you operate them both?

14 A. No.

15 Q. You operate just one?

16 A. The HDF weather station, yes. I don't operate

17 it. It operates itself.

18 Q. Okay. And has that been functioning the entire

19 time you've been there?

20 A. Yes, sir.

21 Q. And so how does that record weather events?

22 A. Electronically through satellite. It delivers

23 the information to Ag Hub in New Zealand. Ag Hub sends

24 it back to me via computer.

25 Q. Okay. And how often does Ag Hub sent it back

1 to you?

2 A. Instantaneously.

3 Q. So you get it every day?

4 A. Yes.

5 Q. You get the feed for what's happened every day?

6 A. Yes.

7 Q. Does this aid you in determining how much to

8 irrigate?

9 A. Yes, it's what I use.

10 Q. During the seven-inch rain event after

11 Thanksgiving in 2014 --

12 A. '13.

13 Q. '13, sorry. Thank you. Did you observe the

14 water flow through the ditches on the site?

15 MR. PALOUTZIAN: The question is overbroad

16 and vague as to time. Go ahead.

17 THE WITNESS: Just the lower ditches is

18 all. I didn't observe the upper ditches.

19 BY MR. TEBBUTT:

20 Q. Okay. When you refer to the lower ditches,

21 what lower ditches are you referring to? Let's refer to

22 Exhibit 4.

23 A. This one and this one (indicating).

24 Q. So the main ditch and the center ditch?

25 A. Yes, yeah. Where it comes together.

1 Q. Okay. So you went down to off site where it --

2 there's a confluence of the two, is that correct?

3 A. Yeah, yeah.

4 Q. And was there flooding in -- over the banks of

5 either of those ditches?

6 A. There was flooding right here (indicating).

7 Okay.

8 Q. At the bottom of the taro farm field?

9 A. Right, right.

10 Q. The bottom, the southeast corner?

11 A. Yeah. This takes a real tight cut right there,

12 that cut at that turn.

13 Q. Okay.

14 A. And there's a bridge that sits right here

15 (indicating).

16 Q. Right.

17 A. And that bridge was full of silt that hadn't

18 been properly maintained. This bridge is off property

19 now, okay?

20 Q. Okay.

21 A. And Grove Farms is responsible for that bridge,

22 and they had not cleaned the silt out of that. And they

23 arrived on the morning after Thanksgiving and cleaned

24 the silt out from underneath that bridge and all through

25 this area, and the water began to flow, and everything

1 above -- the surface water that I saw right here at that
2 area went down immediately.

3 Q. Okay. And so the flooded area -- actually that
4 bridge that you're referring to, that's where we took
5 one of the samples during the Rule 34 inspection,
6 correct?

7 A. Yes, sir.

8 Q. Okay. And during the time of the Rule 34
9 inspection, you said that property was not on site,
10 correct?

11 A. That's correct.

12 Q. But in Exhibit 4 it is shown as being on site,
13 correct?

14 A. Yeah, this map is out of date.

15 Q. Okay. So did the property line boundaries
16 change then since this map was created?

17 MR. TEBBUTT: Objection, calls for
18 speculation, lacks foundation. Go ahead.

19 THE WITNESS: Yes.

20 BY MR. TEBBUTT:

21 Q. Okay. And when was the property line boundary
22 changed?

23 MR. PALOUTZIAN: Same objections.

24 THE WITNESS: July or August of '15.

25 MR. TEBBUTT: Okay. Obviously the witness

1 knows the answers, so I don't know if your objection is
2 proper.

3 MR. PALOUTZIAN: It's not for you to
4 decide, I don't think.

5 BY MR. TEBBUTT:

6 Q. Why was the property boundary line changed?

7 MR. PALOUTZIAN: Same objections.

8 THE WITNESS: Request from Grove Farms.

9 BY MR. TEBBUTT:

10 Q. From whom at Grove Farms?

11 A. Arryl Kaneshiro, Dave Hinazumi.

12 Q. And were those --

13 A. Warren Haruki.

14 Q. Okay. Sorry. Are there other people?

15 A. No.

16 Q. Were those requests made to you?

17 A. Yeah.

18 Q. How? By phone or in person?

19 A. Phone, by phone.

20 Q. Okay. And what was the reason for the request
21 to change the site boundaries?

22 MR. PALOUTZIAN: Calls for speculation,
23 lacks foundation. Go ahead.

24 THE WITNESS: Mr. Haruki wanted an

25 eight-foot barrier around the boundary in the placement

1 of the fencing so that there could be a path -- pathway
 2 to walk around the facility, a maintained pathway around
 3 the boundary of the facility.

4 BY MR. TEBBUTT:

5 Q. When you say the facility, you're talking about
 6 the --

7 A. Entire.

8 Q. -- proposed HDF dairy?

9 A. The entire facility, yes.

10 Q. So the whole boundary was moved in
 11 approximately eight feet, the whole perimeter?

12 A. Some boundaries were -- most boundaries were
 13 done at eight foot. There were some boundaries done
 14 more than that.

15 Q. Okay. To allow access depending on --

16 A. There you go. There you go.

17 Q. -- the topography of the area?

18 A. Yes.

19 Q. So I'm trying to recall. The original acreage
 20 of the site was some 586, is that correct?

21 A. That's correct.

22 Q. So how much did the boundary change affect the
 23 amount of property that the dairy is now leasing from
 24 Grove Farm?

25 MR. PALOUTZIAN: Misstates the evidence.

1 Go ahead.

2 THE WITNESS: I could not correctly quote
 3 you that number because I'd have to look it up for you
 4 at this point.

5 BY MR. TEBBUTT:

6 Q. Do you have that somewhere, that number?

7 A. Would have it, yes.

8 Q. Where would you have it?

9 A. In the latest WMP plan.

10 Q. And when was the latest WMP plan created?

11 A. Within the last 30 days to coincide with the
 12 EIS.

13 Q. So was that submitted with the EIS?

14 A. No, it was submitted separately.

15 Q. So that was submitted to DOH within the last 30
 16 days?

17 A. Correct.

18 Q. And that has the new correct acreage amount in
 19 it?

20 A. Correct.

21 Q. Do you remember about how many acres it reduced
 22 the overall property?

23 A. Between 15 and 16 acres.

24 One thing that I want to mention there that I
 25 think is important along with that, is those changes

1 also took into effect the 35-foot barrier that we were
 2 going to keep with -- out of the fence lines to the
 3 drains or the ditches. We've got an area on each side
 4 of the ditches that goes out 35 feet.

5 Q. What do you mean an area?

6 A. We measure 35 feet away from the bank, and that
 7 will be the first existing fence line, which means
 8 there's a boundary or a -- let me think of a good word.
 9 Barrier or safety zone or setback. Thirty-five-foot
 10 setback from all drains. And this new acreage takes
 11 into consideration that 35-foot setback because that's
 12 not going to be a part of the property that we'll be
 13 able to farm because it will be out of the fence line.

14 Q. So then will you -- HDF will not be leasing
 15 that land? Is that -- will that be Grove Farm land or
 16 will that be HDF-leased land?

17 A. That would be HDF's land to care for per NRC
 18 requirements.

19 Q. What requirements are you referring to?

20 A. The planting of native plants, the maintenance
 21 of the grass, the maintenance of the sides -- the bank
 22 sides, the size of the drains or the ditches. Just
 23 overall taking care of them. Keeping them in --

24 Q. Okay. Is there a particular regulation or
 25 guidance that you're referring to?

1 A. NRCS has a plan -- has a guidance within their
 2 plan that indicates that we should have a 35-foot
 3 setback on all their -- on all blue-line drains.

4 Q. Okay. Do you remember the number of that
 5 guideline?

6 A. No, sir. No, sir.

7 Q. Okay. So asking you some more questions of
 8 Exhibit 4 here again. Will there be -- you have already
 9 identified ditch number -- a number of ditches that you
 10 handwrote onto the map, and we discussed that yesterday.
 11 Will there be a 35-foot setback on either side of No. 3
 12 ditch?

13 A. Yes, yes.

14 Q. Did we have a name for the ditch that is in the
 15 upper right-hand corner?

16 A. No, no.

17 Q. We don't, okay. So that's the one on the east
 18 side of Pivot 1, the unnamed ditch, correct?

19 A. Yes.

20 Q. All right. Just for purposes of this
 21 deposition, is it okay if I write in here unnamed ditch
 22 for purposes of identifying this one?

23 A. Yes.

24 Q. Okay. Will there be a 35-foot setback on
 25 either side of the unnamed ditch?

1 A. Yes.

2 Q. And similarly will there be the 35-foot setback

3 on either side of the center ditch?

4 A. Yes.

5 Q. And same question, will there be a 35-foot

6 setback on either side of the main ditch?

7 A. Yes.

8 Q. Will there be a 35-foot setback on either side

9 of No. 6 ditch?

10 A. Yes.

11 Q. And will there be a 35-foot setback on the

12 southwestern ditch that runs from the pumping station

13 into the main ditch?

14 A. Yes, sir.

15 Q. Do you have a name for that ditch? I think you

16 mentioned one yesterday, and I don't think we --

17 A. We call it the Waita ditch.

18 Q. Okay. Is it okay if I write on here Waita

19 ditch?

20 A. Uh-huh (moves head up and down).

21 Q. Okay. And how do you spell Waita?

22 A. W-a-i-t-a.

23 Q. Okay. Are there any other places on the site

24 that I have not asked you about where there will be

25 35-foot setbacks?

1 A. Up here (indicating).

2 Q. Okay.

3 A. And up here (indicating).

4 Q. Okay. So the two that you're referring to are

5 the ones we discussed yesterday that come from off the

6 site and then converge where you have the circle right

7 below where No. 1 is indicated on Pivot 1, correct?

8 A. Yes.

9 Q. Okay. Any other places?

10 A. As this ditch comes down in the final plans.

11 Q. And this is the unnamed ditch we're talking

12 about right now.

13 A. Yes, yes. It will be fed -- it will be

14 deadheaded here and fed into this drain around here and

15 coming to here (indicating).

16 Q. So it will be rerouted so that it will be

17 hydrologically diverted to the center ditch?

18 A. Correct, that's in the plans.

19 Q. That's in the plans.

20 A. It's not been completed or done with or

21 anything done with it yet. And there'll be a 35-foot

22 setback from here and all the way into here

23 (indicating).

24 Q. Okay. When you said to a ditch over here, what

25 ditch exists there now?

1 A. There's a large swale there right now.

2 Q. Okay. 'Cause I asked you about as far as on

3 the property yesterday, and we --

4 A. I'm sorry.

5 Q. Just a minute, just a minute. And we didn't

6 get that answer. So this is a new swale from yesterday,

7 correct?

8 A. Yes, yes, I did --

9 Q. I would like you with my blue pen to draw that

10 existing swale, please?

11 A. (Writing.)

12 Q. Okay. And do you have a name for that?

13 A. No, never named it.

14 Q. How about if I just write in here swale?

15 A. It would be great.

16 Q. Okay?

17 A. Yes, sir.

18 Q. Because we don't have that anywhere else on the

19 map. So it's the only swale.

20 Are there other swales that you can remember

21 today that you didn't remember yesterday?

22 A. There's a low spot that runs the edge of this

23 property up and down determining -- determined by the

24 actual elevation of this ground. Sometimes it's deep.

25 Sometimes it's level. Sometimes it's deeper.

1 Q. Okay.

2 A. I would go ahead and list that if we're talking

3 about swales.

4 Q. All right. Why don't you take my blue pen and

5 right that one in?

6 A. (Writing.)

7 Q. Okay. Why don't we call that -- let's rename

8 this one Swale 1. Can we just put a one next to that?

9 A. (Writing.)

10 Q. And call that Swale 2.

11 A. (Writing.)

12 Q. Okay. And Swale 2, is that still within the

13 HDF boundary after the lot line adjustment, I'll call

14 it?

15 A. Some yes and some no.

16 Q. Okay. And eventually Swale 2 converges with

17 the center ditch, correct?

18 A. That's correct.

19 Q. And let me ask you some questions about the

20 storm event in November of 2013. Did you go over and

21 look at the whole site after that storm event?

22 A. Yeah. The following Saturday afternoon.

23 Q. So two days after Thanksgiving?

24 A. Yes.

25 Q. Okay. And the storm had happened on Friday?

1 A. Friday starting at 3:00 a.m. in the morning and
2 rained until noon, and then it rained off and on from
3 noon on till evening, and then it cleared up.

4 Q. Okay. On the day after -- so Thanksgiving
5 night really into Friday, 3:00 a.m., all day Friday
6 mostly?

7 A. Yes.

8 Q. Not quite, but mostly?

9 A. Yeah, yeah.

10 Q. Okay. So did you walk over the whole site then
11 on Saturday?

12 A. Yes.

13 Q. Did you see water in the unnamed ditch on that
14 Saturday?

15 A. No.

16 Q. Did you see water in Swale No. 1?

17 A. Small portions, just small portions.

18 Q. Okay. Did you go to the unnamed ditch?

19 A. Yeah, yeah.

20 Q. Okay. So you saw some amount of water in Swale
21 1?

22 A. Yes.

23 Q. Did you follow Swale 1 to where it converges
24 with the center ditch?

25 A. Swale 1 --

1 MR. PALOUTZIAN: Let me insert a belated
2 objection. I think the question misstates testimony.
3 Go ahead.

4 THE WITNESS: Swale 1 will not be -- is not
5 built at this point or constructed or developed at this
6 point.

7 BY MR. TEBBUTT:

8 Q. Okay. So you think there is an end point of
9 Swale 1?

10 A. Yeah, it's right here, right there in the
11 middle of that field (indicating). Like we talked
12 yesterday. We referred to that yesterday.

13 Q. So the unnamed ditch and Swale 1 then converge
14 at that end point?

15 A. No. Swale 1 doesn't exist at this point. It's
16 just -- we're going to turn this into a ditch.

17 Q. Okay.

18 A. It's just a low area right now.

19 Q. Okay.

20 A. And this unnamed ditch comes down here and
21 dumps right in the middle this field (indicating).

22 Q. Okay. So Swale 1 has an end point similar to
23 what the unnamed ditch has right now?

24 A. Well, it comes and ultimately will drain into
25 this (indicating).

1 Q. All right. But I'm asking right now, is there
2 a swale right now where you drew that line?

3 A. Yes, yeah. But it -- go ahead.

4 Q. So when you saw water in Swale 1 on the day
5 after or two days after Thanksgiving in November 2013,
6 where did you see water in Swale 1?

7 MR. PALOUTZIAN: Misstates testimony. Go
8 ahead.

9 THE WITNESS: Just right here in this area
10 right here (indicating).

11 BY MR. TEBBUTT:

12 Q. Okay. So can you put a bracket or maybe a
13 paren on either side where you saw water?

14 A. (Writing.)

15 Q. Okay. And did you follow -- did you look at
16 the end point of where you saw the water to see if it
17 continued anywhere?

18 A. Yeah. It continued on down this line right
19 here (indicating).

20 Q. The water did continue down the line?

21 A. Yeah.

22 Q. And did it reach the center ditch?

23 A. Yes.

24 Q. Okay. So on that day the water in Swale 1 did
25 continue down and it discharged into the center ditch?

1 A. Correct.

2 Q. Okay. So the second bracket then isn't really
3 correct then, is it? Because you said there was water
4 all the way through there.

5 A. There was water collecting here because this is
6 a low spot right there (indicating).

7 Q. Okay. But there was water flowing the rest of
8 the way through?

9 A. Yeah, yeah.

10 Q. Okay. And did you go up to the small streams
11 that converge near the top of Pivot 1 where we have the
12 circle?

13 A. Yes, sir.

14 Q. And was there water flowing in both portions of
15 those streams?

16 A. No.

17 Q. Was there one flowing in either of them?

18 A. The one coming from the northwest.

19 Q. Okay. And how much water, would you say?

20 A. Two feet. Two feet high, two feet deep; 24
21 inches deep.

22 Q. Okay. Are you good at estimating cubic feet
23 per second flows?

24 A. No.

25 Q. Okay. Or gallons per minute?

1 A. Even worse.

2 Q. All right. Fair enough. There was water

3 flowing though from the northwest ditch to that

4 convergence, correct?

5 A. Correct.

6 Q. Did you see any water coming from the northeast

7 ditch?

8 A. Very, very little.

9 Q. But some?

10 A. Yeah. Very minimal.

11 Q. Okay. How about Ditch 3, did you go -- did you

12 observe Ditch 3?

13 A. Yeah, there was water in that also.

14 Q. How much?

15 A. Probably three feet wide. The problem with

16 that is it would come down here and then this ditch

17 ends. Okay. There's no destination for it to come

18 across here, across this road at present (indicating).

19 So all this water just went shwoo.

20 Q. So it fanned out?

21 A. Yeah.

22 Q. Did it go up across the road?

23 A. No.

24 Q. So it just created a lake basically?

25 A. Right. Right behind here (indicating).

1 Q. How long did it take for that lake that you're

2 referring to to disappear?

3 A. Everything was pretty much gone by Monday.

4 Q. Okay. Did you go back and observe that lake?

5 A. Oh, yeah.

6 Q. And was it completely gone by Monday?

7 A. No, not a hundred percent. I would probably

8 say it was down to less than 10 percent of the volume

9 that I saw initially.

10 Q. All right. Was there still water flowing in

11 the northwest ditch that we talked about?

12 A. Yes, yes.

13 Q. Okay. And that's right next to No. 1 on the

14 map, correct?

15 A. Uh-huh, uh-huh (moves head up and down).

16 Q. Was there still water in Swale No. 1 on the

17 Monday?

18 A. No.

19 Q. So did you see any water flowing in Swale No. 1

20 into the center ditch on Monday?

21 A. Just what was draining out of this one.

22 Q. So there was some that was still draining all

23 the way through and into the center ditch?

24 A. Yeah, yeah. It had eroded a point right here

25 where it was building (indicating). And then it eroded

1 a point, pretty much drained that very same day, that
2 Saturday or gone by Sunday.

3 Q. You know, water has a funny way of doing that,
4 doesn't it?

5 A. Yeah.

6 Q. No. 6 ditch, did you observe water -- or did
7 you observe Ditch 6?

8 A. Yes.

9 Q. And did it have water in it?

10 A. No.

11 Q. None whatsoever?

12 A. None whatsoever.

13 Q. I assume the main ditch had water in it?

14 A. Yes.

15 Q. Did it have a lot of water in it?

16 A. Yeah.

17 Q. How much would you say?

18 A. Probably six feet across and three feet high.

19 Q. Okay.

20 A. Thirty-six inches deep. Yeah, that would be
21 about right.

22 Q. Okay. Where we talked about where the flooding
23 occurred down by the bridge, how much -- how far
24 upstream did it back up?

25 A. It backed into the taro farm.

1 Q. How far into the taro farm?

2 A. It had about a 30-foot radius right inside his
3 gate there.

4 Q. Go ahead and just kind of draw that radius that
5 you talked about.

6 A. (Writing.)

7 Q. So that's the flooding. Could you just put F
8 11/13 there, please? 11/13.

9 A. (Writing.)

10 Q. And there you go. And that would designate the
11 flooding in November of 2013, okay?

12 A. Uh-huh.

13 Q. The Waita ditch, did you observe that ditch?

14 A. No, no.

15 Q. You didn't observe it at all?

16 A. I observed it, yes.

17 Q. Did it have water in it?

18 A. No. Well, the same amount that it always
19 carries.

20 Q. So it does carry water?

21 A. All the time.

22 Q. All right. So there's constant flow there?

23 A. Yes, it's overflow from the dam.

24 Q. All right. But you didn't observe more water
25 in there?

1 A. No.

2 Q. How about Swale No. 2, did you observe water in

3 that? Or, first, did you observe it?

4 A. This one over here (indicating)?

5 Q. Yes, in that same time period, that Saturday.

6 A. Yeah, yeah, yeah.

7 Q. And was there water flowing in that?

8 A. No. No, not flowing, just standing. Standing.

9 It's pretty difficult to flow 'cause there's high spots

10 and low spots along here (indicating).

11 Q. Okay. Did you follow that swale to its

12 confluence with the center ditch?

13 A. Yes.

14 Q. And was there water flowing into the center

15 ditch from that swale, too?

16 A. Yes, yes.

17 Q. How much?

18 A. Oh, a smaller head, probably two-foot wide; 12,

19 13, 14 inches deep.

20 Q. Okay. Since you've been there -- since this

21 event in November 2013, have there been other events

22 where you've observed similar water flows on the site

23 from storm events?

24 MR. PALOUTZIAN: Objection, vague.

25 THE WITNESS: Just one time.

1 BY MR. TEBBUTT:

2 Q. When was that?

3 A. I can't even recall now. It had to have been

4 the winter of '14.

5 Q. The winter of '14. '14-'15?

6 A. '14.

7 Q. Of, well --

8 A. Winter. Let's just say February and March of

9 '14. February or March of '14.

10 Q. Okay. So a couple months after the event you

11 saw in November of 2013?

12 A. Uh-huh (moves head up and down).

13 Q. Okay. Do you remember what the rain amount was

14 then?

15 A. It was like over five inches. Just a little

16 over five inches over about a three-day period.

17 Q. Okay. And did you see similar amounts of water

18 in all the ditches we just talked about?

19 A. Yes.

20 MR. PALOUTZIAN: Objection, vague.

21 THE WITNESS: Yes. Somewhat less.

22 BY MR. TEBBUTT:

23 Q. Somewhat less, okay.

24 A. Yeah.

25 Q. From your weather station information that

1 you've obtained since 2013, how many rain events have
 2 been over five inches?
 3 A. Just those two to my knowledge.
 4 Q. And so the rain events are recorded on a daily
 5 basis, is that correct?
 6 A. Yes, sir. Yes, sir.
 7 Q. So they're summarized on a daily basis?
 8 A. Yeah.
 9 Q. 'Cause it's constant information, right?
 10 A. Every 24 hours.
 11 Q. Every calendar day it's summarize?
 12 A. That's correct.
 13 Q. And does it have information by 60-second
 14 intervals, 30-second intervals?
 15 A. One-minute intervals, but it's recorded on
 16 hourly at the most.
 17 Q. Okay.
 18 A. And daily in the reports.
 19 Q. Okay. But the raw data has it compiled on an
 20 hourly basis?
 21 A. Yes.
 22 Q. Okay.
 23 A. Upon request.
 24 Q. So is that information still available today,
 25 that computer data?

1 A. Yes.
 2 Q. And so whose computer is that located in?
 3 A. Mine.
 4 Q. And is that the same computer that you've had
 5 since you started in 2013?
 6 A. Yes.
 7 Q. Are you going to upgrade that computer?
 8 A. Yes.
 9 Q. When?
 10 A. Very soon.
 11 MR. TEBBUTT: Okay. I'm going to ask that
 12 there be a hold put on the old computer as the
 13 information is transferred so it not be lost in the
 14 transfer in case we need that for some reason.
 15 MR. PALOUTZIAN: Okay.
 16 MR. TEBBUTT: Okay. You agree to do that?
 17 MR. PALOUTZIAN: I do.
 18 THE WITNESS: I need to take a break.
 19 (Break from 9:29 to 9:39.)
 20 BY MR. TEBBUTT:
 21 Q. Just to wrap this up, are there any other
 22 unnamed ditches on the property that you haven't
 23 identified on Exhibit 4?
 24 A. (Writing.)
 25 Q. One more?

1 A. Yeah.

2 Q. Okay. Any others you can think of?

3 A. No.

4 Q. You're sure?

5 A. That's it.

6 Q. Okay. And so the one you just added in, let's

7 call that --

8 A. Let's call it No. 3, 'cause that's how --

9 Q. Well, we already have a No. 3 ditch.

10 A. Okay.

11 Q. All right. Do you have a name for that?

12 A. Un-un (moves head from side to side.)

13 Q. Let's call it Unnamed Ditch 2.

14 MR. TEBBUTT: Off the record.

15 (Off the record from 9:41 to 9:41.)

16 BY MR. TEBBUTT:

17 Q. Okay.

18 A. I want to make a point here.

19 Q. Yes.

20 A. The Waita ditch and the unnamed ditch run

21 parallel to each other here.

22 Q. Okay. And do they meet at the main ditch by

23 the bridge?

24 A. Yes.

25 Q. The bridge we're referring to is the one that

1 flooded in November 2013.

2 A. No. Let me correct that, no.

3 Q. Okay.

4 A. This water comes around here, okay. It comes

5 down to here, and then these two ditches come into the

6 ditch back here a ways (indicating).

7 Q. The Waita ditch comes into the main ditch,

8 right?

9 A. Uh-huh.

10 Q. And the other ditch, how does that traverse --

11 no, not yet. Don't write on the back of that yet. How

12 does the Unnamed Ditch 2 traverse the main ditch? Is it

13 culverted under it?

14 A. Repeat that question.

15 Q. Yeah. I'm just trying to figure out the

16 hydrology here of the unnamed Ditch 2. You said it

17 flows down on the edge of the taro farm, correct?

18 A. Uh-huh (moves head up and down).

19 Q. And you said it doesn't discharge into the main

20 ditch?

21 A. Yes, it does.

22 Q. Oh, it does?

23 A. Yes, it does.

24 Q. Above the bridge or below the bridge? Above

25 meaning to the west, and below meaning to the east.

1 A. I've got to draw it for you.

2 Q. All right. Let's just do it with a separate

3 piece of paper then. Let's use that piece of paper.

4 Draw me the hydrology filtrator. Refer to Exhibit 4.

5 So you're referring to Exhibit 4. Can we call this

6 Exhibit 4A? Just this piece of paper, just for fun?

7 MR. PALOUTZIAN: Whatever you want to do.

8 BY MR. TEBBUTT:

9 Q. All right. Let's call it Exhibit 4A. We'll

10 mark it at the end when he's done.

11 A. Okay.

12 Q. Hang on. Don't talk yet. The court reporter's

13 not ready. Okay. Go ahead.

14 A. This is the bridge that you're talking about.

15 It's a concrete bridge.

16 Q. Right. Where we took that sample during the

17 Rule 34 inspection, yes.

18 A. You took this sample right here on this bank.

19 Q. Correct. From the bridge. We dipped the

20 bucket down off the bridge. Do you remember that?

21 A. Yeah.

22 Q. Okay.

23 A. This is the road, and this is the ditch over

24 here. Okay. This continues down this way, and then

25 continues this way (writing).

1 Q. Okay.

2 A. Okay. You've got the Waita ditch that comes

3 down here and comes into there (writing).

4 Q. All right. Below the bridge.

5 A. Discharges below the bridge, yeah.

6 Q. Okay.

7 A. Then you've got the No. 2.

8 Q. No. 2 unnamed.

9 A. Unnamed ditch that runs parallel to this and

10 comes into this at that point (writing).

11 Q. All right. Beautiful. So that also comes in

12 and converges with the main ditch below the bridge?

13 A. Correct.

14 Q. Okay.

15 A. But not before the bridge.

16 Q. Okay. So if you would just put Waita on the

17 bottom one.

18 A. (Writing.)

19 Q. And Unnamed No. 2.

20 A. (Writing.)

21 Q. Okay. And Waita is W-a-i-t-a, is that right?

22 A. Waita, yeah.

23 Q. Okay. So can we correct the spelling on that?

24 You just put the A and the I in different places.

25 A. (Writing.)

1 Q. Okay. And so let's put bridge right where you
2 have that written in there.

3 A. (Writing.)

4 Q. Okay. And then let's draw some crosshatches
5 across the road so we know which is the road.

6 A. (Writing.)

7 Q. And then if you'll write, Road, next to it with
8 an arrow.

9 A. (Writing.)

10 Q. Okay. And then main ditch for --

11 A. (Writing.)

12 Q. Okay. Anything else you want to use for what
13 will be marked as Exhibit 4A?

14 MR. PALOUTZIAN: The question is overbroad
15 and vague.

16 BY MR. TEBBUTT:

17 Q. Anything else we need to identify on here?

18 A. No.

19 MR. PALOUTZIAN: Same objection.

20 MR. TEBBUTT: Okay. All right. Let's take
21 a break so we can put Exhibit 4A on there.

22 (Garmatz Deposition Exhibit No. 4A was
23 marked for identification.)

24 BY MR. TEBBUTT:

25 Q. And would you just put your name at the bottom

1 of 4A, Jim Garmatz's drawing?

2 A. (Writing.)

3 Q. Okay. And I forget whether I asked you this or
4 not, but Unnamed Ditch No. 2, on the Saturday after
5 Thanksgiving in November 2013, did you see water flowing
6 in that ditch?

7 A. Very minimal.

8 Q. Okay. But some?

9 A. Some.

10 Q. Okay. And did you see water flowing in that
11 ditch in February or March, the other storm event of
12 2014?

13 A. Very minimal again.

14 Q. About the same amount?

15 A. Yes.

16 Q. Okay. Is there going to be a 35-foot -- what
17 was the word you used?

18 A. Setback.

19 Q. Setback.

20 A. Yes.

21 Q. From Unnamed Ditch 2 as well on both sides?

22 A. Yes.

23 Q. So does that mean the area between Unnamed
24 Ditch 2 and the Waita ditch where it comes pretty close
25 to one another will not be able to be used at all for

1 paddocks?

2 A. Yes, yes.

3 Q. Do you know whether the acreage that will not
4 be available to use for paddocks is calculated into the
5 EIS?

6 A. The exact acreage?

7 Q. Yes, the reductions because of the setbacks.

8 Do you know if there's a special calculation for that?

9 A. I can't tell you that.

10 Q. Okay.

11 A. I don't know that.

12 Q. I think we're done with that, but I won't
13 guarantee it. I'm going to wrap this around.

14 When did you first see nene on the site?

15 A. I've seen nene as early as I got here.

16 Q. So in October 2013?

17 A. Well, I arrived on the site in July of '13,
18 still as a consultant.

19 Q. Okay. And you saw nene then?

20 A. Oh, yeah.

21 Q. How many?

22 A. See a couple flying.

23 Q. How many on the ground on the site?

24 A. I would never count them exactly, you know.

25 Q. Dozens?

1 A. Sometimes 4, sometimes 12, sometimes 20. You
2 know, I just would never count 'em, you know. They
3 blend in well with the ground, and sometimes it's hard
4 to count 'em.

5 Q. How many nests have you seen on the site?

6 A. Oh, numerous nests.

7 Q. Numerous?

8 A. Yeah, 15, 16.

9 Q. Have you seen any nests in 2016?

10 A. Yes.

11 Q. How many?

12 A. Three. Three that I've seen.

13 Q. Okay. And when you've seen a nest in 2016,
14 what do you do?

15 A. I build a -- mark an area 50 feet around the
16 nest.

17 Q. So 50 feet circumference?

18 A. Uh-huh (moves head up and down).

19 Q. So what's the radius from the nest?

20 A. I said that wrong. Fifty feet from the nest.

21 Q. Okay.

22 A. Okay. That's just here with the 50 feet this
23 way and make a circle.

24 Q. Okay. So a 50-foot radius?

25 A. Right.

1 Q. Okay. And what do you make a circle with?

2 A. Basically I'll put signs up. I've got signs
3 that I maintain in my pickup, and I'll put signs up.

4 Q. What kind of signs?

5 A. Indicating -- they're just a small sign.
6 (Indicating), nenes are nesting.

7 Q. What are they made of?

8 A. Plastic -- they're made of paper and then
9 they're coated with plastic, a plastic covering. And
10 then I'll mark off the area. I and my -- Scott and
11 myself are the only ones that are ever on the farm or
12 supposed to be on the farm ever, okay. And we know
13 where those areas are, so we know -- we'll close the
14 road or -- we had one nene alongside that road, and we
15 closed that road until she nested out and left.

16 Q. How long was that, what kind of period of time?

17 A. Oh, shoot, it was almost 30 days.

18 Q. So other than -- how many signs do you put
19 around the nest? Do you have standard --

20 A. Depending on where they're at. You know, one
21 or two.

22 Q. And is there anything else that you do as part
23 of your normal procedure?

24 A. I won't touch the area within it. I won't
25 water it. I won't mow it. I won't fertilize it.

1 Q. Do you contact anyone and let 'em know that
2 it's there?

3 A. The state people come on the property on nearly
4 on a weekly to biweekly basis, and I always inform them
5 of stages as to where we're at with those nests.

6 Q. What state people?

7 A. DLNR people they're hired --

8 Q. DLNR?

9 A. Yes, Department of Land and Natural Resources.

10 Q. And why do they come on the site?

11 A. It's their job.

12 Q. I know. But to do what?

13 A. Monitor nenes. We've got a nene biologist and
14 then we've got her two assistants.

15 Q. Okay. Are there other endangered species that
16 you monitor for on site?

17 A. I'm sure that they have been there, but as far
18 as me being attentive to them, no.

19 Q. So no other endangered species that you're
20 aware of?

21 A. Oh, I'm definitely aware.

22 Q. Okay. What other species are you aware of that
23 use the site?

24 A. I couldn't list them for you. The nenes are
25 the only ones that I really stay cautious about.

1 Because in the portion that we're on on a daily basis --
 2 of the farm that we're on a daily basis, the nenes are
 3 the only ones that we see.

4 Q. Okay. So you don't take any other mitigative
 5 measures for other species?

6 A. If the biologist is to see 'em when they come
 7 onto the farm, he will let me know, and we do protect
 8 their nesting also if they're nesting. Or if he sees
 9 another endangered species on the farm, he'll notify me
 10 and let me know and let me know where he saw it and what
 11 I need to do to set aside the area.

12 Q. How many times have you been notified by the
 13 biologist of other endangered species on the site?

14 A. Two or three times. Three times, three times.

15 Q. When?

16 A. Oh, I couldn't give you the exact dates on
 17 that.

18 Q. Was it this year?

19 A. Oh, no, no.

20 Q. 2015?

21 A. 2014 when construction was going on. They
 22 were -- I asked them to come onto the farm on a weekly
 23 basis and even twice-a-week basis to make sure that --

24 Q. Back during construction?

25 A. Uh-huh (moves head up and down).

1 Q. Have you asked them to come on site at all in
 2 2016?

3 A. Oh, yeah, they're there all the time.

4 Q. Do they come in at their will or at your
 5 request?

6 A. No, their will. They got a key to the farm.

7 Q. Okay. And so do you remember what species you
 8 were notified were present?

9 A. We talked a lot about the nene, and then we saw
 10 an owl.

11 Q. What kind of an owl?

12 A. Oh, I couldn't tell you. I'm sure there's a
 13 name for it, but I didn't pay that close of attention to
 14 it.

15 Q. 'Cause we had talked about the nenes, but you
 16 said there were three times you were notified in 2014
 17 about other endangered species other than nene.

18 A. Yeah, but I can't recall the actual bird -- I
 19 can't remember the bird that they were talking about or
 20 the --

21 Q. But it was a bird? Was it a shearwater, does
 22 that ring a bell?

23 A. No, no, it wasn't a shearwater. I know that
 24 one.

25 Q. Okay.

1 A. I recall the owl, because the owl was very,
2 very large, very large. And they ultimately displaced
3 that -- caught the owl, trapped the owl, and took it to
4 another place.

5 Q. Do you know why they did that?

6 A. 'Cause of the construction that was going on.

7 Q. Okay.

8 A. They didn't want to have the owl to have a
9 problem with the construction.

10 Q. Okay. Have you ever mowed over a nene nest?

11 A. No. No, no, no, no, no, no.

12 Q. Have you ever mowed over a live nene?

13 A. No. Oh, my God, no.

14 Q. Well, sometimes these things happen.

15 A. Yep.

16 Q. When you're not paying attention or even if you
17 are, it can happen.

18 A. Do you know a nene nest? You know it.

19 Q. Why? What's distinguishing about it?

20 A. Well, the female's laying and the male's
21 guarding.

22 Q. Do they squawk?

23 A. Oh, shoot. You come within a hundred feet of
24 him, he's raising all sorts of hell. That's why they're
25 so easy to find.

1 Q. Do you have any communications with the United
2 States Fish and Wildlife Service?

3 A. No.

4 Q. Have you ever seen a letter from the United
5 States Fish and Wildlife Service regarding your project
6 here?

7 A. I'm sure there might have been, but I can't
8 recall one right offhand.

9 (Garmatz Deposition Exhibit No. 23 was
10 marked for identification.)

11 BY MR. TEBBUTT:

12 Q. Mr. Garmatz, handing you what's been marked as
13 Exhibit 23, a letter from the U.S. Fish and Wildlife to
14 Jeffrey Overton at Group 70, subject: Technical
15 assistance for the proposed Hawaii Dairy Farms, Kauai.
16 The letter stamped February 23rd, 2015. Do you see
17 that?

18 A. Yes.

19 Q. Have you ever seen this letter before?

20 A. No.

21 Q. I'm just going to ask you a few questions. Do
22 you know if one of the birds that the state DLNR asked
23 you about was a Hawaiian petrel? Does that sound
24 familiar?

25 A. No, sir.

1 Q. How about a band-rumped storm petrel?

2 A. No, sir.

3 Q. Have you ever seen a requirement from the Fish
4 and Wildlife Service to have a hundred-foot buffer
5 around active nene nests or broods?

6 A. No, I've never seen that.

7 Q. Do you see that at the top of page three, the
8 very first bullet?

9 A. Yes, yeah.

10 Q. So you don't do that, you do a 50-foot,
11 correct?

12 MR. PALOUTZIAN: I'm going to object that
13 the question is vague, as is the statement, a
14 hundred-foot buffer.

15 MR. TEBBUTT: Okay. Well, as the old
16 objection, goes the document speaks for itself.

17 MR. PALOUTZIAN: I agree.

18 BY MR. TEBBUTT:

19 Q. And so you haven't notified the Fish and
20 Wildlife Service of the presence of nene, correct?

21 A. No, I've notified -- no.

22 Q. And so you've never -- do you know if you've
23 submitted a post-construction report, the last bullet on
24 the top of page three, to the Fish and Wildlife Service
25 after completion of your project?

1 A. No, that's not been done.

2 Q. There was some water quality sampling that was
3 done on the site in, I believe it was 2015, right? Do
4 you recall that?

5 A. State that again, I'm sorry.

6 Q. Water quality sampling done on the site by HDF
7 in 2015?

8 A. Yes. Surface water or groundwater?

9 Q. Surface.

10 A. Okay.

11 Q. Is that a fair assessment, that there was
12 surface water sampling done?

13 A. Yes.

14 Q. Do you know if there was any surface water
15 sampling done during the period that construction was
16 going on in 2014?

17 A. No.

18 Q. There was no water quality sampling done then?

19 A. No.

20 Q. By HDF?

21 A. No.

22 Q. That's correct? Am I correct?

23 A. No sampling was conducted.

24 Q. Right. Okay. We had some double negatives
25 there. I just wanted to make sure we were getting the

1 right statement.
2 What level of involvement did you have with the
3 surface water sampling in 2015?

4 A. I took them to the collection areas, delivered
5 them to the collection areas.

6 Q. So you were present when the samples were
7 taken?

8 A. Yes, sir.

9 Q. And did you get the results of the samples,
10 too?

11 A. Yes, sir.

12 (Garmatz Deposition Exhibit No. 24 was
13 marked for identification.)

14 BY MR. TEBBUTT:

15 Q. Mr. Garmatz, I've handed you Exhibit 24, which
16 is two pages of results of sampling from the HDF site
17 and some places, I think, just off site, samples that
18 were taken November 24, 2014, one by Mr. Steven Dollar
19 and the other by the Department of Health. Do you see
20 those?

21 A. Yes, sir.

22 Q. Mr. Dollar is a consultant for HDF, correct?

23 A. Yes.

24 Q. And he was at that time?

25 A. Yes.

1 Q. And you said you've seen these kinds of --
2 you've seen these sample results, correct?

3 A. Yes.

4 Q. Did you have any discussion with Mr. Dollar
5 about why the results on the second page of Exhibit 24
6 are so different than the results on the first page of
7 Exhibit 24?

8 MR. PALOUTZIAN: Objection, argumentative
9 and it's vague and overbroad. Go ahead.

10 THE WITNESS: No.

11 BY MR. TEBBUTT:

12 Q. Do you see that the enterococcus numbers are
13 significantly different?

14 A. Yes, sir.

15 Q. Did you ever ask Mr. Dollar why that was the
16 case?

17 A. No.

18 Q. Did he ever raise it with you?

19 A. Not to my knowledge, no.

20 Q. Have you ever discussed why these results are
21 so different with anyone other than Mr. Dollar?

22 MR. PALOUTZIAN: Same objection.

23 BY MR. TEBBUTT:

24 Q. You didn't talk to Mr. Dollar. Did you speak
25 with anyone about why the results are so different?

1 MR. PALOUTZIAN: Objection, argumentative.
 2 Go ahead.
 3 THE WITNESS: Discussed it amongst our team
 4 members.
 5 BY MR. TEBBUTT:
 6 Q. Who?
 7 A. Greg Gaug and Kyle Datta.
 8 Q. Who's Greg Gaug?
 9 A. Gaug, G-a-u-g.
 10 Q. Who's Greg Gaug?
 11 A. He's an employee of Ulupono.
 12 Q. Okay. In what capacity?
 13 A. I don't know what Greg's capacity is. He heads
 14 up the financial side of the project.
 15 Q. Okay. So what was your discussion with Mr.
 16 Datta and Mr. Gaug about the Exhibit 24 results?
 17 A. The difference it 'em.
 18 Q. And what was the discussion?
 19 A. Well, we just discussed them as far as why they
 20 were -- why there was a difference.
 21 Q. And what was the discussion about?
 22 A. Greg and Kyle were going to get with Steve and
 23 ask him.
 24 Q. And did they?
 25 A. I couldn't tell you.

1 Q. They didn't follow up with you about that?
 2 A. No, no. A lot of stuff they don't follow up
 3 with me about.
 4 Q. Having looked at this more, is there any
 5 other -- anything that comes to your mind about why
 6 those differences existed?
 7 MR. PALOUTZIAN: Objection, that calls for
 8 an expert witness. Go ahead.
 9 THE WITNESS: No, I can't comment on that.
 10 I'm not an expert in water quality.
 11 I need to take a break.
 12 (Break from 10:14 to 10:22.)
 13 BY MR. TEBBUTT:
 14 Q. Sir, I just want to ask you a few more
 15 follow-up questions about endangered species. Have you
 16 seen a Koloa duck on the site?
 17 A. Yes.
 18 Q. How many times.
 19 A. Just twice.
 20 Q. Were those some of the ones that you notified
 21 DLNR about?
 22 A. No, because they notified me about it, and I
 23 went and looked at 'em. They saw 'em before I did. And
 24 then they said, Here they're at. Let's go look at 'em
 25 so I can see 'em.

1 Q. Were they nesting sites?

2 A. No, no. They were just -- in fact, the first
3 time they showed me, they weren't even on the site.
4 They were off the site.

5 Q. Okay.

6 A. And then the second time they were sitting on
7 the road that was within the boundaries, the main road
8 that goes down the center of the farm.

9 Q. How about the stilt, have you seen the stilt?

10 A. No.

11 Q. You haven't seen one?

12 A. No, no.

13 Q. You're not aware of any?

14 A. Not on the farm, no, sir.

15 Q. How about a coot?

16 A. No. Now, people tell me that -- no, I'm not
17 going to say that.

18 Q. Go ahead. You can say it.

19 A. No, I'm fine.

20 Q. Please complete. People tell you what?

21 A. That they're hard to distinguish between other
22 birds, too. So you might not see what they're like.

23 So....

24 Q. Okay. I don't mean this in a bad way or
25 anything else. But I'm just noticing, and I just want

1 to ask you, do you feel agitated or anything right now?
2 Are you feeling all right? 'Cause I noticed you took a
3 break rather sharply. And I just want to ask if you're
4 feeling okay.

5 A. Feeling great.

6 Q. Okay. I'd like you to take a look at
7 Exhibit 14, which has been marked in this case. Have
8 you ever seen this document before? Go ahead and read
9 it to yourself. Take your time. Let me know when
10 you're done.

11 A. Okay. I was --

12 Q. Yeah. Have you seen this document?

13 MR. PALOUTZIAN: He's asking whether you've
14 seen it before.

15 THE WITNESS: Not the top one, no.

16 BY MR. TEBBUTT:

17 Q. Okay. The bottom one obviously was to you.

18 A. Yes.

19 Q. Did you forward that -- the email dated Friday,
20 March 24, 2014, at 4:30 p.m. from Sina Pruder, did you
21 forward that to Mr. Datta?

22 A. Yes.

23 Q. But you hadn't seen Mr. Datta's email?

24 A. No, no.

25 Q. How do you get along with Mr. Datta?

1 A. Fine.

2 Q. Does the email that -- from Mr. Datta to

3 Mr. Clay and Ms. Hennessey influence your opinion of how

4 you get along with Mr. Datta at all?

5 A. No, because Mr. Datta before he sent this email

6 called and confirmed the same thing in a conversation

7 with me. So we had a long discuss before this email was

8 written.

9 Q. About what?

10 A. About all these topics.

11 Q. I see. About the sizing of the facility?

12 A. No, not so much that. It was that he was not

13 comfortable with me going forward with heading up the

14 permitting. And, you know, he asked -- first question

15 out of his mouth, he says, Are we ready to load up?

16 And I said, Load up. And I said, Yeah, we're

17 ready to load up.

18 And he says, You're not comfortable going

19 forward with what's going on?

20 And I said, No. And I said --

21 And he said, Neither am I.

22 Q. What does load up mean?

23 A. Attach Group 70, get Patricia Henry involved.

24 Q. So you wanted to load up, you mean, bringing in

25 more experts and lawyers?

1 A. Yes.

2 Q. Did you have a discussion with him about

3 whether to scale the facility down from 2,000 head to

4 699?

5 A. Well, that was an ongoing discussion early on

6 after we felt the pushback from the community.

7 Initially, you know, it was going to be a larger

8 facility. The original plans were going to be a larger

9 facility. But both myself and Ms. Hennessey, who was

10 their PR relations folks who -- her and I had been on

11 the island discussing this, and we had suggested that we

12 possibly change our numbers down to a number that would

13 be less than 700 to start the facility out with.

14 Q. And was that to avoid the large CAFO regulatory

15 process?

16 MR. PALOUTZIAN: I'm going to object that

17 it calls for specification. It's vague. Go ahead.

18 THE WITNESS: No, because we knew the large

19 CAFO would take longer than what we had intended to get

20 done.

21 BY MR. TEBBUTT:

22 Q. Right. So is that why you scaled the project

23 down to 699?

24 A. No.

25 MR. PALOUTZIAN: Same objections.

1 THE WITNESS: No.

2 BY MR. TEBBUTT:

3 Q. Why did you scale it down to 699?

4 MR. PALOUTZIAN: Same objections and it's

5 misleading. Go ahead.

6 BY MR. TEBBUTT:

7 Q. At least the initial phase.

8 MR. PALOUTZIAN: Same objections.

9 THE WITNESS: We felt it would be community

10 friendly to start out at a lower amount.

11 BY MR. TEBBUTT:

12 Q. But you still intended to get to 2,000,

13 correct?

14 MR. PALOUTZIAN: Same objections. You're

15 asking his personal view of the project?

16 MR. TEBBUTT: What his knowledge of it is.

17 MR. PALOUTZIAN: Well, the question is

18 vague as posed. Go ahead.

19 THE WITNESS: We just felt it would be more

20 friendly to the neighbors.

21 BY MR. TEBBUTT:

22 Q. Why would it be more friendly?

23 A. 'Cause we could prove to them that the project

24 works.

25 Q. And then you'd scale it up to 2,000?

1 MR. PALOUTZIAN: Same objections.

2 THE WITNESS: If the grass could handle it.

3 BY MR. TEBBUTT:

4 Q. So is your main contention whether the grass

5 can handle more than 699 cows?

6 MR. PALOUTZIAN: Objection, vague.

7 THE WITNESS: I know that it can handle

8 more than 699, but whether we go there or not will be

9 determined later.

10 BY MR. TEBBUTT:

11 Q. And when you say whether the grass can handle

12 it, is that in terms the grass feeding the animals?

13 A. That's correct.

14 Q. What about whether the grass can uptake the

15 waste from the animals?

16 A. Well, I know that it can do that.

17 Q. Why do you know that?

18 A. Because of the grass yield test that we've

19 taken and studies we've done.

20 Q. And what studies are those?

21 A. The grass yield studies that have been

22 performed over the past two years.

23 Q. Okay. And are those included in the EIS?

24 A. Yes.

25 Q. And is it your contention that they show that

1 the grass will take up all the nutrients from --

2 A. Yes.

3 Q. Just a minute. From the manure waste?

4 A. Yes.

5 Q. What happens in a storm event of the size of
6 the ones you saw in November 2013 and February of 2014?
7 What happens to the lagoons in that situation?

8 MR. PALOUTZIAN: Objection, the question is
9 overbroad, it calls for an expert opinion, it's an
10 incomplete hypothetical, lacks foundation, calls for
11 speculation. Go ahead.

12 THE WITNESS: Ask the question again.

13 BY MR. TEBBUTT:

14 Q. Yes. When a large storm event like the two
15 that happened right after Thanksgiving in 2013 and then
16 the other one you testified about in February or
17 March 2014, over -- it was over five inches, what
18 happens to the lagoons in that situation?

19 MR. PALOUTZIAN: Same objections.

20 THE WITNESS: The lagoons will be managed
21 to best management practices and that would not happen.

22 BY MR. TEBBUTT:

23 Q. What would not happen?

24 A. The overflow of the lagoons.

25 Q. Isn't part of the present protocol that you

1 would have to empty the lagoons prior to such a storm
2 event?

3 A. Not for that size of a storm event, no.

4 Q. What size storm event would require you to
5 empty the lagoons prior to storm events?

6 MR. PALOUTZIAN: Same objections. It's
7 also getting into the realm of not being relevant to the
8 claims in this case. Go ahead.

9 THE WITNESS: Twenty-four-hour, 25-year
10 event.

11 BY MR. TEBBUTT:

12 Q. And what size is that?

13 A. Over eight inches.

14 Q. Now, just to clarify, the 699 cows that are
15 planned to be brought into the facility, they would be
16 brought in pregnant cows, correct? That's the plan?

17 MR. PALOUTZIAN: Same objections.

18 THE WITNESS: Say that again.

19 MR. PALOUTZIAN: Let me just state an

20 objection. I don't think that's relevant to the claims
21 being made in this litigation. Go ahead and answer the
22 question.

23 BY MR. TEBBUTT:

24 Q. Yeah. So the plan is to bring in 699 pregnant
25 cows, correct?

1 A. To the facility, yes.

2 Q. Right. And how long would it be before they

3 gave birth?

4 MR. PALOUTZIAN: Same objection.

5 THE WITNESS: Should give birth within 60

6 days of each other, beginning to end.

7 BY MR. TEBBUTT:

8 Q. Okay. And from the time they're brought onto

9 the facility till they give birth, how much time would

10 you expect?

11 MR. PALOUTZIAN: Same objection.

12 THE WITNESS: They will not come onto the

13 facility until they're within 15 days of giving birth.

14 MR. TEBBUTT: Okay. Can we take about a

15 six-minute break?

16 MR. PALOUTZIAN: All right.

17 (Break from 10:37 to 10:46.)

18 BY MR. TEBBUTT:

19 Q. I just have a few more questions for you. You

20 know, famous last words. I want to ask you if you've

21 ever heard of mill ditch?

22 A. Mill ditch?

23 Q. Yeah.

24 A. No.

25 Q. Okay. Not Mill Ditch 9, A or B?

1 A. No.

2 Q. Okay. How about Waiopili ditch?

3 A. Yes.

4 Q. Okay. And what do you consider Waiopili ditch?

5 Is it on the map? Is it on Exhibit 4?

6 A. Yeah.

7 Q. What do you consider to be Waiopili ditch?

8 A. These two drains come together right down here

9 underneath your white portion of your map (indicating).

10 Q. So the center ditch and the main ditch, where

11 they converge?

12 A. Yes.

13 Q. That in your estimation become Waiopili ditch?

14 A. Yeah, that's how I consider it. I don't know

15 what everybody else considers it, but that's how I

16 consider it.

17 Q. You don't consider anything on the property to

18 be part of Waiopili ditch?

19 A. No.

20 Q. Okay. Did you help the Ulupono Initiative or

21 Mr. Omidyar prepare their tax rebate request in any way?

22 A. No.

23 Q. Did you provide any answers to questions from

24 their accountant about that tax application?

25 A. No, no, no.

1 Q. What about the invoices that were related to
 2 the work that was requested for the rebate?
 3 A. No, no.
 4 Q. Did you answer any questions about the invoices
 5 and whether they related to this project or not for the
 6 tax rebate?
 7 MR. PALOUTZIAN: Objection, calls for
 8 speculation, lacks foundation. Go ahead.
 9 BY MR. TEBBUTT:
 10 Q. Go ahead and answer.
 11 A. I don't recall.
 12 Q. So it's possible Mister -- that you spoke with
 13 Mr. -- is it Haed?
 14 A. I don't recall that name.
 15 Q. Okay.
 16 MR. TEBBUTT: Off the record for just a
 17 second.
 18 (Off the record from 10:48 to 10:51.)
 19 BY MR. TEBBUTT:
 20 Q. Mr. Garmatz, I'm going to show you an invoice
 21 from All Property Consulting, Inc, dated February 2,
 22 2014. And I'm going to ask you some questions about it.
 23 A. Okay.
 24 Q. We only have the one electronic copy. So it
 25 will become Exhibit 25 to the deposition.

1 A. Okay.
 2 Q. So if you don't mind, I'm going to look over
 3 your shoulder.
 4 A. That's fine.
 5 Q. While I ask you some questions.
 6 MR. PALOUTZIAN: Or I can show him on my
 7 computer. Whatever you prefer. I have it pulled up on
 8 my screen as well.
 9 MR. TEBBUTT: All right. Do you want to do
 10 that? That would probably be little easier. Thanks.
 11 BY MR. TEBBUTT:
 12 Q. And let's just make sure we're looking at the
 13 right thing.
 14 A. Yes.
 15 Q. Just to be on safe side. Looks good, okay.
 16 Mr. Garmatz, do you know who Bob Farias is?
 17 A. Yeah, yeah, Bobby Farias. I know him very
 18 well.
 19 Q. Okay. F-a-r-i-a-s.
 20 A. Yes. There's junior now. Make sure we refer
 21 to junior.
 22 Q. Okay. So there's a junior and a senior?
 23 A. Yes.
 24 Q. Okay. And I assume senior is junior's father?
 25 A. Yes.

1 Q. And do you work with both gentlemen?
 2 A. Yes.
 3 Q. In what capacity have you worked with Mr.
 4 Farias, Sr.?
 5 A. He did some clearing out at the farm.
 6 Q. When?
 7 A. In 2014, early 2014.
 8 Q. So that -- is this invoice, is this name from
 9 the senior?
 10 A. No, this is from junior.
 11 Q. Okay. I was asking you about senior. So did
 12 senior do some of the clearing, too?
 13 A. Yes, yes.
 14 Q. But junior is the one that does the invoices?
 15 A. No. Junior is a totally separate entity. All
 16 property consulting is junior's entity.
 17 Q. Okay. So Mr. Farias does he -- Mr. Farias,
 18 Sr., does he has a separate entity or is he just on his
 19 own?
 20 A. Yeah, separate entity.
 21 Q. Do you know the name of his entity?
 22 A. I was afraid you were going to ask me that. I
 23 can't tell what it is right offhand.
 24 Q. Okay. It's not R Ranch is?
 25 A. No, it's Ross Farias.

1 Q. Okay. I'm going to just go through this
 2 invoice and ask you some stuff. 'Cause I asked --
 3 earlier we discussed some invoices, and there wasn't as
 4 much detail. This might help with some detail.
 5 So on the left side of the page, I assume those
 6 are the dates of the work, is that correct?
 7 A. Uh-huh (moves head up and down). Yeah.
 8 Q. And is that billing for February 2014 work or
 9 January 2014 work. Do you know?
 10 A. January.
 11 Q. Okay. 'Cause the invoice is February 2nd,
 12 right?
 13 A. Right.
 14 Q. Okay. So the first entry says, 2nd, so that
 15 would be the 2nd of January?
 16 A. Uh-huh (moves head up and down).
 17 Q. Locate disk for farm to prep ground.
 18 A. That's correct.
 19 Q. What does that mean, locate disk, do you know?
 20 A. Well, he was looking for a disk. I'd asked him
 21 to find me a disk that we could start some prep ground
 22 with on the farm.
 23 Q. Okay. If you don't mind, could you take your
 24 hand from in front of your mouth. Thanks. It's clearer
 25 for the court reporter.

1 A. Mr. Farias is a consultant, and he just does
2 active work for me in the month of January, and these
3 are the tasks that I asked him to help me with. And
4 this is the hours spent.

5 Q. Does this every January?

6 A. No.

7 Q. Or just January of 2014?

8 A. Yeah, yeah.

9 Q. Okay.

10 A. And all those are tasks that I asked him to do
11 for me.

12 Q. Sure.

13 A. And you see the hours that he spent doing
14 those, and he totals them up there, and it's a total of
15 36 hours at \$95, and we paid that.

16 Q. Right. Sure. The second entry says, Meetings
17 at the farm, grass plot, land clearing, ground prep.

18 A. Yes.

19 Q. What's the land clearing and ground prep refer
20 to?

21 A. That's basically what we discussed while we
22 were at the farm having our meeting.

23 Q. But yet there was actually work done, too,
24 right, the land clearing and ground prep?

25 A. No, no.

1 Q. So the meeting took five hours?

2 A. Yeah, you betcha. Yeah, we talked a bunch
3 about how we were going to do it, where we were going to
4 do it, how it was going to get done.

5 Q. Okay. The entry on the 14th.

6 A. Okay.

7 Q. It says, Worked at farm site drainage and
8 cleaning, prepared for delivery of pivots, six hours.

9 A. That was some work that we talked about there.

10 And, let's see, where's the drain? It's also a
11 possibility that Bobby might have used my tractor that
12 day to mow some grass because we did have the pivots
13 coming in about that time in containers.

14 Q. So you're saying he mowed some grass for the
15 delivery of the pivots?

16 A. Yeah, to place the pivots out of the
17 containers.

18 Q. Okay. 'Cause I think I asked you --

19 A. I can't tell you exactly how that was -- what
20 was done there on that date.

21 Q. Yeah. 'Cause I asked you earlier about whether
22 you did any special preparation for the pivots, and I
23 think you said no earlier.

24 A. Yeah.

25 Q. Does this refresh your recollection that there

1 was some preparation done?

2 A. Well, this is for the delivery of the pivots,
3 you know, the containers that came in that they were
4 delivered in. And you have to take the containers --
5 the material out of the containers. And there was six
6 of the containers. So I'm sure that we did some ground
7 prep for it, yeah. I'll have to change my wording.

8 Q. Okay. I'm done with that one. Can you go to
9 the June 1, letter, please. Mr. Garmatz, you have in
10 front of you what will be labeled under stipulation of
11 counsel as Exhibit 25 [sic], the June 1, 2016, letter
12 from Group 70 to Hawaii Department of Health. Do you
13 see that letter? Do you see that document in front of
14 you? Sir, do you see the document?

15 A. Yeah, I see it.

16 Q. Okay. It's a two-page letter, correct?

17 A. Yes.

18 Q. And have you seen this letter before today?

19 A. No.

20 Q. This is the first time you've seen it?

21 A. Uh-huh (moves head up and down). Let me finish
22 reading it, please.

23 MR. TEBBUTT: Okay. While you're reading
24 it, I would just like to say for the record that
25 Exhibit 25 [sic] is a document dated June 1, 2016, from

1 Group 70 to the Department of Health that should have
2 been provided to us in response to request for
3 production of documents, and to our understanding was
4 not. We found this on our own.

5 MR. PALOUTZIAN: Okay. Well, I'm not sure
6 what you consider to be the deadline for production of
7 documents. But...

8 THE WITNESS: Okay.

9 BY MR. TEBBUTT:

10 Q. Does having read through the letter refresh
11 your recollection whether you've seen this letter
12 before?

13 A. I've not seen this letter before.

14 Q. Okay. Have you discussed the contents of the
15 letter with anyone at Group 70?

16 A. It was discussed in a phone conversation.

17 Q. When?

18 A. Three weeks ago.

19 Q. Who was on the call?

20 A. Just myself and Paul Matsuda.

21 Q. And how long did that discussion take place?

22 A. Two to three minutes.

23 Q. And did you initiate the call or did Mr.
24 Matsuda?

25 A. Matsuda called me.

1 Q. What did he ask you?
 2 A. Just keep me updated.
 3 Q. Did he tell you that the request for an
 4 extension of the storm water permit was going to be
 5 filled?
 6 A. Uh-huh.
 7 Q. And did you -- did he ask for any specific
 8 information from you?
 9 A. No, no, just an update.
 10 Q. He was just letting you know that the request
 11 would be filed?
 12 A. Correct.
 13 Q. And what did you say?
 14 A. Fine.
 15 Q. Did you discuss anything other than -- or did
 16 you say anything other to him than, Fine, during the
 17 conversation?
 18 A. No, just indicated to him that that would be
 19 all right. So thank you for the information.
 20 Q. What information -- additional information
 21 relevant to the NOI application was needed, do you know?
 22 MR. PALOUTZIAN: Objection, lacks
 23 foundation, calls for speculation.
 24 THE WITNESS: I wouldn't know that. I
 25 wouldn't know that.

1 BY MR. TEBBUTT:
 2 Q. Did you discuss any of that additional --
 3 A. No.
 4 Q. Just a minute. Please let me finish my
 5 question.
 6 Did you discuss any of what additional
 7 information was needed with Mr. Matsuda on that phone
 8 call?
 9 A. No.
 10 Q. Have you had any discussions with him on any
 11 other phone calls about what additional information was
 12 needed for NOI application?
 13 A. I do not recall.
 14 Q. Sir, if you'll take a look at Exhibit 20. I
 15 think we're done with this one. You can move the
 16 computer.
 17 This is a submission dated August 17, 2015,
 18 from HDF concerning the storm water permit. Do you see
 19 that?
 20 A. Uh-huh (moves head up and down).
 21 Q. Have you seen this document before?
 22 A. Yeah, I've seen portions of this, yes, sir.
 23 Q. Okay. I'd like you to turn to -- towards the
 24 back, FOM_002602 through 2608. Let me know when you get
 25 there. Do you see 2602 through 2608?

1 A. Uh-huh (moves head up and down) .
 2 Q. Oh, okay. So you're looking at that upside
 3 down. It's okay. So if you turn just briefly to 2608,
 4 please. Do you see the signature line on 2608, and it
 5 has your name on it?
 6 A. Uh-huh.
 7 Q. Did you actually submit that document?
 8 A. Yes.
 9 Q. Who wrote that document for you or did you
 10 write it yourself?
 11 A. Oh, no. Group 70.
 12 Q. Okay. Did Mr. Matsuda write that for you?
 13 A. Yes, sir.
 14 Q. And how much time did you spend working with
 15 Mr. Matsuda on that letter?
 16 A. Oh, 20, 25 hours.
 17 Q. Okay. Did you do that with him in person or
 18 over the phone or --
 19 A. Both.
 20 Q. How did you do it?
 21 A. Both.
 22 Q. Okay. Did you go to Honolulu and meet with him
 23 about the letter?
 24 A. Yes.
 25 Q. And how much time did you spend with him

1 working on that letter?
 2 A. About six hours over there in Honolulu.
 3 Q. And did he come over here to work with you on
 4 this, too?
 5 A. Yes.
 6 Q. And how much time did he spend with you working
 7 on it?
 8 A. Full day, eight-hour day, long day.
 9 Q. Just the two of you?
 10 A. Ryan Char was also there.
 11 Q. And who's Ryan Char?
 12 A. He's another individual at Group 70.
 13 Q. Okay. He's not an attorney, though, is he?
 14 A. No.
 15 Q. Okay. So it was just at most the three of you
 16 working on this?
 17 A. Uh-huh (moves head up and down) .
 18 Q. Okay.
 19 A. I believe Amy Hennessey was there also.
 20 Q. Okay. Is the information in the letter dated
 21 August 14, 2015, correct?
 22 MR. PALOUTZIAN: Objection overbroad.
 23 THE WITNESS: To the best of my knowledge.
 24 BY MR. TEBBUTT:
 25 Q. Okay. Take a look at 2604 of that letter. Do

1 you have that in front of you?
 2 A. Uh-huh.
 3 Q. Look at E, Locations of any crossing of state
 4 waters as required by Section 7.2.6.1. Do you see that?
 5 A. Uh-huh.
 6 Q. And it says, Crossings of Mahaulepu Ditch are
 7 indicated in Figure 6B. Crossings will be constructed
 8 per applicable NRCS conservation practice standards. Do
 9 you see that?
 10 A. Yes.
 11 Q. Where is Mahaulepu Ditch?
 12 A. Mahaulepu Ditch is the main ditch on the farm.
 13 That's what they designated it as.
 14 Q. So on Exhibit 4, Mahaulepu Ditch is the main
 15 ditch or the center ditch or is that both?
 16 A. It's this one (indicating).
 17 Q. So that's the center ditch, correct?
 18 A. Yeah.
 19 Q. And that starts all the way at the top of the
 20 property?
 21 A. Yes.
 22 Q. Next to 1 and 2?
 23 A. Yeah.
 24 Q. And where they converge?
 25 A. That's correct.

1 Q. Okay. And it says, Crossings will be
 2 constructed. Hadn't the crossings already been
 3 constructed and put in place?
 4 A. At this point?
 5 Q. Yes.
 6 A. Yes.
 7 Q. In August of 2015.
 8 A. Yes.
 9 Q. So that's an incorrect statement, isn't it?
 10 A. Yes, that's incorrect.
 11 Q. It's a lie basically, isn't it?
 12 MR. PALOUTZIAN: Objection, it's
 13 argumentative.
 14 BY MR. TEBBUTT:
 15 Q. And it says, Will, which means future, correct?
 16 Is that correct?
 17 A. Yes.
 18 Q. And that had already been done, correct?
 19 A. Yes.
 20 Q. So the letter is incorrect, isn't it?
 21 A. (Moves head up and down.)
 22 Q. Isn't it, Mr. Garmatz?
 23 A. Yes, yes.
 24 Q. And I'd like you to take a look at FOM_002493
 25 earlier on in the submission. Do you see that in front

1 of you?

2 A. Uh-huh.

3 Q. It has, Disturbed area for farm improvements

4 under NOI, NPDES general permit. Do you see that?

5 A. Say that again.

6 Q. It says down at the bottom, it's the map,

7 Figure 6B, Disturbed area for farm improvements under

8 NOI, NPDES general permits. Right?

9 A. 92493?

10 Q. (Indicating.)

11 A. Okay, okay.

12 Q. See that?

13 A. (No response.)

14 Q. Did I read that correctly?

15 A. Yeah.

16 Q. Okay. And the listings under there include

17 installation and trenching for watering facilities at

18 each paddock, correct? It's one of the listings. The

19 third one down under the disturbed area. Do you see

20 that?

21 A. Yeah. That's the disturbed area that's already

22 in place.

23 Q. Right. So those are the water troughs,

24 correct?

25 A. Yes.

1 Q. And the next line down, the next bullet point

2 is, Installation/Trenching for new potable water

3 distribution line from existing potable well source to

4 the dairy facility. Has that been put in place?

5 A. No.

6 Q. On the map itself there are four references to

7 new animal crossings per NRCS Practice Code 578. Do you

8 see that?

9 A. Uh-huh.

10 Q. Those had already been installed by the time

11 this was submitted, hadn't they?

12 A. No.

13 Q. Okay.

14 A. Nope.

15 Q. Okay. How about -- strike that.

16 Oh, the maintenance of all agricultural ditches

17 and Mahaulepu Ditch in accordance with MOU between

18 USACE, NRCS and EPA. Do you see that?

19 A. Yes, sir.

20 Q. That maintenance had already been done, hadn't

21 it?

22 A. No.

23 Q. The maintenance, had it been done on the

24 ditches, had it not been done as of August of 2015?

25 A. No, no.

1 MR. PALOUTZIAN: Assumes facts not in
2 evidence.

3 BY MR. TEBBUTT:

4 Q. What was the maintenance that was done on those
5 ditches prior to 2015?

6 A. The same thing we discussed this morning,
7 maintenance within the 35-foot setback per NRCA -- NRCS
8 rules.

9 Q. Okay. And then if you'll take a look at
10 002602, please. It's the first page of the letter. Do
11 you see that?

12 A. Uh-huh.

13 Q. Under the query 2, it says, Land disturbance
14 associated with this project as listed in the NOI has
15 not at commenced?

16 A. Uh-huh.

17 Q. Including, but not limited to, preliminary site
18 construction such as installation of fencing and
19 irrigation systems.

20 Irrigation systems had already been -- some of
21 the irrigation systems had already been put in place
22 prior to that letter, correct?

23 A. That's correct.

24 Q. So this letter is incorrect, again, isn't it?

25 A. Yes.

1 MR. TEBBUTT: I'm done. Thanks.

2 MR. PALOUTZIAN: Request to review the
3 transcript.

4 (Garmatz Deposition Exhibit Nos. 25 and 26
5 were marked for identification.)

6 (Concluded at approximately 11:15 a.m.,
7 June 14, 2016.)

8 * * * * *

I, JAMES J. GARMATZ, VOLUME 2, hereby certify that I have read the foregoing typewritten pages 136 through 230, inclusive, and corrections, if any, were noted by me, and the same is now a true and correct transcript of my testimony.

DATED: Koloa, Hawaii _____

JAMES J. GARMATZ

Signed before me this _____
day of _____ 2016.

Friends of Mahaulepu, Inc. vs. Hawaii Dairy Farms, LLC;
Civil No. 1:15-cv-00205-LMK-KJM; Deposition taken on
June 14, 2016, by Terri R. Hanson, RPR, CSR 482.

STATE OF HAWAII)
) ss.
COUNTY OF KAUAI)

I, TERRI R. HANSON, RPR, CSR 482, do hereby certify:

That on Tuesday, June 14, 2016, at 8:35 a.m. appeared before me JAMES J. GARMATZ, VOLUME 2, the witness whose deposition is contained herein; that prior to being examined, the witness was by me duly sworn;

That pursuant to Rule 30(e) of the Hawaii Rules of Civil Procedure, a request for an opportunity to review and make changes to this transcript:

___X___ Was made by the deponent or a party (and/or their attorney) prior to the completion of the deposition.
___Was not made by the deponent or a party (and/or their attorney) prior to the completion of the deposition.
___Was waived.

That the foregoing represents, to the best of my ability, a full, true and correct transcript of said deposition.

I further certify that I am not an attorney for any of the parties hereto, nor in any way concerned with the cause.

This 97-page Deposition of James J. Garmatz, Volume 2, dated June 14, 2016, was subscribed before me this 24th day of June, 2016, in Lihue, Hawaii.

TERRI R. HANSON, CSR 482
Registered Professional Reporter

February 22nd, 2014

Attn: Laura McIntyre (808) 586-4337
State of Hawaii, Department of Health
1250 Punchbowl Street,
Honolulu, HI 96813

State of Hawaii, Department of Health
919 Ala Moana Rd. Room 312
Honolulu, HI 96814

Attn: Jeff Overton (808) 523-5866
HDF@Group70intl.com
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813.

Hawaii Dairy Farms, LLC.
P.O. Box 1690
Koloa, HI 96756-1690

Comments to be considered in preparation of an Environmental Impact statement for:

Project Name: Hawaii Dairy Farms

Island: Kauai

District: Poipu

TMK: (4) 2-9-003:001 (portion); 006 (portion)

(4) 2-9-001:001 (portion)

To whom it may concern:

Waters of the State and United States:

The scope of the EIS must include a thorough consideration of the Public Trust Doctrine as articulated by Article XI of the Constitution of the State of Hawaii. The Hawaii State Supreme Court has authored at least four major Decisions enforcing the Public Trust Doctrine and its constitutionally intended protection for the waters of the State: *Waiahole I* (1994), *Waiahole II* (2000), *Na Wai Eha* (2012), and *Kauai Springs* (2014). Each of these cases dealt with situations in which water on agricultural land was either being diverted or taken for use by an agricultural operation or bottling company. In all cases the Court found that such uses constituted a violation of the Public Trust Doctrine. There is no reference to this doctrine in HDF's EIS. Hawaii Dairy Farm's Waste Management Plan also fails to refer to or consider this doctrine. It needs to be addressed by both HDF's Plan and the EIS.

Hawaii Dairy Farms (HDF) plans to irrigate the pastures at the Maha'ulepu site with 2.93 million gallons of water daily (MGD) from the Waita Reservoir according to HDF Waste Management Plan (WMP), pages 31, 37 and 44. Per HDF, their lease with Grove Farm entitles them to 3 MGD (million gallons daily) as a term of their lease contract. It may not be uncommon to have an agricultural lease include the use of water that is available on the agricultural site. In this case, however, the water that is available from the Waita Reservoir, an off-site reservoir that happens to be on other Grove Farm property, is water that collects from the Huleia Stream diversion which now feeds the Waita since the cessation of cane cultivation in 1996. The volume of water HDF plans to consume with irrigation of its 517 acres of grazing pasture (2.93 MGD) is substantial. But for the 100% diversion of the Huleia Stream, the Puna District

used to receive water from the Huleia Stream, previously a major water resource for the natural watershed of the Niamaulu River, the Alekoko Fishponds and several native Hawaiian taro farms. The farmers of the Puna District (covering the area where the Huleia waters flowed prior to the construction of the 100% diverter in 1957) are currently involved with the Department of Land and Natural Resources (DLNR), Commission on Water Resource Management (CWRM) seeking restoration of the natural watershed and revision/take down of the Huleia Stream diversion. HDF's planned water consumption from the Waita (2.93 MGD) far exceeds the Kauai Springs 1000 (5 Gallon) containers of water per day that Kauai Springs planned to draw from the stream flow. Kauai Springs, Hawaii Supreme Court, SCWC-29440, 28-FEB-2014, pages 3-4. If the Public Trust Doctrine applied in Kauai Springs it should certainly be a compelling consideration with the planned use of 2.93 MGD. Not only is the intended daily volume of water an issue, but of equal concern is the proposed new use of the water, the liquification of massive amounts of waste (3 million gallons of wet manure and 200,000 gallons of urine monthly from the start-up herd of 699 and 8.5 million gallons of wet manure and at least 600,000 gallons of urine monthly if the herd reaches 2,000 as planned). Clearly, a thorough evaluation of HDF's proposed new use for the waters of the Waita is warranted as well as a detailed analysis of the impact to "instream" and "out of stream" or "nonstream" flow standards.

Grove Farm acquired the Koloa Sugar Plantation which, like most sugar plantations, relied on an extensive ditch system to irrigate its crop. The Huleia Stream diversion, (a lengthy concrete diverter, covered by a steel grate that was designed to divert 100% of the instream flow of the Huleia Stream, located mauka of the Kaunali'i Highway/Route 50) provided the great majority of the waters relied on by Grove Farm for cultivation of the Koloa Sugar Company's cane. When Koloa Sugar ceased operation in 1996, the extensive irrigation system was no longer in use. The 100% diversion of the Huleia Stream was never revised despite the substantial decrease in need once the Koloa Sugar Company ceased its operations. Thereafter the diverted waters continued flowing from the Huleia and flowed to the Waita Reservoir. The Waita has since become the largest reservoir in the State of Hawaii. There is little question that these waters are waters of the State coming from the South slope of the Kilohana crater in Kahili Mountain. The water runs from the 100% stream diversion into a concrete catchment and then flows through a tunnel in the Haupu Mountain range, ending in the Waita Reservoir. The EIS needs to include HDF's proposed new use and its probable impacts as well as an analysis and evaluation of the degree of impact from the proposed use on the existing downstream users, instream flow, instream habitats, and dependent wildlife species.

Although generally accepted that water use is included in the leases for agricultural parcels, the daily quantity of water needed for the proposed HDF operation (2.93 million gallons per day from the Waita) plus the potable water to be drawn daily from the Maha'ulepu wells far exceeds the typical agricultural use on Kauai.

In *Re 'Iao Ground Water Management Area High-Level Source Water Use Permit Applications and Petition to Amend Interim Instream Flow Standards of Waie'e River and Waihu, 'Iao, Waikapu Streams Contested Case Hearing Hawaii Supreme Court, No. SCAP-30603 August 15, 2012*, the Court concluded that the Water Commission (WRM) erred in balancing instream and noninstream uses, and therefore, the Interim Instream Flow Standards (IIFS) do not properly protect traditional and customary native Hawaiian rights, appurtenant water rights or the public trust. p. 3. Based on the cultural practices as well as the historic and archeologic sites of Maha'ulepu, there is an equal if not greater risk at Maha'ulepu. The EIS needs to consider, environmental concerns, native Hawaiian practices, outdoor and recreational activities, and aesthetic and scenic values, as required by the water code. p. 12-13 Those considerations are equally important the analysis of "offstream public trust uses, such as the public water supply." p. 16. "...the water code and our case law interpreting the code have affirmed the Commission's duty to establish IIFS that 'protect instream values to the extent practicable' and 'protect the public interest'." In *re Water Use Permit Applications "Waiahole II", 105 Hawaii 1, 11,*

93 P.3d 643, 653 (2004); HRS § 174C-71(2)(A). Clearly this must be addressed and study in full by the EIS.

In Kauai Springs the Court concluded that the water Kauai Springs uses for its operations originates from an underground spring located several miles from the Property, 1,000 feet up Kahili Mountain. Kauai Springs apparently "purchases" or "licenses" its water from EAK Knudsen Trust (Knudsen Trust), the owner of the land where the spring is located. The water is transmitted to the Property by a private, gravity-fed system dating back to the 1890s, which is owned by Knudsen Trust and operated by Grove Farm Company (Grove Farm).⁶² Hawaii Supreme Court, SCWC-29440, 28-FEB-2014, pages 3-4.

⁶¹1. Contrary to the findings of the circuit court, the EAK Knudsen Trust does not "own the spring [or] the water." See, e.g., In re Water Use Permit Applications, 94 Hawaii 97, 129, 9 P.3d 409, 441 (2000) ("a public trust was imposed upon all the waters of the kingdom. That is . . . not ownership in the corporeal sense . . . rather, . . . a retention of such authority to assure the continued existence and beneficial application of the resource for the common good."

⁶²2. According to the State Public Utilities Commission (PUC), "[t]he Grove Farm water system originates at one of two tunnels located on the land owned by the [Knudsen Trust] at the foot of Mount Kahili. . . . The water line delivers water to Kahili Mountain Park and a number of domestic and agricultural users on various Knudsen Trust-owned and other parcels on its way to Koloa Town, where it supplies at least eleven residential lots on Wailaau Road."

In Kauai Springs, the State Department of Health offered "[t]here may be the potential for ground or surface water degradation/contamination," and therefore "recommend[ed]" that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.⁶³ The Water Commission further commented that "[g]round-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment." Finally, the Water Commission stated that although a water use permit was not required because the island of Kauai was not a designated ground-water management area, other permits from the Water Commission may be required if the source of Kauai Springs' water was modified:

The island of Kauai has not been designated as a ground-water management area; therefore a water use permit from the Commission is not required to use the existing source(s) or to change the type of water use. However, if the source needs to be modified in any way, a well modification permit from the Commission may be required. In addition, if a pump is to be installed to induce additional water flow, a pump installation permit from the Commission would be required. If the source is modified to induce additional water flow, and the modification results in impacts to surface waters, a petition to amend the interim instream flow standard for affected surface waters must be made and approved prior to use of the water.

Kauai Springs, Supreme Court, SCWC-29440, 28-FEB-2014, page 10.

⁶³6. The State Department of Health (DOH) offered several "environmental health concerns" for the Planning Commission to consider, regarding: 1) sanitary facilities and disposal of wastewater; 2) the water bottling facility's compliance with applicable ventilating requirements; and 3) air pollution control measures. The DOH concluded that "[d]ue to the general nature of the application submitted," it "reserve[d] the right to implement future environmental health restrictions when more detailed information is provided."

⁶⁴7. A "public utility" is defined as "every person who may own, control, operate, or manage as owner, lessee, trustee, receiver, or otherwise, whether under a franchise, charter, license, articles of association, or otherwise, any plant or equipment, of any part thereof, directly or indirectly for public use . . . for the production, conveyance, transmission, delivery, or furnishing of . . . water[.]" HRS § 269-1 (Supp. 2012). Supreme Court, SCWC-29440, 28-FEB-2014, page 14

"because it involves the use of an important public trust resource - fresh water - for personal financial gain," Supreme Court, SCWC-29440, 28-FEB-2014, page 17. This is all relevant to the HDF proposed industrial dairy as HDF's impact is certain to be of much greater consequence to the Hulei Stream flow standards than Kauai Springs ever intended to be.

In fact, in Kauai Springs, the Office of Hawaiian Affairs (OHA) argued that the Commission "uphold its public trust responsibilities by denying Kauai Springs' permit applications without prejudice, until the applicant can show, and the appropriate agencies can concur, that Kauai Springs' proposed use is reasonable-beneficial and will not interfere with public trust purposes." Supreme Court, SCWC-29440, 28-FEB-2014, page 18. Shouldn't Maha'ulepu deserve the same if not greater protection for its rich sites, cave reserve, habitats, delicate ecosystem when a much greater environmental impact is threatened by the proposed industrial dairy than that posed by Kauai Springs.

⁶⁵9. For example, the public trust doctrine requires an applicant to demonstrate the feasibility of alternative sources of water. The findings do not indicate whether Applicant complied with this requirement. "[P]ermit applicants must . . . demonstrate the absence . . . of alternative water sources. Such a requirement is intrinsic to the public trust[.]" Waiahole I, 94 Hawaii 1 at 161, 9 P.3d at 473; see also Kukui (Molokai), Inc., 116 Hawaii 1 at 496, 174 P.3d at 335 ("[The agency] cannot fairly balance competing interests in a scarce public trust resource if it renders its decision prior to evaluating the availability of alternative sources of water."

Supreme Court, SCWC-29440, 28-FEB-2014, page 105

The Court held: "f. To assist agencies in the application of the public trust doctrine, we distill from our prior cases the following principles:²⁵

- a. The agency's duty and authority is to maintain the purity and flow of our waters for future generations and to assure that the waters of our land are put to reasonable and beneficial use.²⁶
- b. The agency must determine whether the proposed use is consistent with the trust purposes:

⁶⁵5. We provide this framework for assistance and do not indicate that it is mandatory or that it precludes other analytical approaches that are consistent with the public trust doctrine.

⁶⁵6. Waiahole I, 94 Hawaii 1 at 138, 9 P.3d at 450.

- i. the maintenance of waters in their natural state;
- ii. the protection of domestic water use;
- iii. the protection of water in the exercise of Native Hawaiian and traditional and customary rights; and
- iv. the reservation of water enumerated by the State Water Code.

c. The agency is to apply a presumption in favor of public use, access, enjoyment, and resource protection.²⁷

d. The agency should evaluate each proposal for use on a case-by-case basis, recognizing that there can be no vested rights in the use of public water.²⁸

e. If the requested use is private or commercial, the agency should apply a high level of scrutiny.²⁹

f. The agency should evaluate the proposed use under a "reasonable and beneficial use" standard, which requires examination of the proposed use in relation to other public and private uses.³⁰ Applicants have the burden to justify the proposed water use in light of the trust purposes.³¹

⁶⁵7. Id. at 142, 154 n.59, 9 P.3d at 454, 466 n.59.

⁶⁵8. Id. at 141, 9 P.3d at 453; Kukui (Molokai), Inc., 116 Hawaii 1 at 490, 174 P.3d at 329.

⁶⁵9. 129 Wai-hole I, 94 Hawaii 1 at 142, 9 P.3d at 454.

⁶⁵10. Id. at 161, 9 P.3d at 473.

⁶⁵11. Kukui (Molokai), Inc., 116 Hawaii 1 at 490, 174 P.3d at 329.

a. Permit applicants must demonstrate their actual needs and the propriety of draining water from public streams to satisfy those needs.³²

b. The applicant must demonstrate the absence of a practicable alternative water source.³³

c. If there is a reasonable allegation of harm to public trust purposes, then the applicant must demonstrate that there is no harm in fact or that the requested use is nevertheless reasonable and beneficial.³⁴

d. If the impact is found to be reasonable and beneficial, the applicant must implement reasonable measures to mitigate the cumulative impact of existing and proposed diversions on trust purposes, if the proposed use is to be approved.³⁵

⁶³²) Wai-hole I, 94 Hawai'i at 162, 9 P.3d at 474.

⁶³³) Id. at 161, 9 P.3d at 473.

⁶³⁴) Kukui (Molokai), Inc., 116 Hawai'i at 499, 174 P.3d at 338.

⁶³⁵) Wai-hole I, at 143, 161, 9 P.3d at 455, 473.

⁶³⁶) The ICA held that the circuit court's COLs ¶ 63 (record was "devoid of any evidence that Kana'i Springs" existing or proposed uses might affect water resources subject to the public trust"), ¶ 71 and ¶ 72 (suggesting that Planning Commission "may" have public trust duties in this case) were "incorrect in that they do not recognize the Planning Commission's public trust duty to consider and review Kana'i Springs' water usage in its water bottling operation." Kana'i Springs, 130 Hawai'i at 423, 312 P.3d at 299. In its Application, Kana'i Springs does not challenge the ICA's conclusion that the Planning Commission had a duty to consider Kana'i Springs' water usage in reviewing its permit application. Rather, Kana'i Springs argues that the ICA erred in vacating the circuit court's COLs because the circuit court recognized the Planning Commission's public trust duties and correctly found that the Planning Commission fulfilled these duties.

Supreme Court, SCWC-29440, 28-FEB-2014, pages 85-88

Alternatives:

In the EISPN, the discussion of alternatives, offering only one other location to be considered, fails to satisfy a real alternative evaluation for an operation that is well known for its significant adverse environmental impacts. Clearly, the EIS should explore at least three other locations at a minimum.

In its discussion of a Confined Dairy Operation Alternative, HDF proposes a "Confined Dairy Operation". Assuming the public trust water rights are adequately protected and preserved, if HDF chooses to proceed with a true CAFO, the EISPN offers only that "the Maha'ulepu location would require additional manure management as nutrients would not be returned to pastures. Additional grain and forages would be imported to sustain dairy cows. The Confined Dairy Operation Alternative would utilize large barns to house and feed the cows. Animals would be confined within the barns and milking parlor; no pasture area would be required. No manure would be deposited on pasture grasses and grass would not be utilized as a locally available feed source." The EIS must address why feed cannot be cultivated on the property, why a methane digester cannot be implemented saving electricity consumption from the Grid that would also help to collect manure, lowering the odor, fly and other pest problems to potentially feasible levels. To address alternatives, the scope of the EIS must be expanded to include these and other related considerations.

Important Agricultural Land (IAL), Hawaii State Constitution, Article XI, Section 3.

The EIS must consider HDF's website boast that it intends to be "the first commercial use of IAL land" is that what the State intended when the provisions of the IAL enactments were adopted? Is IAL land even appropriate for a commercial agricultural operation? This must be addressed by the.

HDF's claim that their proposed industrial dairy will lead to agricultural self-sufficiency must be substantiated in the EIS, especially when the WMP calls for shipping the milk off island, selling the milk wholesale to another company who would then process, bottle and distribute for sale at locations they select.

Sugar cane cultivation has left the proposed farm soils "depleted of essential nutrients" pg 56 HDF WMP, Section 8.1. The EIS needs to substantiate the scientific support for their claim that the proposed dairy would in any way improve the soil at Maha'ulepu. Hooves from 1200 pound cows are in themselves degrading to soil, contributing to erosion and nutrient loss. The addition of nutrients does not remediate soil and the EIS needs to address the claimed benefit of an industrial dairy to the soil composition at Maha'ulepu.

Table 5 - Potential Impact Categories for Liner Failure

1. Any underlying aquifer is at a shallow depth and not confined
2. The vadose zone is rock
3. The aquifer is a domestic water supply or ecologically vital water supply
4. The site is located in an area of solutionized bedrock such as limestone or gypsum.

Considerations for Minimizing the Potential of Waste Storage Pond Liner Failure.

Sites with categories listed in Table 5 should be avoided unless no reasonable alternative. 313 p 6 of 7
NRCS, PJ
April 2012

Table 4 - Potential Impact Categories from Breach of Embankment or Accidental Release

1. Surface water bodies -- perennial streams, lakes, wetlands, and estuaries
2. Critical habitat for threatened and endangered species.
3. Riparian areas
4. Farmstead, or other areas of habitation
5. Off-farm property
6. Historical and/or archaeological sites or structures that meet the eligibility criteria for listing in the National Register of Historical Places.

Cultural Practices, Historical and Archeological Sites are all at risk. The foregoing considerations are from the NRCS manual stapled to the back of the WMP but were not specifically incorporated in or addressed by the WMP. The EIS needs to address these aspects of the NRCS and others as well to cover this risk which from our present evaluation, especially based on the findings of the Custom Soil Resource Report of the NRCS, dated June 5, 2014.

Respectfully,

Robert and Bridget Hammerquist





PRINCIPALS

Francis S. Oda, Arch.D.,
FAA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephien Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Rucicola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeil
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, ARI

OF COUNSEL

Ralph E. Portmore
FACP

Hiroshi Hida
AIA

May 26, 2016

Bridget Hammerquist
bridgethammerquist@hawaiiintel.net

Subject: Hawai'i Dairy Farms
Environmental Impact Statement Preparation Notice
Māhā'ulepū Road
Kaua'i, Hawai'i
TMK: (4)2-9-003:001 portion and 006 portion
(4)2-9-001:001 portion

Dear Bridget Hammerquist:

Thank you for your letter concerning the Environmental Impact Statement Preparation Notice.

HDF is committed to establishing a herd of up to 699 mature dairy cows to demonstrate the pasture-based system as an economically and environmentally sustainable model for Hawai'i. Precision agricultural technology that monitors cows' health, grass productivity, and effluent management will be used to ensure environmental health and safety, as well as best management practices, and help determine the ultimate carrying capacity of the land. With proven success at a herd size of 699, HDF will contemplate the possibility of expanding the herd in the future. For dairy operations with 700 or more mature dairy cows, additional regulatory review and permitting by the State Department of Health is required. At the discretion of HDF, management may choose to expand operations up to the carrying capacity of the land, which is estimated to be up to 2,000 productive milking dairy cows. Permit process compliance would be followed at such time HDF may decide to pursue an expanded operation.

The following responses are offered to your comments:

DAIRY OPERATIONS: Hawai'i Dairy Farms (HDF) will establish and operate a sustainable, pastoral rotational-grazing dairy farm in Māhā'ulepū Valley on the island of Kaua'i to produce fresh, locally available nutritious milk for Hawai'i families. The rotational-grazing method utilizes 100 percent of the cows' manure as natural fertilizer to grow pasture grass as a primary source of nutrition for dairy cows. This cost-effective method will reduce reliance on imported fertilizer and feed. Pasture grass will comprise at least 70 percent of the animals' diet. As a part of the Draft Environmental Impact Statement (EIS), the proposed facilities and operations for the dairy farm are described in Chapter 3.

The Environmental Impact Statement (EIS) Preparation Notice (EISP/N), published January 23, 2015, described the proposed pasture-based rotational grazing system as a "zero-discharge, grass-fed dairy". The term "zero-discharge" under the U.S. Environmental Protection Agency related to concentrated feeding operations

Bridget Hammerquist
May 26, 2016
Page 2 of 14

(CAFO) is a system designed to not discharge pollutants into waters of the United States. As noted previously, the HDF system is designed to utilize 100 percent of the cows' manure on-site. However, nutrients would be introduced to the HDF site with any pose; the Draft EIS identifies the amount of nutrients anticipated from the proposed dairy operations that could pass through to ground and surface waters. Therefore, HDF elected to discontinue use of the term "zero discharge" as it was construed as no nutrients into the system.

The term "grass-fed" was used in the HDF EISP/N. This term was used to identify HDF's intent to utilize a locally-produced feedstock – grass – for more than 70 percent of the dairy herds' diet. In January 2016, the U.S. Department of Agricultural (USDA) Marketing Survey created a narrow legal definition of "grass-fed". The USDA standard defines what animals can and cannot be fed. The Food Alliance, a project of several northwest colleges, believes that when consumers choose grass-fed products there is an expectation that these will come from animals raised on pasture on a forage-based diet. Due to the evolving definition of "grass-fed", the term is not used in this EIS.

The dairy facilities will occupy an area of approximately 10 acres on the western boundary of the site. The developed area "footprint" will be less than 2 percent of the total farm area. Four buildings will be constructed to serve different functions, supported by utilities and infrastructure. Additional building information can be found in Draft EIS Section 3.3.1.

Agricultural infrastructure and utilities required for the dairy operations will include storage tanks and silos, effluent storage ponds, livestock water systems, and drainage improvements. The irrigation system and distribution of livestock water are discussed in Draft EIS Section 3.5, Pasture Management.

The pastoral rotational-grazing dairy provides a local feedstock – grass – as the herd's primary food source. Reducing imported feed stabilizes costs and provides a food source closer to the natural diet of cows. Results of grass trials initially conducted at five sites across four Hawaiian Islands were instrumental in identifying appropriate varieties of grass, and suitable sites to support sufficient "dry matter" grass yields essential to a cow's diet. Additional project-specific trials at the Māhā'ulepū site on Kauai have been conducted for more than 18 months. The results have identified sufficient yield and nutrition to supply 70 percent of the cows' diet; improvements in grass productivity are anticipated to provide up to 85 percent of cows' diet.

The pasture-based model allows cows to move about freely, and to lie down and rest, which is part of the digestion cycle. The animals are managed in social groups known as "mobs", mimicking the natural social order of bovines. Cows spend 22 hours of each 24-hour period foraging on pasture or resting, outdoors in natural light and fresh air. The gently sloped paddocks, walkways and races minimize the energy expended by the mature dairy cows as they graze or are transferred to and from the various paddocks and the mature dairy facility; surfaces of the walkways and cow races are designed to provide a comfortable path under hoof. The management practices and pasture model applied by HDF maximizes grass as the

cows' primary nutrition source and minimizes stress to the animals. Cows tend to be healthier and live longer, productive lives with access to fresh air, high quality feed, and exercise while they forage.

The 470 acres of pasture will be divided into paddocks averaging 3 to 5 acres in size. Smaller paddocks located near the dairy facility will be used as temporary pasture for cows or calves being moved on or off the farm. To protect the water quality of surface water and downstream areas, paddock fences are set back 35 feet from the edge of drainage ways throughout the site. Existing vegetation within the setbacks will be managed or restored to reduce erosion, improve stability of ditch banks, increase net carbon storage, and improve and maintain water quality.

The majority of the pastures will be irrigated with non-potable water and/or diluted effluent through either the pivot irrigation systems or through gun irrigators. Irrigation water supply is provided to the farm from Waita Reservoir, and will be filtered and pumped to the various irrigation components on the farm. The irrigation system is controlled using computer software and GPS receivers to allow very precise application of irrigation and/or diluted effluent on the pasture. The pivots can rotate and apply irrigation water and/or diluted effluent at different rates depending on the actual irrigation needs of the farm.

NRCS provides technical guidance on applying agricultural waste depending on the desired use of the waste. Reflected in the title of the livestock waste guidance for Hawai'i is the parenthetical inclusion of the word "nutrients." Where waste is utilized as a resource, it is being used for the constituent components that provide benefit.

The NRCS Conservation Practice Standard 590, Nutrient Management, applies to commercial fertilizers, organic by-products, waste water, organic matter, and irrigation water. Nutrient management is the practice of managing the amount, rate, source, method of application, and timing of plant nutrients and soil amendments. The timing and application of nutrients will correspond with plant uptake, soil properties and weather conditions. For more information on nutrient balance management see Draft EIS Section 3.5.3, and Draft EIS Appendix D.

The effluent storage ponds are sized to accommodate 30 days of storage for up to 2,000 mature dairy cows, and over 85 days of storage for 699 mature dairy cows. It will be highly unlikely that the storage pond will be full at any time for the contemplated 2,000-cow dairy, and nearly impossible for the committed 699-cow dairy. Throughout the less than 30-day storage period, effluent is planned for application every four days, and the slurry application is expected at least once every 45 days, to ensure that the ponds are kept at manageable levels.

Cows lactate milk following the birth of calves. Newborn calves will be housed on the Māhā'ulepū site and provided essential colostrum and nutrients for a healthy start. During the calves' initial 90 days, they will be transitioned to pasture at HDF before transfer to ranches on Kaua'i to be raised off-site. The committed herd size of 699 mature dairy cows at the Māhā'ulepū site applies to mature dairy cows. Animals in various stages of lactation and rest will be transferred between HDF and

other partner ranches as needed for animal health and dairy productivity. This will benefit both the dairy and infuse the beef market in Hawai'i with a new, local source of pasture-raised calves. Male calves will become part of the beef cattle herd; heifers (young female calves that haven't given birth) will be raised until ready to return to the HDF herd as a birthing/mature dairy cow. For more information on off-site herd management, refer to Section 3.7 of the Draft EIS.

Health of the herd is of primary importance as the success of a dairy relies on cows effectively producing quality milk. All cows will be treated with a high standard of care. Dairy managers and caretakers will be trained and competent in handling animals to minimize stress and ensure the herds' welfare. A licensed veterinarian may prescribe use of antibiotics approved by the Food & Drug Administration (FDA) for treatment of illnesses. Adherence to guidelines that prohibit milk from cows undergoing antibiotic treatment will ensure no adulteration of milk. Routine laboratory tests of milk for traces of antibiotic residue will be conducted. HDF will not inject cows with bovine growth hormone, referred to as rBST or rBGH.

SOILS: Soil is an ecosystem that can be managed to provide nutrients for plant growth, to absorb and hold rainwater for use during dryer periods, to filter and buffer potential pollutants from leaving fields, to serve as a firm foundation for agricultural activities, and to provide habitat for soil microbes to flourish and diversify to keep the ecosystem healthy. Two rounds of independent soil sampling were undertaken at HDF to understand and characterize available soil nutrients and conditions. Section 4.3 of the Environmental Impact Statement (EIS) characterizes soil conditions, and anticipated impacts from effluent and supplemental nutrient application. Recommendations from Dr. Russell Yost and Nicholas Krueger of the University of Hawai'i at Mānoa are summarized. Their baseline nutrient report is included as Appendix C of the Draft EIS.

Soil conservation is a core principal behind establishment of the NRCS, which was formed out of the Soil Conservation Service to acknowledge its expanded role in watershed-scale approach using science-based tools and standards in agronomy, engineering economics, wildlife biology and other disciplines to aid landowners in implementation of conservation practices. NRCS conservation practices are listed in Chapter 3, Section 3.2; these practices codes identify design and construction standards related to drainage, materials, operations and applicable engineering standards. HDF will follow the developed Conservation Plan, which was approved by the West Kaua'i Soil & Water Conservation District in December, 2013.

The United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) has mapped and classified soils for more than 95 percent of the United States. Comments received during the initial scoping for this EIS included a "Custom Soils Resource Report for Island of Kaua'i, Hawai'i." The report was generated from the USDA NRCS website, which allows any internet user to define an area of interest, customize data results, and generate a Custom Soil Resource Report. The user can select or deselect parameters based upon which data the user would like to display. These user-generated reports are not evaluated by NRCS.

The NRCS soils classifications and descriptions provide a good information base, however, in-field soils testing is needed to identify existing soil nutrient levels and conditions. The most abundant soil types at the HDF site are Kalihi Clay at 32 percent, Kaena Clay Brown Variant at 29 percent, and Luuluaie Clay at roughly 14 percent of the dairy site. Laboratory analysis of soil samples collected in 2014 identified levels of pH, phosphorus, nitrogen, potassium, calcium, magnesium, organic matter, salinity, micronutrients and other constituents. The results illustrate that the soils are depleted of nutrients, which is typical for lands formerly used for sugarcane. The soil nutrient status and fertility demands of the primary crop, Kikuyu grass, were used to identify the quantities of nutrients required for productive grass growth. The soils data provide a baseline to guide adaptive nutrient management throughout establishment and maturity of the dairy.

A second round of field sampling was conducted in 2015, and focused on evaluation of soils characterized as "poorly drained", and established a quantitative baseline of soil salinity and sodicity to provide for future monitoring of soil health with application of manure effluent. Laboratory analysis determined electrical conductivity and exchangeable sodium percentage, in addition to nutrient levels of nitrogen phosphorus calcium, magnesium, and potassium.

Poorly drained is not an indication of low or poor infiltration. Infiltration refers to the ability of water to enter the soil surface, whereas "drainage" refers to the movement of water within or from the soil profile. Poorly drained soils typically have low hydraulic conductivity, or a slow rate of groundwater movement through the soil. This slow movement can create anaerobic conditions, which typically result in higher rates of denitrification. This is the conversion of potentially nitrates and nitrites to gaseous forms, which reduces the potential for impacts on waterbodies. In this way, "poorly drained" soils may represent less risk of nitrate and nitrite leaching to associated waterbodies than "well drained" soils (Yost, 2016).

As a result of reduced movement of water through the soil profile, the mobility of nutrients such as potassium and phosphorus is also reduced. Soil types at the HDF site are known to adsorb and retain large amounts of phosphorus. Under the NRCS phosphorus leaching index for Hawai'i soils, HDF soils show low risk for leaching. With low risk, phosphorus can be applied at rates greater than crop requirements if manure or other organic materials are used to supply nutrients.

The dairy's focus on robust and healthy grass growth will build organic matter in soils through use of manure as a natural fertilizer. Soil can incorporate carbon from the atmosphere, which benefits soil health. According to recent studies in the Soil Science Society of America Journal, the conversion of formerly tilled cropland to grazed pasture can drive substantial accumulation of organic carbons in soil, with a potential to offset up to one-third of the annual increase in atmospheric carbon dioxide. The potential soil organic matter and carbon dioxide sequestration benefits are likely greatest in highly degraded soils in warm subtropical climates, partly due to long pasture-growing seasons. Long-term soil impacts are anticipated to result in improvement to the physical, chemical, and biological condition of the soil.

ARCHAEOLOGICAL AND CULTURAL: The Hawai'i Dairy Farms (HDF) project is subject to a historic preservation review by the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD) under HRS Chapter 6E and Chapter 13-284. An Archaeological Inventory Survey (AIS) and a Cultural Impact Assessment (CIA) were conducted by Scientific Consultant Services (SCS) for the proposed project. EIS Sections 4.7 and 4.8 provide an evaluation of archaeology and cultural resources, with technical studies in Appendix G and H.

A total of sixteen historic properties were identified through a pedestrian survey of the project area and an extended survey area of 100 meters of the northern boundary. Six historic-era sites occur in the project area and 10 sites occur in the extended survey area. Only one of the sites is believed to be associated with pre-Contact and/or early historic times, State Site 50-30-10-2250, the agricultural heiau, and State Site 50-30-103094, a carved petroglyph boulder, are all located outside of the project area. The remaining sites consist of historic-era bridges, ditches, culverts, retaining walls, and a flume system dating from the 20th century and are affiliated with sugarcane cultivation.

That a majority of the documented sites are related to the historic-era is not surprising, given the massive landscape modifications that occurred during intensive sugarcane cultivation on the valley floor. Even historic era cultural materials associated with the many Land Commission Awards in the project area were non-existent, as explored through survey and subsurface exploration.

The sixteen historic properties have been assessed for significance by the archaeological consultant and the dairy project is anticipated to have no impact on these sites. No further archaeological work is recommended for the sites. Two of the sixteen sites are considered significant under multiple criteria, but occur outside the project area on lands owned by a different landowner. Both sites will not be adversely affected by the proposed dairy project. No site is related to burials, and no bonex were found. Such sites have been reported along coastal areas in sand dunes.

The cultural assessment examined the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place. Information received from the community indicates the Māhā'ulepū Ahupua'a, has been and is currently used for traditional cultural purposes. However, the dairy project area has not been included in these activities. It is clear that the gathered plants, trails, State Site 50-30-10-2250, the agricultural heiau, and State Site 50-30-103094, a carved petroglyph boulder, are all located outside of the project area.

The project will be fully enclosed by perimeter fencing along the boundary of leased premises, which will ensure that project activities and any related impacts are contained within the project area. Based on the research and comments received from the community, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights or any ethnic group related to numerous traditional cultural practices will not be impacted by establishment of the dairy.

WATER QUALITY: Technical consultants conducted field studies and analysis on groundwater and surface water resources in the area, and evaluated potential impacts from the proposed Hawai'i Dairy Farms (HDF) actions. Existing conditions and probable impacts are presented in the Draft Environmental Impact Statement (EIS) sections 4.16, 4.17, 4.22 and 4.23; the technical reports are in Appendices E and F. The location and connectivity of groundwater bodies were determined, and the quality of groundwater and surface water was documented.

GROUND WATER

Hydrology: The area's hydrology is shaped by its geology. The Kōloa area was built by Napali formation lavas of the Waimea volcanic series. Surface lavas of the Napali formation exhibit extensive weathering which may extend to considerable depths – as great as 400 feet below sea level. Weathered lava in the area is typically Saprolite, a soft, thoroughly decomposed rock. The Māhā'ulepū Valley floor is filled with alluvium, which generally extends about 60 feet under the surface and is underlain by highly weathered lava at a shallow depth by secondary eruptions of the Kōloa series. The alluvial material is highly weathered lava and is comprised of dark brown to black silty clay and clayey silt.

The groundwater and surface water analysis conducted for this Draft EIS identified two groundwater bodies within the valley: (1) groundwater located in a deep aquifer system within unweathered volcanic material, which is buried beneath thick alluvium that covers the valley floor, and (2) groundwater in the thick alluvium. The aquifer of highest value and use resides deep within the unweathered volcanic material. The alluvial material blanketing the valley floor is less permeable than the unweathered volcanics by orders of magnitude. Hydraulic conductivity represents the ability of soils to transport water given a hydraulic gradient, and is expressed in units of feet per day. It is a measure of how easily water will move within the ground. The hydraulic conductivity of the alluvium that underlies Māhā'ulepū Valley and the HDF site ranges from 10.5 – 50 feet per day. The hydraulic conductivity of soils in the adjacent Kōloa-Po'ipū region is on the order of 201 – 500 feet per day. Therefore, water movement through soils under the proposed dairy site is 10 times slower than the neighboring area.

The groundwater and surface water analysis for this Draft EIS examined whether the two waterbodies within Māhā'ulepū may be connected. Four studies were conducted to determine whether the shallow groundwater in the alluvial material might discharge into the lower aquifer confined in the unweathered volcanic material at depth, which is the source of potable water. The results demonstrate there is no hydrologic connection between the deep aquifer in the unweathered volcanic series and the groundwater body in the alluvium. Section 4.1.6.1 of the Draft EIS provides further detail.

Potable Water: Once fully operational at the committed herd size of 699 mature dairy cows, the dairy will utilize 30,000 gallons per day (gpd), which is 0.03 million gallons per day (MGD), of potable (drinking water quality) water from groundwater provided through an on-site well. The State of Hawai'i Department of Health Milk Rules require that potable water be used for milk production, both in the milking

parlor and for milking operations; another potable water use will be for livestock drinking water. Should HDF decide, in the future, to expand to the contemplated herd size of up to 2,000 mature dairy cows, potable water demand will increase to 84,800 gpd (0.085 MGD). These demands are a small fraction of the 3 MGD produced by the on-site, existing Māhā'ulepū 14 well during the sugarcane plantation era. All potable water used as wash water will be re-applied to pasture and thus remain a part of the evapotranspiration cycle. Long-term groundwater supply impacts are not anticipated to be significant.

The assessment concludes that the modest potable water demand from the dairy operation, and the 4,500-foot distance between the Māhā'ulepū 14 well and the County's Kōloa F well, will result in no adverse impacts to ongoing use of groundwater in the volcanic aquifer layer, which is the source of potable water. Groundwater in the alluvium will not impact the County drinking water well.

Though the waterbody in which the County wells occur is confined and hydrologically separated from shallow groundwater in the Māhā'ulepū Valley, HDF established a 1,000-foot setback surrounding the Kōloa F well in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section.

Groundwater Monitoring: Four groundwater monitoring wells were installed by HDF into the shallow groundwater within the alluvium to allow monitoring of water quality. Baseline data on water quality for both groundwater in the alluvium and groundwater in the deep aquifer were documented. Future monitoring will allow comparison between conditions prior to, and during, HDF operations. Results from the monitoring program will be shared with the Department of Health Clean Water Branch, dairy neighbors and the local Kaua'i community.

Regional Water Demand: The adjacent, developed Kōloa-Po'ipū region shows large and increasing demand for potable water for community and resort development. The State Department of Economic Development and Tourism (DBEDT) projects the population of Kaua'i will increase county-wide by 17,300 residents by 2030. The South Kaua'i population is estimated to reach 16,855 in 2035, when it is projected to encompass 19.2 percent of the County population. For the South Kaua'i region (the Kōloa - Po'ipū - Kalāheo districts), water use in 2035 is projected to be 3.24 MGD, an increase of nearly 1 million gallons per day. An evaluation of the island's infrastructure capacity for projected growth in population (both residents and visitors) through the year 2035 predicts the island will be facing a shortage of well water. Water resources must therefore be carefully managed to accommodate the projected growth and water demand anticipated in the region through 2035.

SURFACE WATER

The State Department of Land and Natural Resources Commission on Water Resource Management has established surface water hydrologic units for managing surface water resources. The project area is located within the Māhā'ulepū Surface

Water Hydrologic Unit, which features relatively high precipitation with relatively low stream discharge. There are no perennial streams in the Māhā'ulepū watershed.

The HDF site is located on the bottom-land of the upper Māhā'ulepū Valley, which is fed by several intermittent streams coming off of the south slope of the Ha'upu Ridge. These normally dry streams converge into man-made channels running through the HDF site across the valley floor, and meet a concrete ditch that parallels lower Māhā'ulepū Road. This ditch, named Waiopili Ditch, is joined by a reach from the west that originates at a small unnamed reservoir, and continues off site towards the south.

Potential Impacts from Construction: The dairy facility and associated infrastructure will be constructed in a 10-acre area located along the site's western boundary. Built facilities within this area will total less than 2 percent of the HDF site. A Stormwater Pollution Prevention Plan (SWPPP) has been developed as part of the application for the National Pollutant Discharge Elimination System (NPDES) – Construction Stormwater General Permit. Management controls will include: minimizing exposure of disturbed surfaces; monitoring and repair of structural controls; and prohibiting leaking or poorly-maintained construction equipment and machinery. Structural controls to be utilized during construction will include: silt fence installed in key locations; sand bags barriers in swales; and geotextile filter fabric and sediment logs around drain inlets.

Surface Water Quality: The Kaua'i Chapter of the Surfrider Foundation began collecting water samples in Waiopili Ditch near the bridge accessing Makauwahi Cave Reserve in April of 2014. The group reported high levels of enterococcus to the State Department of Health (DOH) and provided its data, however, DOH was unable to utilize the data as it did not meet Clean Water Branch (CWB) quality assurance/quality control requirements, and it could not be used for regulatory purposes. CWB had not conducted water quality sampling for either nearshore recreation waters at the terminus of Waiopili Ditch, or of surface waters in the Māhā'ulepū Surface Water Hydrologic Unit as the remote areas are on private lands.

Complaints from the public citing the high levels of enterococcus in Waiopili Ditch and concerns about the proposed dairy prompted CWB to conduct a "Sanitary Survey" of the Māhā'ulepū and adjacent watersheds. DOH conducted water sampling within the Waiopili Ditch and areas upstream, and initiated a series of investigations into water quality issues. Following EPA standards for a Sanitary Survey, DOH has completed Part I of its report: *Waiopili Ditch Sanitary Survey, Kauai, Part I*. The Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors in the indicator levels found in ditches running through Māhā'ulepū Valley. The dense canopy along the makai end of Waiopili ditch blocks ultraviolet rays, which could help reduce bacteria levels. CWB noted that Waiopili Ditch is a man-made drainage on private property, and is not an inviting recreational body of water utilized by people. The Sanitary Survey can be accessed on the DOH Clean Water Branch website under "Library" (<http://health.hawaii.gov/cwb/>).

Long-term Operations, Setbacks and Buffers: Normal ongoing farming and ranching activities are exempt from the Clean Water Act Section 404. HDF received confirmation of exemption for maintenance of existing drainage ditches from the Honolulu District, U.S. Army Corps of Engineers (USACE) in 2013. Additional practices are anticipated to fall under the exemption for construction or maintenance of existing or new animal walkways, stream crossings, and farm roads in accordance with best management practices.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to reduce runoff that could carry particles into surface waters. Fences will be erected 35-feet from the top of drainage way (totaling 70-feet in width) to keep cows away from surface waters. Vegetated buffers will be established between the fences and drainageways to create filter strips that could capture particulates during stormwater runoff events. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used in these areas as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways.

Nutrients from Effluent, Irrigation and Commercial Fertilizer Application: The natural fertilizer from manure deposited directly to pasture and effluent collected from the milking parlor is insufficient to meet the agronomic need of the pasture grass crop with the committed herd size of 699 mature dairy cows, and supplemental commercial fertilizer will be required. Nutrients required to sustain the 470 acres of pasture are the same for the future contemplated herd size of up to 2,000 mature dairy cows, though the proportion of nutrients supplied as natural fertilizer (manure and effluent) and commercial fertilizer changes. With the potential future contemplated herd size, supplemental nitrogen will be needed, and a small excess of phosphorus could occur. However, with an increase in dry matter (DM) yield (a measure of grass growth) of one ton per acre, phosphorus would be in a deficit and require commercial supplementation. Grass yields are anticipated to increase more than three tons DM per acre with dairy establishment, from the current 16.2 tons DM per acre to 20 tons DM per acre. Section 4.23 of the EIS provides additional information.

The groundwater and surface water analysis conducted for the Environmental Impact Statement estimated that surface water from Māhā'ulepū will carry three times more nutrients than groundwater, due to the poor permeability of the alluvium. Groundwater can discharge from the alluvium when it rises in wetter periods and intersects the deep drainage ditches. Such discharge to the channels could occur on an episodic, seasonal basis when rainfall exceeds 0.8 inches.

The groundwater engineer estimated potential nutrient pass-through to groundwater from the HDF nutrient budget at two percent of nitrogen (totaling 10,000 pounds per year), and one percent of phosphorus (totaling 900 pounds per year). Again, this nutrient run-off would not occur as chronic daily release, rather, the runoff contributions would be limited to periods of the major rainfall over 0.8 inches. Such rainfall events are estimated to occur approximately three percent of days, or an average of 10 days annually. Per best practices, no effluent application would be conducted during such weather events.

To provide perspective, nutrient inputs from the adjacent Kōloa-Po'ipū region were also calculated. Nitrogen input to the marine environment in the Po'ipū region is calculated to be 38,510 pounds annually, or 3.5 times more than the estimate of potential nutrient throughput from HDF. Phosphorus for both domestic wastewater and landscape fertilization in the region is estimated to be 1,260 pounds annually, or 1.4 times greater than the potential discharge from HDF. The nutrient inputs from domestic uses in the Po'ipū region are constant throughout the year and no mitigation is applied to reduce the quantities.

Impacts to the Nearshore Marine Environment. An assessment of groundwater and surface water interaction with the marine water downgradient from the dairy site was conducted by Marine Research Consultants, Inc. (MRCI). Surface water from the Waiopili Ditch provides the majority of freshwater input in the immediate coastal area. Water chemistry measurements made by MRCI identified mixing of ditch water occurs rapidly and within a short distance of the shoreline.

The minor contributions of nutrients from episodic rainfall anticipated to occur just 10 days annually from dairy operations will not adversely affect ocean water quality and the marine environment. The nearshore area is a highly mixed environment which actively disperses inputs within several meters from shore. Comparing nutrient constituents in surface water samples taken from the HDF site and the agricultural ditches down gradient to nutrients sampled in the nearshore ocean water revealed that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is likely a result of both physical mixing of water masses and toxicity from saline water. In any event, the elevated levels of indicator bacteria do not extend beyond the shoreline. Baseline water quality data and the surface and marine water impact report is included in the Draft EIS as Appendix F.

Establishment of Water Quality Monitoring. Long-term ocean water quality monitoring will be instituted in conjunction with the surface water quality monitoring, to regularly sample and analyze the nearshore ocean waters. The ongoing testing program will provide feedback to the dairy management team to help ensure that nutrients and bacteriological constituents are not being released at levels of environmental concern. Data from the nearshore water monitoring program will be shared with the DOH CWB, dairy neighbors and the local Kaua'i community.

ALTERNATIVES: As a part of the DEIS, alternatives were evaluated that could attain the objectives of the action's purpose and need, and were compared with environmental benefits, costs, and risks of each reasonable alternative against those of the proposed dairy project. Further discussion of alternatives can be found in DEIS Section 6.

The DEIS evaluates alternatives that could attain the objectives of the action's purpose and need, and compares environmental benefits, costs, and risks of each reasonable alternative against those of the proposed action. Additionally, reasonable land use alternatives that emerged from public input during the project scoping phase are documented and briefly discussed. The alternatives that do not meet the project purpose are not advanced for analysis of environmental benefits,

costs, and risks. The Environmental Impact Statement Rules, Hawai'i Administrative Rules Chapter 11-200 (HRS 11-200) requires a discussion of alternatives that could attain the objectives of the action, regardless of cost. There is no requirement for the alternatives analysis to consider every possible land use.

Four possible land uses that would not meet the project purpose are discussed. Rezonning the land for resort or residential development, or a potential conservation condemnation are two uses that were examined and eliminated from analysis. These options would not be reasonably viable given the existing private land tenure and existing zoning. Two additional alternatives were considered as reasonable land uses as they could be permitted within the existing State Land Use Agricultural District and County Agricultural Zoning District. These options include Agricultural Park with Processing Center, and development of an Agricultural Subdivision. The alternatives were examined and eliminated from further analysis, however, as they would not fulfill the project purpose.

The analysis, therefore, focuses on alternatives that meet the project purpose. Rigorous exploration and evaluation of the environmental impacts of the alternatives, including those that might enhance environmental quality or avoid, reduce or minimize some or all of the adverse environmental effects, costs and risks. These alternatives include: (1) the development of a Conventional Feedlot Dairy (a non-pasture-based dairy) at the same location; (2) development of the Pasture-Based Dairy at an Alternative Location on Kaua'i; and (3) milk products processing by HDF. The alternative of "No Action" is also evaluated.

The alternatives analysis provides a comprehensive evaluation of the range of potential alternatives, including the two alternative development scenarios. Although the alternatives are potentially reasonable uses under existing zoning and neighboring uses, each fails to comprehensively fulfill the project requirements defined by the eight Project Objectives and the four established Evaluation Criteria (Chapter 2, Sections 2.3.3 and 2.3.4).

The essential differences as compared to the proposed action are highlighted in the following statements.

- Only one of the alternative actions (conventional feedlot alternative) would create a commercial scale dairy operation in Hawai'i, with the capability to produce 10 percent of the State's fresh milk demand thus reducing dependence on imported milk (Objective 1). This alternative, however, would not reduce reliance on costly imported fertilizer and feed (Objective 2), grow local quality grass as a primary feedstock (Objective 3); and would not utilize 100 percent of manure on site as nutrients to grow forage for dairy cows (Criterion 4).
- None of the alternatives would secure a dairy location that meets the requirements for a pastoral, pasture-based grazing dairy: sufficient contiguous land area; available long-term land tenure; adequate potable water supply; suitable soil properties; gentle slope conditions; and accessibility (Criterion 1).

- One alternative (Agricultural Park) could potentially generate new long-term employment in the agricultural sector on Kaua'i in a wide range of positions including pasture agronomy/soils science, environmental resources management (Criterion 2).
- The Agricultural Park alternative could also develop sustainable food production utilizing Important Agricultural Lands, demonstrating the importance of long-term agricultural leases and capital investment for agricultural infrastructure, water systems and support facilities. (Criterion 3). However, after years of trying, it appears there was limited interest in such a venture.
- Finally, addressing the range of potential environmental impacts (natural, cultural, social and economic) (Objective 8) the two alternative development scenarios would generate fewer beneficial impacts and produce impacts that could potentially exceed those anticipated from the proposed project.

In contrast to the other options considered, the planned agricultural operation of Hawai'i Dairy Farms, was determined to be the most viable option and is the preferred alternative. Of all the alternatives considered, this is the only approach that achieves project objectives and meets each of the four Evaluation Criteria.

- Hawai'i Dairy Farms will create a commercial scale pasture-based dairy operation in Hawai'i, with the capability to provide more than 1,000,000 gallons of the fresh milk demand, reducing dependence on imported milk (Objective 1).
- The planned dairy location meets the requirements of minimum land area, soil properties, slope conditions, water supply, land tenure and availability, and accessibility (Criterion 1).
- The planned action will generate new long-term employment in the agricultural sector on Kaua'i, including pasture agronomy/soils science, veterinary and animal husbandry, environmental resources management, milk/milk processing, and dairy business management (Criterion 2).
- Sustainable food production utilizing Important Agricultural Lands (Criterion 3) will occur with the proposed action, demonstrating the importance of long term agricultural leases, and the ability to draw capital investment for agricultural infrastructure including water systems and support facilities (Criterion 3).
- Address the range of potential environmental impacts by utilizing 100 percent of manure as natural fertilizer to grow the majority of food for cows (Criterion 4). The alternatives evaluated would generate fewer beneficial impacts and produce impacts that could potentially exceed those anticipated from the proposed project.
- Creating an economically viable pasture rotational-grazing model maintains agriculture, retains open space, and provides buffer between highly utilized resort and residential development and sensitive natural or cultural resources (Objective 8).

This response letter accompanies your copy of the Draft Environmental Impact Statement (EIS). The Draft EIS is available on the OEQC website at the following URL, search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAU>

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

DEIS Comment HDF Dairy Proposal for Mahaulepu - Part 2 of 2

Bridget Hammerquist <bridgethammerquist@hawaiiinternet.net>

Mon 7/25/2016 9:39 PM

To: doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; HDF <hdf@group70mt.com>; Jim Garmatz <jim@hawaiidairyfarms.com>;

Terrie Hayes <terriehayes@gmail.com>;

Cc: Sarah Matsumoto <Sarah@tebbuttlaw.com>; Charlie Tebbutt <Charlie@tebbuttlaw.com>;

2 attachments

HDF WELL COMPLETION REPORT - PART 1.pdf; Koloa Wells, Kauai County SWAP Report.pdf;

Here are the remaining attachments.

Mahalo,
Robert and Bridget Hammerquist



State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
WELL CONSTRUCTION

For Official Use Only:

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may request a copy of the report and attachments. If you need assistance, please contact the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0225. For updates to this form or additional information, please visit our website at <http://www.state.hi.us/dlnr/wrm/>

1. State Well No.: 2-5425-016 Well Name: HDF-1 Island: Kauai
2. Well Location Address: Mahalepu Tax Map Key: (4) 2-9-003:001
3. Drilling Company: Oasis Water Systems, Inc.
4. Drilling method used during construction: Rotary Percussion Other (describe)
5. Date Well Construction (drilled, cased, grouted) completed: 6/16/2015
month/day/year
6. Was the subject well cored? Yes No
7. Step-Drawdown Test completed? No Yes Attach Step-Drawdown Test form (12/17/97 SDPTD Form)
8. Constant Rate Aquifer Test completed? No Yes Attach Constant Rate Aquifer Test form (12/17/97 CRPTD Form)

Water Level Data:	Reference point elevation	Depth to water (feet)	Water Level ft. above mean sea level (note below)	DateTime of measurement
9. Initial encountered during drilling (this should also be filled in on the driller's log)	<u>Top of casing = 91 ft. msl</u>	<u>4.8</u>	<u>86.2</u>	<u>1/30/15</u>
10. Just prior to casing installation	<u>Top of casing = 91 ft. msl</u>	<u>6.95</u>	<u>84.05</u>	<u>2/4/15</u>
11. After casing installation (this information should be before any pump tests are performed with casing installed)	<u>If this reference point is not the benchmark, the difference between the benchmark and this point is: <u>2.67</u> ft.</u>	<u>10.79</u>	<u>81.21</u>	<u>6/26/15</u>

note: for all elevations referenced to mean sea level, take the ground elevation (surveyed or estimated if survey not required at this time) and subtract the depth to the water level.

12. As-built section filled in completely (refer to attached sheet)
13. Driller's Log filled in completely (refer to attached sheet)
14. Well location info filled in completely (refer to attached sheet)
15. Well elevation certification filled in completely (refer to attached sheet)
16. Photograph of well and concrete pad showing benchmark on concrete pad attached
17. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)
18. Remarks:

Licensed Driller (print) Bridget Hammerquist C-57 Lic. No. 21457
Signature [Signature] Date 6/24/2015

14. WELL LOCATION AND CURRENT OWNERSHIP INFORMATION

STATE WELL NO. 2-5425 016

Well coordinates (decimal degrees to at least 5 decimal places, example Latitude 21.334303, Longitude -157.962447)

Latitude 21° 54' 44.79" N Longitude 159° 25' 07.73" W

Was a GPS used? yes no (if no, specify how you got these coordinates: Google Earth)

Current well owner same as application or new (fill in below)

Company Name _____ Contact _____
 Address _____
 City _____ State _____ Zip _____
 Business Phone _____ Residential Phone _____ Fax _____
 E-mail Address _____ Company Website _____

Current land owner same as application or new (fill in below)

Company Name _____ Contact _____
 Address _____
 City _____ State _____ Zip _____
 Business Phone _____ Residential Phone _____ Fax _____
 E-mail Address _____ Company Website _____

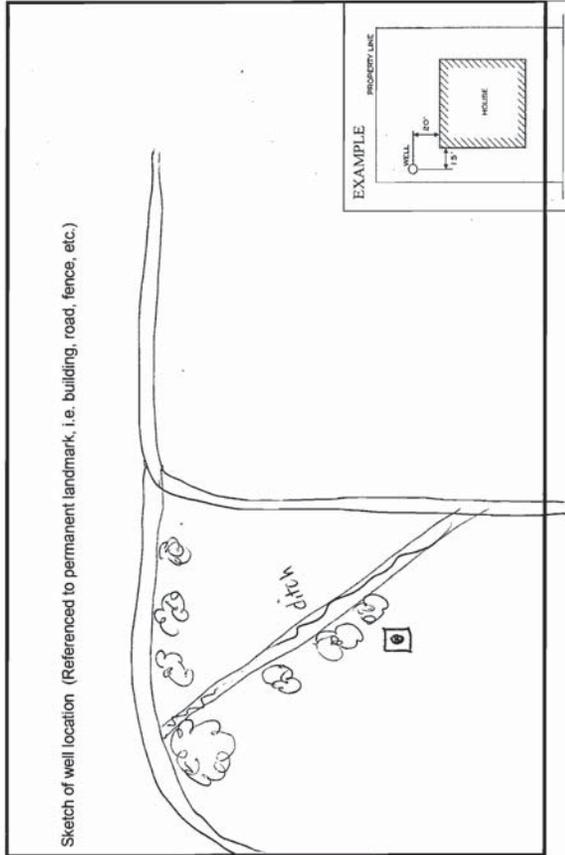
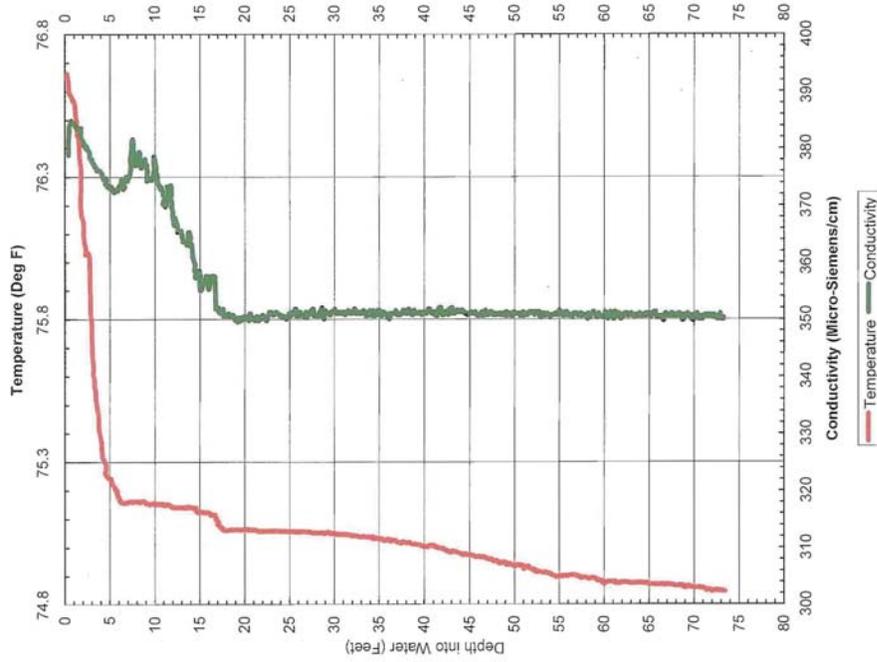


Figure 8. Conductivity and Temperature Profile of the HDF-1 Monitor Well on May 13, 2015



HDF-1
2-5425-016



State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
WELL COMPLETION REPORT - PART I
Well Construction



Instructions: Please print in ink or type and send completed report with attachments, if applicable to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may request that you provide additional information. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0225. For updates to this form or additional information, please visit our website at <http://www.state.hi.us/dlnr/cwmv>

For Official Use Only:
COPY

1. State Well No.: 2-5425-016 Well Name: HDF-2 Island: Kaui
 2. Well Location Address: Makalepu Tax Map Key: (4) 2-9-003:006
 3. Drilling Company: Oasis Water Systems, Inc
 4. Drilling method used during construction: Rotary Percussion Other (describe)
 5. Date Well Construction (drilled/cased/grouted) completed: 6/18/2015
month/day/year
 6. Was the subject well cored? Yes No
 7. Step-Drawdown Test completed? No Yes **Attach Step-Drawdown Test form (12/17/97 SDPTD Form)**
 8. Constant Rate Aquifer Test completed? No Yes **Attach Constant Rate Aquifer Test form (12/17/97 CRPTD Form)**

Water Level Data:	Reference point elevation	Depth to water (feet)	Water Level (sea level) (see note below)	Date/time of measurement
9. Initial encountered during drilling (this should also be filled in on the driller's log)	<u>700.90</u> ft. msl	<u>9.5</u>	<u>80.5</u>	<u>1/19/15</u>
10. Just prior to casing installation	<u>700.90</u> msl	<u>9.3</u>	<u>80.7</u>	<u>2/3/15</u>
11. After casing installation (this information should be before any pump tests are performed with casing installed)	<u>611.4</u>	<u>14.82</u>	<u>79.6</u>	<u>6/26/15</u>

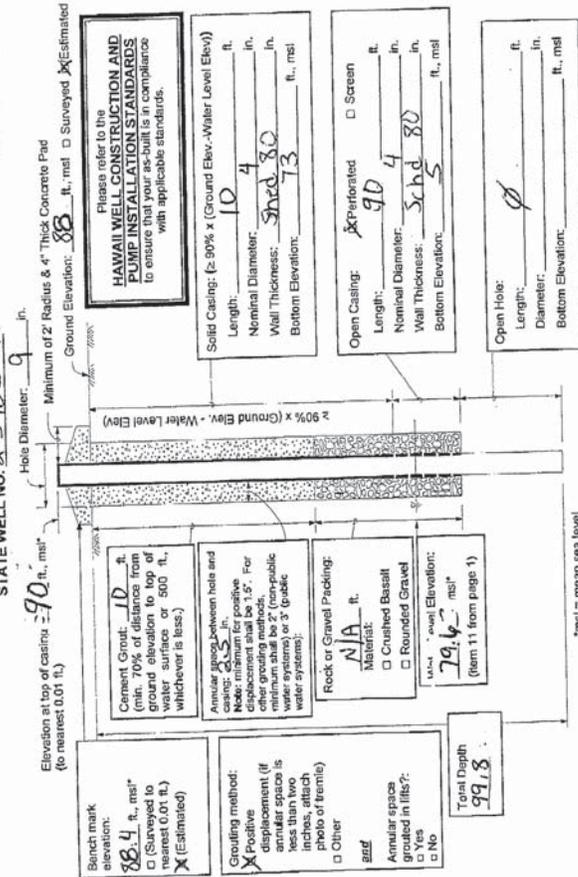
Chloride: 45.0 ppm Temperature: 76.2 °F
note: for all elevations referenced to mean sea level, take the ground elevation (surveyed or estimated if survey not required at this time) and subtract the depth to the water level.

12. As-built section filled in completely (refer to attached sheet)
 13. Driller's Log filled in completely (refer to attached sheet)
 14. Well location info filled in completely (refer to attached sheet)
 15. Well elevation certification filled in completely (refer to attached sheet)
 16. Photograph of well and concrete pad showing benchmark on concrete pad attached
 17. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)
 18. Remarks: Elevation survey to follow

Licensed Driller (print) Darryl Simmons C-57 Lic. No. 21457
 Signature [Signature] Date 6/29/2015

12. AS-BUILT WELL SECTION (Please attach as-built if different from diagram provided below)

STATE WELL NO. 2-5425-017



For Official Use Only:

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
DRILLER'S LOG



Well Number: 2-5425-017 - HDF-2

Depths (ft.)	Rock description, Water level, etc.	Dates	Depths (ft.)	Rock description, Water level, etc.	Dates
0 to 30	soft dirt w.l. - 8.5 below TOC	01/19/2015			
30 to 40	weathered	01/20/2015			
40 to 45	soft dirt	01/20/2015			
45 to 60	grey clay	01/20/2015			
60 to 75	hard rock	01/21/2015			
75 to 85	weathered blue rock	01/21/2015			
85 to 100	soft	01/22/2015			
	w.l.=9.3	2/8/2015			

Remarks:

Solid Casing Material:

- Carbon Steel: compliant with (check one or more): ANSI/AWWA C200 API Spec. 5L ASTM A53 ASTM A139
- And compliant with (check one or more): ASTM A242 or A606 Type E Type S Grade B Other
- Stainless Steel: (check one): ASTM A409 (production wells) ASTM A312 (monitor wells) Schedule 80
- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) Schedule 40 Schedule 80 Schedule 120
- PVC Plastic conforming to ASTM F480 and ASTM D1785 or ASTM D2241: (check one): Schedule 40 Schedule 80 Schedule 120
- Thermoset Plastic: (check one) Filament Wound Resin Pipe conforming to ASTM D2966 Centrifugally Cast Resin Pipe conforming to ASTM D2967 Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950 PTFE Fluorocarbon Tubing conforming to ASTM D3296 FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:

- Carbon Steel: compliant with (check one or more): ANSI/AWWA C200 API Spec. 5L ASTM A53 ASTM A139
- And compliant with (check one or more): ASTM A242 or A606 Type E Type S Grade B Other
- Stainless Steel: (check one): ASTM A409 (production wells) ASTM A312 (monitor wells) Schedule 80
- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) Schedule 40 Schedule 80 Schedule 120
- PVC Plastic conforming to ASTM F480 and ASTM D1785 or ASTM D2241: (check one): Schedule 40 Schedule 80 Schedule 120
- Thermoset Plastic: (check one) Filament Wound Resin Pipe conforming to ASTM D2966 Centrifugally Cast Resin Pipe conforming to ASTM D2967 Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950 PTFE Fluorocarbon Tubing conforming to ASTM D3296 FEP Fluorocarbon Tubing conforming to ASTM D3296

WCRI Form 12M12 Page 2 of 5

14. WELL LOCATION AND CURRENT OWNERSHIP INFORMATION

STATE WELL NO. 2-5425-017

Well coordinates (decimal degrees to at least 5 decimal places, example Latitude 21.334303, Longitude -157.962447)

Latitude 21° 54' 44.3" Longitude 159° 24' 55.28"

Was a GPS used? yes no (if no, specify how you got these coordinates: Google Earth)

Current well owner same as application or new (fill in below)

Company Name _____ Contact _____

Address _____

City _____ State _____ Zip _____

Business Phone _____ Residential Phone _____ Fax _____

E-mail Address _____ Company Website _____

Current land owner same as application or new (fill in below)

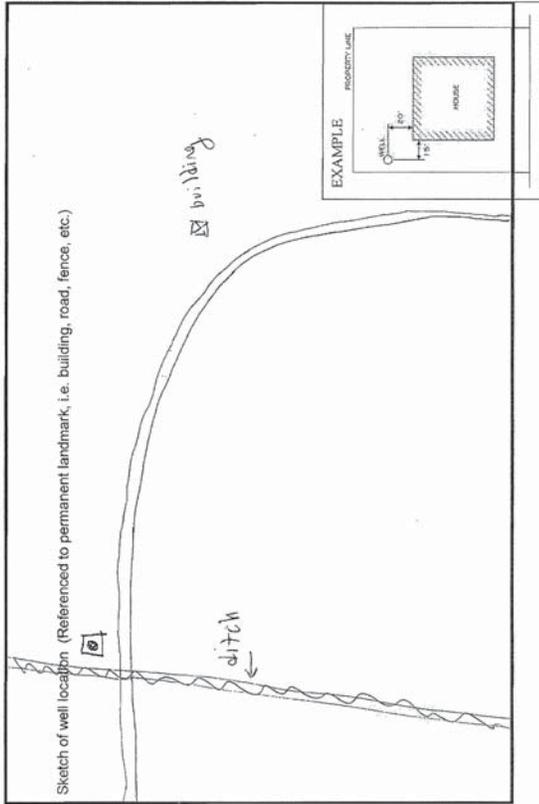
Company Name _____ Contact _____

Address _____

City _____ State _____ Zip _____

Business Phone _____ Residential Phone _____ Fax _____

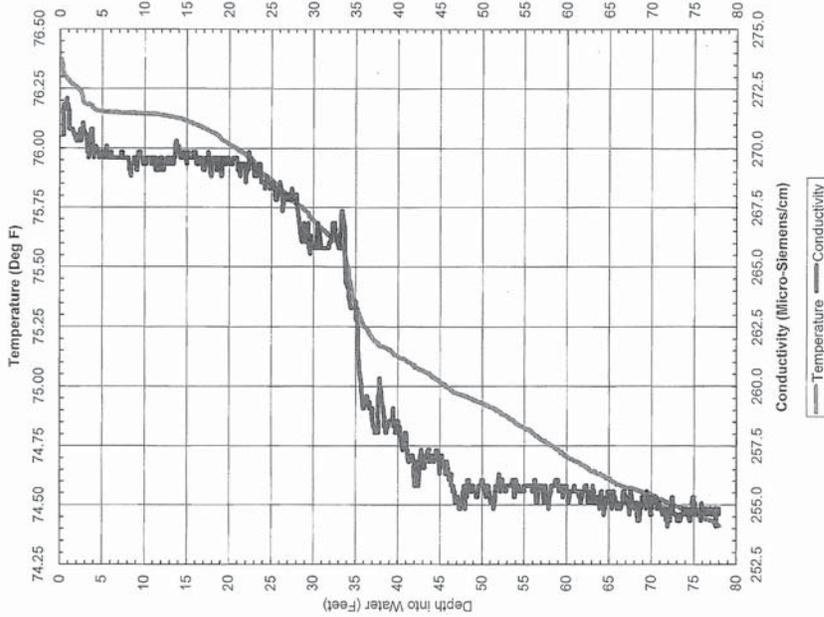
E-mail Address _____ Company Website _____



WCSI Form 12/4/12 Page 4 of 5

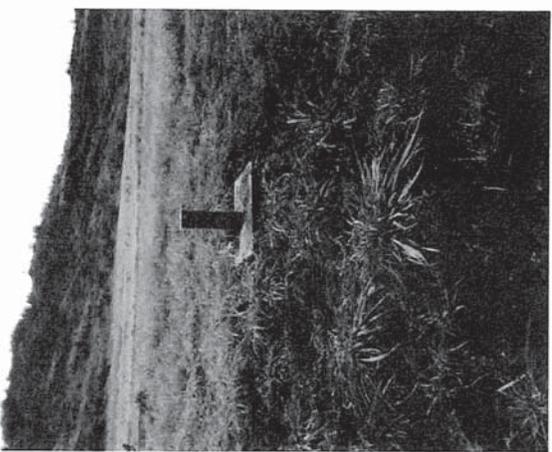
HDF000657

Figure 9. Conductivity and Temperature Profile of the HDF-2 Monitor Well on May 13, 2015



HDF000658

2-5425-017
HDF-2



State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
WELL COMPLETION REPORT - PART I
Well Construction

For Official Use Only:

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96808. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0225. For updates to this form or additional information, please visit our website at <http://www.state.hi.us/dnr/cwrmt/>

1. State Well No.: 2-5424-001 Well Name: HDF-3 Island: Kauai
2. Well Location Address: Mahavalepu Tax Map Key: 4) 2-9-003.001
3. Drilling Company: Oasis Water Systems, Inc
4. Drilling method used during construction: Rotary Percussion Other (describe)
5. Date Well Construction (drilled, cased, grouted) completed: 5/19/2015
month/year
6. Was the subject well cored? Yes No
7. Step-Drawdown Test completed? No Yes Attach Step-Drawdown Test form (12/17/97 SDPTD Form)
8. Constant Rate Aquifer Test completed? No Yes Attach Constant Rate Aquifer Test form (12/17/97 CRPTD Form)

Water Level Data:

9. Initial encountered during drilling (this should also be filled in on the driller's log)	Reference point elevation	Depth to water (feet)	ft. above mean sea level (see note below)	Date/time of measurement
<u>12.7 ft. msl</u>	<u>12.7 ft. msd</u>	<u>8.4</u>	<u>53.60</u>	<u>4/28/15</u>
<u>12.7 ft. msd</u>	<u>12.7 ft. msd</u>	<u>10.22</u>	<u>51.78</u>	<u>4/30/15</u>
<u>12.7 ft. msd</u>	<u>12.7 ft. msd</u>	<u>12.63</u>	<u>50.91</u>	<u>6/26/15</u>

10. Just prior to casing installation
If this reference point is the benchmark, the difference between the benchmark and this point is: 3 ft.

11. After casing installation (this information should be before any pump tests are performed with casing installed)
Chloride: 84.9 mg/L Temperature: 78.2 °F

note: for all elevations referenced to mean sea level, take the ground elevation (surveyed or estimated if survey not required at this time) and subtract the depth to the water level.

12. As-built section filled in completely (refer to attached sheet)
13. Driller's Log filled in completely (refer to attached sheet)
14. Well location info filled in completely (refer to attached sheet)
15. Well elevation certification filled in completely (refer to attached sheet) N/A
16. Photograph of well and concrete pad showing benchmark on concrete pad attached
17. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)
18. Remarks:

Licensed Driller (print) BRIAN SIMMONS C-5 Lic. No. 21457

Signature BS Date 6/29/2015

14. WELL LOCATION AND CURRENT OWNERSHIP INFORMATION

STATE WELL NO. 2-5424-001

Well coordinates (decimal degrees to at least 5 decimal places, example Latitude 21.334303, Longitude -157.962447)

Latitude 21° 53' 59.02" N Longitude 159° 25' 05.86" W

Was a GPS used? yes no (if no, specify how you got these coordinates: Google Earth)

Current well owner same as application or new (fill in below)

Company Name _____ Contact _____
 Address _____
 City _____ State _____ Zip _____
 Business Phone _____ Residential Phone _____ Fax _____
 E-mail Address _____ Company Website _____

Current land owner same as application or new (fill in below)

Company Name _____ Contact _____
 Address _____
 City _____ State _____ Zip _____
 Business Phone _____ Residential Phone _____ Fax _____
 E-mail Address _____ Company Website _____

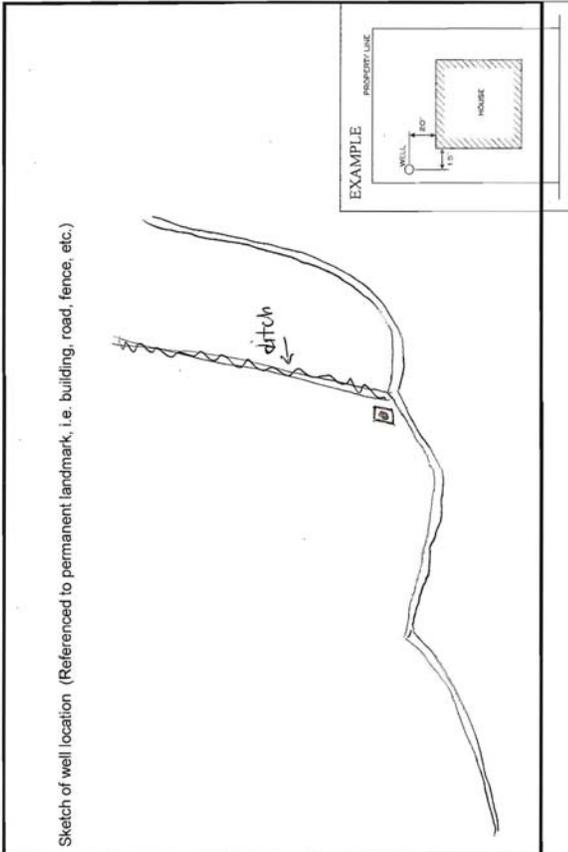
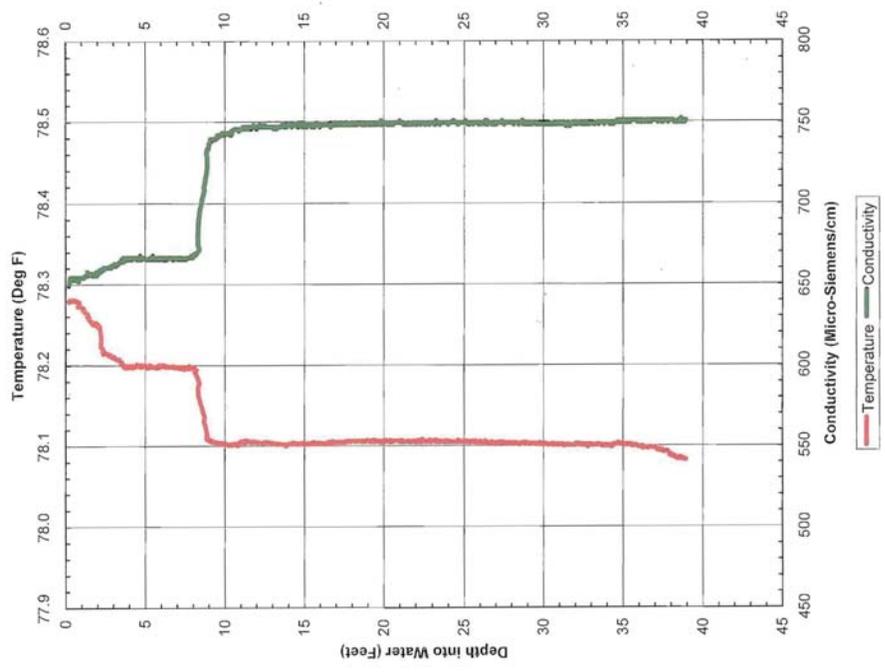


Figure 10. Conductivity and Temperature Profile of the HDF-3 Monitor Well on May 13, 2015



HDF-3
2-5424-001



State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources

WELL COMPLETION REPORT - PART I
Well Construction

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, Department of Land and Natural Resources, 200 W. Kawili Place, Honolulu, HI 96824. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0225. For updates to this form or additional information, please visit our website at <http://www.state.hi.us/dlnr/cwrm/>

For Official Use Only:

1. State Well No.: 2-5425-018 Well Name: HDF-4 Island: KAUAI
2. Well Location Address: Mahaukapuu Tax Map Key: (4) 2-9-003:001
3. Drilling Company: Basics Water Systems, Inc.
4. Drilling method used during construction: Rotary Percussion Other (describe)
5. Date Well Construction (drilled, cased, grouted) completed: 5/8/2015
(month/day/year)
6. Was the subject well cored? Yes No
7. Step-Drawdown Test completed? No Yes **Attach Step-Drawdown Test form (12/17/97 SDPTD Form)**
8. Constant Rate Aquifer Test completed? No Yes **Attach Constant Rate Aquifer Test form (12/17/97 CRPTD Form)**

Water Level Data:	Reference point elevation	Depth to water (feet)	Water Level in ft. sea level (see note below)	Date/time of measurement
9. Initial encountered during drilling (this should also be filled in on the driller's log)	<u>Top of casing = 10.5 ft. msl</u>	<u>25.5</u>	<u>79.5</u>	<u>3/30/15</u>
10. Just prior to casing installation	<u>Gravel = 10.5 ft. msl</u>	<u>27.5</u>	<u>77.5</u>	<u>4/10/15</u>
11. After casing installation (this reference should be used where any pump tests are performed with casing installed)	<u>If this reference point is not the reference point, describe the difference between the benchmark and this point is: <u>1.6</u> ft.</u>	<u>26.76</u>	<u>79.57</u>	<u>6/26/15</u>

note: For all elevations referenced to mean sea level, take the ground elevation (surveyed or estimated if survey not required at this time) and subtract the depth to the water level.

12. As-built section filled in completely (refer to attached sheet)
13. Driller's Log filled in completely (refer to attached sheet)
14. Well location info filled in completely (refer to attached sheet)
15. Well elevation certification filled in completely (refer to attached sheet)
16. Photograph of well and concrete pad showing benchmark on concrete pad attached
17. If a pump is not planned to be installed, please describe (below in the Remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)
18. Remarks:

Licensed Driller (print) DARYL SIMMONS C-57 Lic. No. 21457
Signature [Signature] Date 6/29/2015

14. WELL LOCATION AND CURRENT OWNERSHIP INFORMATION

STATE WELL NO. 2-5425-018

Well coordinates (decimal degrees to at least 5 decimal places, example Latitude 21.334303, Longitude -157.962447)

Latitude 21° 54' 09.55" N Longitude 159° 25' 37.32

Was a GPS used? yes no (if no, specify how you got these coordinates: Google Earth)

Current well owner same as application or new (fill in below)

Company Name _____ Contact _____
 Address _____
 City _____ State _____ Zip _____
 Business Phone _____ Residential Phone _____ Fax _____
 E-mail Address _____ Company Website _____

Current land owner same as application or new (fill in below)

Company Name _____ Contact _____
 Address _____
 City _____ State _____ Zip _____
 Business Phone _____ Residential Phone _____ Fax _____
 E-mail Address _____ Company Website _____

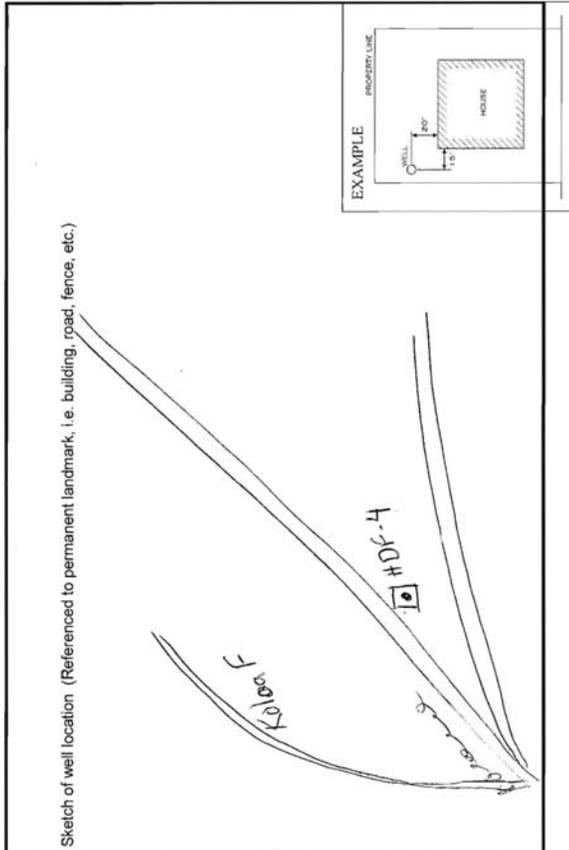
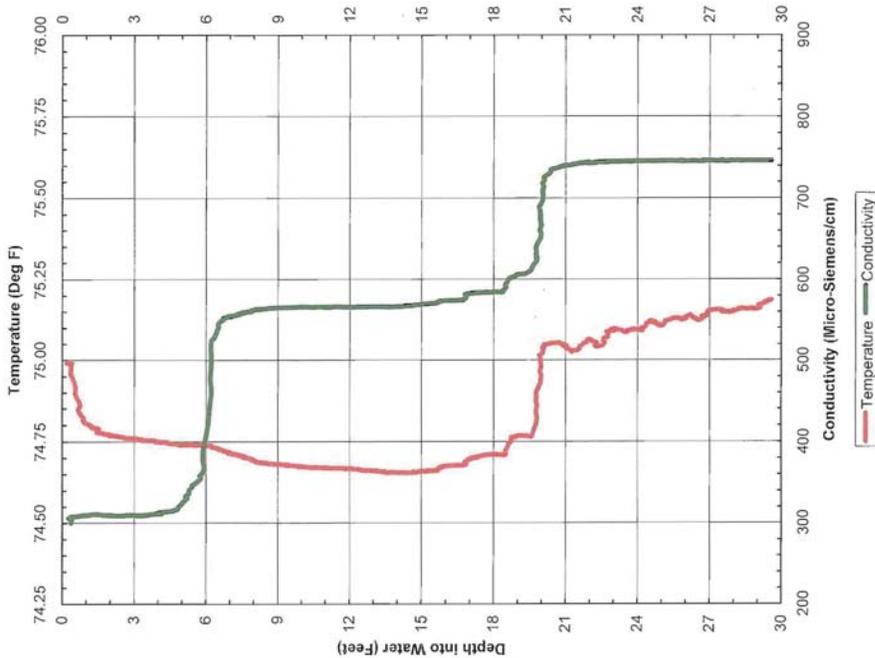


Figure 11. Conductivity and Temperature Profile of the HDF-4 Monitor Well on May 8, 2015



HDF-4

2-5425-018



Bernard P. Carvalho, Jr.
Mayor

Nadine K. Nakamura
Managing Director



DEPARTMENT OF PUBLIC WORKS

County of Kauai, State of Hawaii

4444 Rice Street, Suite 275, Lihue, Hawaii 96766
TEL (808) 241-4992 FAX (808) 241-6604

Larry Dill, P.E.
County Engineer

Lyle Tabata
Deputy County Engineer

September 22, 2015

Jim Garmatz, Farm Manager
Hawaii Dairy Farms
P.O. Box 1960
Koloa, HI 96756-1690

Subject: Extensions for Building Permits 14-301, 302, 303, and 304

Dear Mr. Garmatz,

In response to your May 6, 2015 request for a 180-day extension to the subject permits we have determined that it would be more appropriate to extend the permit for the duration of the time it takes to complete the voluntary Environmental Impact Statement (EIS) with the Hawaii Department of Health (DOH) as the approving agency since the completion time of this work is beyond your control.

Building Permit Nos 14-301, 14-302, 14-303, and 14-304 shall be extended indefinitely as of May 6, 2015 subject to completion of the EIS and at that time the additional 180 days extension shall be granted to allow for commencement of construction.

Yours truly,


Larry Dill, P.E.
County Engineer

cc: Gerald Takamura, DOH Kauai District Office
Dr. Bai, DOH Kauai District Office
Keith Kawaoka, DOH Main Office
Noland Hirai, DOH Clean Water Branch
Sina Pruder, DOH Wastewater Branch
Stewart Yamada, DOH Environmental Management Division
Peter Oshiro, DOW Sanitation Branch
Kauai Planning Director
Kauai County Attorney

An Equal Opportunity Employer

COUNTY COUNCIL
COUNTY OF KAUAI

Resolution
No. 2001-25,
Draft 1

RESOLUTION SUPPORTING THE FUTURE PRESERVATION
OF MAHA'ULEPU

WHEREAS, Maha'ulepu is a heritage landscape where it is possible to preserve and restore diverse significant natural, scenic, cultural, archaeological, historic, scientific and recreational resources; and

WHEREAS, Maha'ulepu is a living cultural landscape and a place sacred to many Native Hawaiians, particularly to those of the Kohala area whose ancestral remains are buried at Maha'ulepu; and

WHEREAS, it is in the economic and social interest of the County of Kauai to conserve its valuable natural and cultural resources and to create parks and preserves for the future; and

WHEREAS, the ahupua'a of Maha'ulepu is also directly adjacent to Kipu Kai, an entire ahupua'a which is a future State land preserve; and

WHEREAS, the unique opportunity to apply the ahupua'a framework of care-taking and management of watersheds from mountain peak to the ocean, exists at both Kipu Kai and Maha'ulepu; and

WHEREAS, landowners should receive fair value for land dedicated or sold for public purposes; and

WHEREAS, the Kauai General Plan states that Maha'ulepu needs a community-based planning effort that engages the landowner and local community interests, drawing upon the County government, the State Department of Land and Natural Resources (DLNR), and various professional experts, as needed; NOW, THEREFORE:

BE IT RESOLVED, that the Council of the County of Kauai supports and is willing to participate in collaborative planning efforts to explore options for the preservation of Maha'ulepu that would make it possible to preserve the irreplaceable natural and cultural resources of Maha'ulepu, and to sustain the experience of this place as an undeveloped area with compatible uses.

BE IT FURTHER RESOLVED, that the Council of the County of Kauai extends its mahalo to the Grove Farm Company, Inc., for continuing to keep Maha'ulepu open to the public, both residents and visitors.

BE IT FURTHER RESOLVED, that the Council of the County of Kauai thanks Governor Benjamin J. Cayetano for his declaration of support for preservation of Maha'ulepu and asks the Governor to continue his leadership towards preservation of Maha'ulepu.

BE IT FURTHER RESOLVED, that copies of this resolution be forwarded to the Honorable Benjamin J. Cayetano, Governor of the State of Hawaii; the Honorable Mazie Hirono, Lieutenant Governor of the State of Hawaii; the Honorable Maryanne W. Kusaka, Mayor of the County of Kauai; State Senator Jonathan Chun; State Senator Avery B. Chumbley; State Representative Ezra R. Kianohi; State Representative Bertha C. Kawakani; State Representative Hermina M. Morita; Ms. Lynn P. McCoy, State Board of Land and Natural Resources Kauai Member; and Mr. David W. Pratt, President and Chief Executive Officer, Grove Farm Company, Inc.

INTRODUCED BY:

/s/ KON KOUCHI
/s/ BILL "KAPO" ASING
/s/ BRYAN BAPTISTE
/s/ GARY HOOSER
/s/ DARYL KANESHIRO
/s/ JAMES KUNANE TOKIOKA
/s/ RANDAL VALENCIANO

	Aye	Nay	Exc.
Asing	X		
Baptiste	X		
Hooser	X		
Kaneshiro	X		
Kouchi	X		
Tokioka	X		
Valenciano	X		
TOTAL	7	0	0

CERTIFICATE OF ADOPTION

We hereby certify that Resolution No 2001-25, Draft 1, was adopted by the Council of the County of Kauai, State of Hawaii, Lihue, Kauai, Hawaii, on April 11, 2001.


Chairman & Presiding Officer

Date: 4/12/2001


County Clerk

Site #	Nutrient	Nutrient Results for Waipoli Stream, Mahaulepua						
		Total Nitrate + Nitrite	Total Phosphorus	Total Solids	Turbidity	Ammonia	Salinity	ppt
	HAR Standards 11-54-5.2	0.2	0.008	na	1.5	0.006	Estuaries	All Seasons
	HAR Standards 11-54-5.2	0.18	0.030	10	2	na	Streams	Dry Season
	HAR Standards 11-54-5.2	0.25	0.070	20	5	na	Streams	Wet Season
	Waipoli Stream - Surftrider							
12	7/13/2014	0.41	0.086	5.4	21.2	0.14	0.3	Dry Season
12	8/10/2014	0.78	0.250	55	104	0.057	0.13	Dry Season
12	9/14/2014	0.49	0.052	32	27.4	0.097	8.29	All Seasons
12	1/20/2015	0.40	0.100	<.04	47.6	0.13	0.08	Wet Season
12	3/9/2015	0.47	0.069	0.062	46.2	<0.10	0.07	Wet Season
	Geometric mean	0.49	0.095	16.508	42.138	0.100	0.283	
	Waipoli Stream - USGS							
10	10/26/2015	0.43	0.206	0.012				Dry Season
11	10/26/2015	0.21	0.076	0.010				Dry Season
12	10/26/2015	0.20	0.068	0.008				Dry Season
	Geometric mean	0.26	0.102	0.010				

0-0.2 52.9%
0.06-0.6 30.5%
Total 83.4%

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	KSAT Percent of AOI
H2O	Honamuku sily clay, 15 to 25 percent slopes	17.3	0.14-1.98
H2E	Honamuku stony sily clay, 10 to 35 percent slopes	1.1	0.2-2.0
K2aB	Kaena clay, brown variant, 1 to 0 percent slopes	152.0	0.0-0.2
K2aC	Kaena clay, brown variant, 6 to 12 percent slopes	17.0	0.0-0.2
K2F	Kauna sily clay, 40 to 70 percent slopes	12.5	0.0-0.2
K2e	Kauna sily clay	152.0	0.06-0.6
K2HF	Kauna very rocky sily clay, 40 to 70 percent slopes	4.0	0.0-0.2
LE	Liliu gravelly sily clay, 0 to 8 percent slopes	0.5	0.1%
L2B	Lualaba clay, 2 to 8 percent slopes	78.2	0.0-0.2
P2A	Pakala clay loam, 0 to 2 percent slopes	31.1	0.6-1.98
P2C	Pakala clay loam, 2 to 10 percent slopes	46.0	0.6-1.98
R2K	Rock land	0.0	0.0-0.06
R2U	Rubble sand	1.7	0.3%
W	Water > 40 acres	1.9	0.3%
W2a	Waikona stony sily clay	54.0	0.0-0.06
Totals for Area of Interest			180.0%

Hydrologic Assessment for the Pasture Areas, Hawai'i Dairy Farms
May 9, 2016

Table 1 - Soil Characteristics Summary

Soil Classification	Soil Classification	Slope Range (%)	Hydrologic Soils Group	Drainage Class	Depth to Water Table (inches)	Capacity to transmit water - Keat (ly/hr)	Typical Soil Profile - Layer 1 (depth from surface)	Typical Soil Profile - Layer 2 (depth from surface)	Typical Soil Profile - Layer 3 (depth from surface)
Hanamaulu Silty Clay	HsD	15 to 20%	B	Well Drained	> 80"	0.14 to 1.98	0 to 11" Silty Clay	11 to 36" Silty Clay	36 to 72" Silty Clay Loam
Hanamaulu Stony Silty Clay	HRE	35%	B	Well Drained	> 80"	0.20 to 2.00	0 to 11" Stony Silty Clay	11 to 36" Silty Clay	36 to 72" Silty Clay Loam
Kaena Clay, Brown Variant	KavB	1 to 6%	D	Poorly Drained	24 to 60"	0.20 to 0.20	0 to 10" Clay	10 to 37" Stony Clay	37 to 54" Stony Clay
Kaena Clay, Brown Variant	KavC	6 to 12%	D	Poorly Drained	24 to 60"	0.00 to 0.20	0 to 10" Clay	10 to 37" Stony Clay	37 to 54" Stony Clay
Kalapa Silty Clay	KdF	40 to 70%	B	Well Drained	> 80"	0.00 to 0.20	0 to 10" Silty Clay	10 to 60" Clay	
Kalihi Clay	Kc	n/a	D	Poorly Drained	24 to 60"	0.06 to 0.60	0 to 16" Clay	16 to 70" Clay	
Kalapa Very Rocky Silty Clay (Very Rocky)	KbHF	40 to 70%	B	Well Drained	> 80"	0.00 to 0.20	0 to 10" Silty Clay	10 to 60" Clay	
Kalapa Very Rocky Silty Clay (Rock Outcrop)	KbHF	40 to 70%	D			0.00 to 0.06	0 to 60" Bedrock		
Lualualei Clay	LuB	2 to 6%	D	Well Drained	> 80"	0.00 to 0.20	0 to 10" Clay	10 to 60" Clay	
Pakala Clay Loam	PuA	0 to 2%	B	Well Drained	> 80"	0.60 to 1.98	0 to 16" Clay Loam	16 to 60" Silty Clay Loam	
Pakala Clay Loam	PuC	2 to 10%	B	Well Drained	> 80"	0.60 to 1.98	0 to 16" Clay Loam	16 to 60" Silty Clay Loam	
Rock Land (Rock Outcrop)	rRK	n/a	D	Well Drained	> 80"	0.00 to 0.06	0 to 4" Silty Clay	4 to 8" Silty Clay	8 to 20" Bedrock
Rock Land (Rock Outcrop)	rRK	n/a	D	Well Drained		0.00 to 0.06	0 to 60" Bedrock		
Waikomo Stony Silty Clay	Ws	n/a	D	Well Drained	> 80"	0.00 to 0.06	0 to 14" Stony Silty Clay	14 to 20" Stony Silty Clay Loam	20 to 30" Bedrock

0-0.2
52.9

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HsD	Hanamaulu silty clay, 15 to 25 percent slopes	17.3	2.6%
HRE	Hanamaulu stony silty clay, 10 to 35 percent slopes	1.1	0.2%
KavB	Kaena clay, brown variant, 1 to 6 percent slopes	192.0	25.4%
KavC	Kaena clay, brown variant, 6 to 12 percent slopes	17.0	2.5%
KdF	Kalapa silty clay, 40 to 70 percent slopes	12.5	2.1%
Kc	Kalihi clay	192.0	30.5%
KbHF	Kalapa very rocky silty clay, 40 to 70 percent slopes	4.0	0.7%
LuB	Lualualei gravelly silty clay, 0 to 8 percent slopes	0.5	0.1%
LuB	Lualualei clay, 2 to 6 percent slopes	78.2	13.1%
PuA	Pakala clay loam, 0 to 2 percent slopes	31.1	5.2%
PuC	Pakala clay loam, 2 to 10 percent slopes	46.0	7.5%
rRK	Rock land	0.0	0.0%
rRU	Rubble land	1.7	0.3%
W	Water > 40 acres	1.9	0.3%
Ws	Waikomo stony silty clay	54.0	8.0%
Totals for Area of Interest			668.9

0.14-1.98
0.2-2
*
*
*
0.06-0.6
*

*
0.6-1.98
0.6-1.98
*

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Island of Kauai, Hawaii					
Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HdD—Hanamaulu silty clay, 15 to 25 percent slopes Hanamaulu	100	Very limited			
		Too acid	1.00	Seepage	1.00
		Too steep for surface application	1.00	Too acid	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
HE—Hanamaulu stony clay, 10 to 35 percent slopes Hanamaulu, stony	100	Low adsorption	0.78	Low adsorption	0.78
		Very limited			
KavB—Kaena clay, brown variant, 1 to 5 percent slopes Kaena variant	100	Too acid	1.00	Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too acid	1.00
		Low adsorption	0.78	Too steep for surface application	1.00
		Large stones on the surface	0.37	Low adsorption	0.78
		Very limited		Somewhat limited	
KavC—Kaena clay, brown variant, 6 to 12 percent slopes Kaena variant	100	Slow water movement	1.00	Stone content	0.99
		Depth to saturated zone	0.09	Seepage	0.37
		Too steep for surface application	0.06	Depth to saturated zone	0.09
		Large stones on the surface	0.01		
KavC—Kaena clay, brown variant, 6 to 12 percent slopes Kaena variant	100	Very limited		Somewhat limited	
		Slow water movement	1.00	Stone content	0.99
		Too steep for surface application	1.00	Too steep for surface application	0.50
		Too steep for sprinkler application	0.22	Seepage	0.37
KavC—Kaena clay, brown variant, 6 to 12 percent slopes Kaena variant	100	Depth to saturated zone	0.09	Depth to saturated zone	0.09
		Large stones on the surface	0.01		

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Island of Kauai, Hawaii					
Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
KdF—Kalapa silty clay, 40 to 70 percent slopes Kalapa	100	Very limited			
		Too acid	1.00	Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	0.49
Ke—Kalihi clay Kalihi	100	Slow water movement	1.00		
		Very limited		Very limited	
KEH—Kalapa very rocky silty clay, 40 to 70 percent slopes Kalapa, very rocky	75	Ponding	1.00	Ponding	1.00
		Slow water movement	0.62	Flooding	1.00
		Flooding	0.60	Seepage	1.00
		Depth to saturated zone	0.09	Depth to saturated zone	0.09
LEB—Lihue gravelly silty clay, 0 to 6 percent slopes Lihue, gravelly	25	Very limited		Very limited	
		Too acid	1.00	Too acid	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	0.49
Luhue, gravelly	100	Slow water movement	1.00		
		Not rated		Not rated	
LuB—Lualualei clay, 2 to 6 percent slopes Lualualei	100	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	1.00
LuB—Lualualei clay, 2 to 6 percent slopes Lualualei	100	Too steep for surface application	0.06		
		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Slow water movement	1.00	Flooding	0.40
LuB—Lualualei clay, 2 to 6 percent slopes Lualualei	100	Too steep for surface application	0.06	Seepage	0.37

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Water Features—Island of Kauai, Hawaii										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
HsD—Hanamaulu silty clay, 15 to 25 percent slopes										
Hanamaulu	B	High	Jan-Dec	--	--	--		None	--	None
HIE—Hanamaulu stony silty clay, 10 to 35 percent slopes										
Hanamaulu, stony	B	Medium	Jan-Dec	--	--	--		None	--	None
KavB—Kaena clay, brown variant, 1 to 5 percent slopes										
Kaena variant	D	Medium	January	2.0-5.0	>6.0	--	--	None	--	None
			February	2.0-5.0	>6.0	--	--	None	--	None
			March	2.0-5.0	>6.0	--	--	None	--	None
			April	2.0-5.0	>6.0	--	--	None	--	None
			November	2.0-5.0	>6.0	--	--	None	--	None
			December	2.0-5.0	>6.0	--	--	None	--	None
KavC—Kaena clay, brown variant, 5 to 12 percent slopes										
Kaena variant	D	High	January	2.0-5.0	>6.0	--	--	None	--	None
			February	2.0-5.0	>6.0	--	--	None	--	None
			March	2.0-5.0	>6.0	--	--	None	--	None
			April	2.0-5.0	>6.0	--	--	None	--	None
			November	2.0-5.0	>6.0	--	--	None	--	None
			December	2.0-5.0	>6.0	--	--	None	--	None

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Island of Kauai, Hawaii					
Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
PgA—Pakai clay loam, 0 to 2 percent slopes	100	Very limited		Very limited	
Pakala		Ponding	1.00	Seepage	1.00
		Too acid	1.00	Ponding	1.00
		Flooding	0.60	Too acid	1.00
				Flooding	1.00
PcC—Pakai clay silt, 2 to 10 percent slopes	100	Very limited		Very limited	
Pakala		Too acid	1.00	Seepage	1.00
		Too steep for surface application	0.60	Too acid	1.00
		Flooding	0.60	Flooding	1.00
rRK—Rock land	55	Very limited		Very limited	
Rock land		Slow water movement	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00		
		Too steep for sprinkler application	1.00		
Rock outcrop	45	Not rated		Not rated	
rRQ—Rubble land	100	Not rated		Not rated	
W—Water > 40 acres	100	Not rated		Not rated	
Wb—Waikomo stony silty clay	100	Very limited		Very limited	
Waikomo		Large stones on the surface	1.00	Depth to bedrock	1.00
		Droughty	1.00	Stone content	1.00
		Depth to bedrock	0.99	Seepage	1.00
		Slow water movement	0.50		
		Too steep for surface application	0.08		

Water Features—Island of Kauai, Hawaii										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				<i>Ft</i>	<i>Ft</i>					
LUB—Lualualei clay, 2 to 6 percent slopes										
Lualualei	D	Very low	January	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			February	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			March	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			April	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			May	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			June	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			July	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			August	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			September	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			October	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			November	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			December	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare

Custom Soil Resource Report

Water Features—Island of Kauai, Hawaii										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				<i>Ft</i>	<i>Ft</i>					
KdF—Kalapa silty clay, 40 to 70 percent slopes										
Kalapa	B	Very high	Jan-Dec	—	—	—	—	None	—	None
Ke—Kalihi clay										
Kalihi	D	Negligible	January	2.0-5.0	>6.0	0.1-0.6	Very brief	Frequent	Very brief	Occasional
			February	2.0-5.0	>6.0	0.1-0.8	Very brief	Frequent	Very brief	Occasional
			March	2.0-5.0	>6.0	0.1-0.8	Very brief	Frequent	Very brief	Occasional
			April	—	—	0.1-0.8	Very brief	Frequent	Very brief	Rare
			May	—	—	0.1-0.8	Very brief	Frequent	Very brief	Rare
			June	—	—	0.1-0.8	Very brief	Frequent	Very brief	Rare
			July	—	—	0.1-0.8	Very brief	Frequent	Very brief	Rare
			August	—	—	0.1-0.8	Very brief	Frequent	Very brief	Rare
			September	—	—	0.1-0.8	Very brief	Frequent	Very brief	Rare
			October	—	—	0.1-0.8	Very brief	Frequent	Very brief	Rare
			November	2.0-5.0	>6.0	0.1-0.8	Very brief	Frequent	Very brief	Occasional
			December	2.0-5.0	>6.0	0.1-0.8	Very brief	Frequent	Very brief	Occasional
KEHF—Kalapa very rocky silty clay, 40 to 70 percent slopes										
Kalapa, very rocky	B	Very high	Jan-Dec	—	—	—	—	None	—	None
Rock outcrop	D	—	Jan-Dec	—	—	—	—	None	—	None
LIB—Lihue gravelly silty clay, 0 to 8 percent slopes										
Lihue, gravelly	B	Low	Jan-Dec	—	—	—	—	None	—	None

Water Features—Island of Kauai, Hawaii										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				<i>Ft</i>	<i>Ft</i>					
PdC—Pakala clay loam, 2 to 10 percent slopes										
Pakala	B	Medium	January	—	—	—	—	None	Very brief	Occasional
			February	—	—	—	—	None	Very brief	Occasional
			March	—	—	—	—	None	Very brief	Occasional
			April	—	—	—	—	None	Very brief	None
			May	—	—	—	—	None	Very brief	Rare
			June	—	—	—	—	None	Very brief	Rare
			July	—	—	—	—	None	Very brief	Rare
			August	—	—	—	—	None	Very brief	Rare
			September	—	—	—	—	None	Very brief	Rare
			October	—	—	—	—	None	Very brief	Rare
			November	—	—	—	—	None	Very brief	Occasional
			December	—	—	—	—	None	Very brief	Occasional
rRK—Rock land										
Rock land	D	Very high	Jan-Dec	—	—	—	—	None	—	None
Rock outcrop	D	—	Jan-Dec	—	—	—	—	None	—	None
rRU—Rubble land										
Rubble land	A	Low	Jan-Dec	—	—	—	—	None	—	None
W—Water > 40 acres										
Water > 40 acres	—	—	Jan-Dec	—	—	—	—	None	—	None
Ws—Waikomo stony silty clay										
Waikomo	D	Low	Jan-Dec	—	—	—	—	None	—	None

Custom Soil Resource Report

Water Features—Island of Kauai, Hawaii										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				<i>Ft</i>	<i>Ft</i>					
PdA—Pakala clay loam, 0 to 2 percent slopes										
Pakala	B	Very low	January	—	—	0.1-0.8	Very brief	Occasional	Very brief	Occasional
			February	—	—	0.1-0.8	Very brief	Occasional	Very brief	Occasional
			March	—	—	0.1-0.8	Very brief	Occasional	Very brief	Occasional
			April	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			May	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			June	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			July	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			August	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			September	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			October	—	—	0.1-0.8	Very brief	Rare	Very brief	Rare
			November	—	—	0.1-0.8	Very brief	Occasional	Very brief	Occasional
			December	—	—	0.1-0.8	Very brief	Occasional	Very brief	Occasional

Custom Soil Resource Report

Map symbol and soil name	Pct. of map unit	Irrigation - General and Sprinkler-island of Kauai, Hawaii			
		Irrigation (general)	Irrigation, Sprinkler (close spaced outlet crops)	Irrigation, Sprinkler (general)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HeD—Hanamaulu silty clay, 15 to 25 percent slopes					
Hanamaulu	100	Very limited Slope	1.00	Very limited Slope, sprinkler irrigation	1.00
		Too acid	0.44	Surface clay	0.88
		Rapid water movement	0.40	Water Erosion	0.44
		Seepage	0.18	Too acid	0.44
HIE—Hanamaulu stony silty clay, 10 to 35 percent slopes					
Hanamaulu, stony	100	Very limited Slope	1.00	Very limited Slope, sprinkler irrigation	1.00
		Too acid	0.44	Surface clay	0.88
		Rapid water movement	0.40	Too acid	0.44
		Seepage	0.18	Water Erosion	0.32
KauD—Kauna clay, brown variant, 1 to 6 percent slopes					
Kauna variant	100	Not rated		Not Rated	
KavC—Kauna clay, brown variant, 6 to 12 percent slopes					
Kauna variant	100	Not rated		Not Rated	
KaIF—Kalaopa silty clay, 40 to 70 percent slopes					
Kalaopa	100	Very limited Slope	1.00	Very limited Slope, sprinkler irrigation	1.00
		Too acid	0.04	Water Erosion	0.88
		Surface clay	0.88	Slow water movement	0.61
		Slow water movement	0.61	Too acid	0.04
		Too acid	0.04		
Ko—Kalihī clay					
Kalihī	100	Not rated		Not Rated	

Map symbol and soil name	Pct. of map unit	Irrigation - General and Sprinkler-island of Kauai, Hawaii			
		Irrigation (general)	Irrigation, Sprinkler (close spaced outlet crops)	Irrigation, Sprinkler (general)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
KEH—Kalaopa very rocky silty clay, 40 to 70 percent slopes					
Kalaopa, very rocky	75	Very limited Slope	1.00	Very limited Slope, sprinkler irrigation	1.00
		Too acid	0.04	Water Erosion	0.98
		Surface clay	0.98	Slow water movement	0.90
		Slow water movement	0.90	Too acid	0.04
		Too acid	0.04		
Rock outcrop	25	Not rated		Not Rated	
LiB—Lihue gravelly silty clay, 0 to 8 percent slopes					
Lihue, gravelly	100	Somewhat limited Seepage	0.18	Somewhat limited Surface clay	0.98
		Slope	0.09	Slope	0.86
		Rapid water movement	0.02		
LuB—Luaihai clay, 2 to 6 percent slopes					
Luaihai	100	Very limited Pounding	1.00	Very limited Pounding	1.00
		Slope	0.09	Surface clay	1.00
		Low water holding capacity	0.01	Slope	0.86
		Slow water movement	0.61	Low water holding capacity	0.01
		Water Erosion	0.01		
POA—Pakalaia clay loam, 0 to 2 percent slopes					
Pakalaia	100	Not rated		Not Rated	
POC—Pakalaia clay loam, 2 to 10 percent slopes					
Pakalaia	100	Not rated		Not Rated	
RIK—Rook land					
Rook land	55	Not rated		Not Rated	
Rock outcrop	45	Not rated		Not Rated	
RIU—Rubble land					
Rubble land	100	Not rated		Not Rated	

Island of Kauai, Hawaii

HsD—Hanamaulu silty clay, 15 to 25 percent slopes

Map Unit Setting

Elevation: 200 to 700 feet
 Mean annual precipitation: 60 to 100 inches
 Mean annual air temperature: 72 to 73 degrees F
 Frost-free period: 365 days

Map Unit Composition

Hanamaulu and similar soils: 100 percent

Description of Hanamaulu

Setting
 Landform: Terraces
 Landform position (two-dimensional): Toeslope
 Landform position (three-dimensional): Riser
 Down-slope shape: Linear
 Across-slope shape: Linear
 Parent material: Basic igneous rocks

Typical profile

H1 - 0 to 11 inches: extremely acid, silty clay
 H2 - 11 to 36 inches: very strongly acid, silty clay
 H3 - 36 to 72 inches: very strongly acid, silty clay loam

Properties and qualities

Slope: 15 to 25 percent
 Depth to restrictive feature: More than 80 inches
 Natural drainage class: Well drained
 Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
 Depth to water table: More than 80 inches
 Frequency of flooding: None
 Frequency of ponding: None
 Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
 Land capability classification (irrigated): 4e
 Land capability classification (nonirrigated): 4e
 Hydrologic Soil Group: B

H1E—Hanamaulu stony silty clay, 10 to 35 percent slopes

Map Unit Setting

Elevation: 200 to 700 feet
 Mean annual precipitation: 60 to 100 inches
 Mean annual air temperature: 72 to 73 degrees F

TABLE NO. 1507 OF SPECIFIED STYLE IS OBSOLETE

Map symbol and soil name	Pct. of map unit	Irrigation - General and Sprinkler—Island of Kauai, Hawaii		Irrigation, Sprinkler (close spaced outlet drops)	Irrigation, Sprinkler (general)
		Irrigation (general)	Sprinkler (close spaced outlet drops)		
		Rating class and limiting features	Value	Rating class and limiting features	Value
W—Water > 40 acres	100	Not rated		Not Rated	
W1—Waikomo stony silty clay	100	Very limited Low water holding capacity	1.00	Very limited Low water holding capacity	1.00
W2—Waikomo stony silty clay		Depth to hard bedrock	1.00	Content of large stones	1.00
		Content of large stones	0.99	Depth to hard bedrock	0.99
		Slope	0.09	Slope	0.50
		Rapid water movement	0.02	Surface clay	0.50

Frost-free period: 365 days

Map Unit Composition

Hanamaulu, stony, and similar soils: 100 percent

Description of Hanamaulu, Stony

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Basic igneous rocks

Typical profile

H1 - 0 to 11 inches: extremely acid, stony silty clay
H2 - 11 to 36 inches: very strongly acid, silty clay
H3 - 36 to 72 inches: very strongly acid, silty clay loam

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B

KavB—Kaena clay, brown variant, 1 to 6 percent slopes

Map Unit Setting

Elevation: 50 to 150 feet
Mean annual precipitation: 30 to 45 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Kaena variant and similar soils: 100 percent

Description of Kaena Variant

Setting

Landform: Fans
Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Formed in alluvium and colluvium

Typical profile

H1 - 0 to 10 inches: neutral, clay
H2 - 10 to 37 inches: neutral, stony clay
H3 - 37 to 54 inches: neutral, stony clay

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 24 to 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Farmland classification: All areas are prime farmland
Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D

KavC—Kaena clay, brown variant, 6 to 12 percent slopes

Map Unit Setting

Elevation: 50 to 150 feet
Mean annual precipitation: 30 to 45 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Kaena variant and similar soils: 100 percent

Description of Kaena Variant

Setting

Landform: Fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Formed in alluvium and colluvium

Typical profile

H1 - 0 to 10 inches: neutral, clay
H2 - 10 to 37 inches: neutral, stony clay
H3 - 37 to 54 inches: neutral, stony clay

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 24 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D

KdF—Kalapa silty clay, 40 to 70 percent slopes

Map Unit Setting

Elevation: 200 to 1,200 feet
Mean annual precipitation: 60 to 100 inches
Mean annual air temperature: 68 to 73 degrees F
Frost-free period: 365 days

Map Unit Composition

Kalapa and similar soils: 100 percent

Description of Kalapa

Setting

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Basic igneous rock

Typical profile

H1 - 0 to 10 inches: very strongly acid, silty clay
H2 - 10 to 60 inches: very strongly acid, clay

Properties and qualities

Slope: 40 to 70 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.6 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Ke—Kalihī clay

Map Unit Setting

Elevation: 50 to 100 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Kalihī and similar soils: 100 percent

Description of Kalihī

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Basic igneous rock

Typical profile

H1 - 0 to 16 inches: neutral, clay
H2 - 16 to 70 inches: neutral, clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 24 to 60 inches
Frequency of flooding: Occasional
Frequency of ponding: Frequent
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season
Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D

KEHF—Kalapa very rocky silty clay, 40 to 70 percent slopes

Map Unit Setting

Elevation: 0 to 10,000 feet
Mean annual precipitation: 10 to 175 inches
Mean annual air temperature: 45 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Kalapa, very rocky, and similar soils: 75 percent
Rock outcrop: 25 percent

Description of Kalapa, Very Rocky

Setting

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Basic igneous rock

Typical profile

H1 - 0 to 10 inches: very strongly acid, silty clay
H2 - 10 to 60 inches: very strongly acid, clay

Properties and qualities

Slope: 40 to 70 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Description of Rock Outcrop

Setting

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope, tread, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Basalt

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 40 to 70 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D

LIB—Lihue gravelly silty clay, 0 to 8 percent slopes

Map Unit Setting

Elevation: 0 to 800 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Lihue, gravelly, and similar soils: 100 percent

Description of Lihue, Gravelly

Setting

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Basic igneous dust

Typical profile

H1 - 0 to 12 inches: slightly acid, gravelly silty clay
H2 - 12 to 60 inches: slightly acid, silty clay

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 6.4 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

LuB—Lualualei clay, 2 to 6 percent slopes

Map Unit Setting

Elevation: 10 to 120 feet
Mean annual precipitation: 18 to 30 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Lualualei and similar soils: 100 percent

Description of Lualualei

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tail
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium

Typical profile

H1 - 0 to 10 inches: neutral, clay
H2 - 10 to 60 inches: neutral, clay

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: Rare
Available water storage in profile: Moderate (about 7.1 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D

PdA—Pakala clay loam, 0 to 2 percent slopes

Map Unit Setting

Elevation: 0 to 400 feet
Mean annual precipitation: 25 to 40 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Pakala and similar soils: 100 percent

Description of Pakala

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluvium, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium

Typical profile

H1 - 0 to 16 inches: very strongly acid, clay loam
H2 - 16 to 60 inches: moderately acid, silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: Occasional
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B

PdC—Pakala clay loam, 2 to 10 percent slopes

Map Unit Setting

Elevation: 0 to 400 feet
Mean annual precipitation: 25 to 40 inches

Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Pakala and similar soils: 100 percent

Description of Pakala

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluv, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium

Typical profile

H1 - 0 to 16 inches: very strongly acid, clay loam
H2 - 16 to 60 inches: moderately acid, silty clay loam

Properties and qualities

Slope: 2 to 10 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 2c
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B

rRK—Rock land

Map Unit Setting

Elevation: 0 to 6,000 feet
Mean annual precipitation: 15 to 60 inches
Mean annual air temperature: 57 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Rock land and similar soils: 55 percent
Rock outcrop: 45 percent

Description of Rock Land

Setting

Landform: Pahoehoe lava flows

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope, riser, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Basalt

Typical profile

H1 - 0 to 4 inches: neutral, silty clay
H2 - 4 to 8 inches: neutral, silty clay
H3 - 8 to 20 inches: bedrock

Properties and qualities

Slope: 10 to 70 percent
Depth to restrictive feature: 4 to 10 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D

Description of Rock Outcrop

Setting

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope, tread, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Basalt

Typical profile

H1 - 0 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 70 percent
Depth to restrictive feature: 0 to 60 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D

rRU—Rubble land

Map Unit Setting

Elevation: 0 to 500 feet
Mean annual precipitation: 22 to 50 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Rubble land: 100 percent

Description of Rubble Land

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Foothills
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium and colluvium

Typical profile

H1 - 0 to 60 inches: , extremely stony material

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: A

W—Water > 40 acres

Map Unit Setting

Frost-free period: 365 days

Map Unit Composition

Water > 40 acres: 100 percent

Description of Water > 40 Acres

Properties and qualities

Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Ws—Waikomo stony silty clay

Map Unit Setting

Elevation: 0 to 360 feet
Mean annual precipitation: 35 to 60 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 365 days

Map Unit Composition

Waikomo and similar soils: 100 percent

Description of Waikomo

Setting

Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluvium, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Basalt

Typical profile

H1 - 0 to 14 inches: neutral, stony silty clay
H2 - 14 to 20 inches: slightly alkaline, stony silty clay loam
H3 - 20 to 30 inches: , bedrock

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D



July 8, 2015

Charles M. Tebbutt, P.C.
Law Offices of Charles M. Tebbutt, P.C.
941 Lawrence Street
Eugene, OR 97401

Re: Response to your letter of July 3, 2015, about comments from friends of Maha'Ulepu regarding rescission of approval of Hawaii Dairy Farms' Soil Conservation Plan - Historic Properties

Mr. Tebbutt:

The conservation plan developed by the USDA Natural Resources Conservation Service (NRCS) Lihue Service Center for Hawaii Dairy Farms LLC (Dairy), dated November 27, 2013, was completed at the request of the "Dairy" and identifies resource concerns, goals, and treatment options. This conservation plan is non-binding and is not subject to an approval process.

If the landowner requests further assistance with new objectives or resource concerns, then, through the NRCS planning process, we would revisit earlier steps. Until the landowner requests that assistance, the existing plan serves as an appropriate guidance document with relevant technical information. Through the NRCS planning process, the client was informed that cultural resources were present on the property and was advised to work closely with the State Historical Preservation Division (SHPD) to preserve the areas.

Sincerely,

BRUCE PETERSEN
Director
Pacific Islands Area

CC: Jenna Dunn, District Conservationist, Lihue Service Center
Donna Hopwood, Assistant Director, Field Operations
Anthony Ingersoll, Assistant Director, Resource Technology
Peter Tausend, Chairman WKSWCD

Natural Resources Conservation Service
Pacific Islands Area
P.O. Box 50004 Rm. 4-118
Honolulu, HI 96850-0050
808-541-2800
An Equal Opportunity Provider and Employer

**KOLOA WELL A
KOLOA-POIPU (DOW)**

USGS ID : 5427-01
LOCATION OF THE SOURCE: 409-032
SOURCE OWNER OR USER: LONGITUDE: XXX
Kaula Dwa
DATE OF CONSTRUCTION: 1953
GROUND ELEVATION: 245 feet above mean sea level
CASING DIAMETER: 12 inches
SOLID CASING to 217 feet below ground surface
PERFORATED CASING to 277 feet below ground surface
INITIAL WATER LEVEL: 42.16 feet above mean sea level
PUMP CHARACTERISTICS: INITIAL CHLORIDE: 25 ppm
PUMP CAPACITY: 1200 gpm
AQUIFER CHARACTERISTICS: LIHUE
AQUIFER SYSTEM: KOLOA
UPPER AQUIFER HYDROLOGY: ; Fresh water in contact with seawater
UPPER AQUIFER TYPE: ; Where water table is upper surface of saturated aquifer
UPPER AQUIFER GEOLOGY: ; Aquifers in dike compartments
UPPER AQUIFER USE STATUS: ; Currently used
UPPER AQUIFER UTILITY STATUS: ; Drinking
UPPER AQUIFER SALINITY in mg/l: ; Fresh (<250)
UPPER AQUIFER UNIQUENESS: ; Irreplaceable
UPPER AQUIFER VULNERABILITY: ; High
LOWER AQUIFER HYDROLOGY: ; Fresh water in contact with seawater
LOWER AQUIFER TYPE: ; Where water table is upper surface of saturated aquifer
LOWER AQUIFER GEOLOGY: ; Aquifers in dike compartments
LOWER AQUIFER USE STATUS: ; Currently used
LOWER AQUIFER UTILITY STATUS: ; Drinking
LOWER AQUIFER SALINITY in mg/l: ; Fresh (<250)
LOWER AQUIFER UNIQUENESS: ; Irreplaceable
LOWER AQUIFER VULNERABILITY: ; High
WELL GEOLOGY DESCRIPTION: ; Pliocene, Wehimea canyon basalt, Napali member; thin flow of lobeitic olivine basalt and oceanic pillowbasalt and as sloping gently outward, scarce ash deposits, strong erosion of shield

Printed: 16-Mar-04

Appendix B-1

PRELIMINARY RESULTS

**KOLOA WELLE
KOLOA-POIPU (DOW)**

USGS ID : 5427-03
 LOCATION OF THE SOURCE: SYSTEM ID : 408-031
 SOURCE OWNER OR USER: Kausal Dws LONGITUDE: XXX
 DATE OF CONSTRUCTION: 1989
 GROUND ELEVATION: 244 feet above mean sea level WELL DEPTH: 511 feet below ground surface
 CASING DIAMETER: 14 inches SOLID CASING to 202 feet below ground surface
 PERFORATED CASING to 284 feet below ground surface
 INITIAL WATER LEVEL: 35.2 feet above mean sea level INITIAL CHLORIDE: 46 ppm
 PUMP CHARACTERISTICS: SPECIFIC CAPACITY: 109 gpm/ft PUMP CAPACITY: 700 gpm
 AQUIFER CHARACTERISTICS: AQUIFER SECTOR: Lihue AQUIFER SYSTEM: Koloa
 UPPER AQUIFER HYDROLOGY: ; Fresh water in contact with seawater
 UPPER AQUIFER TYPE: Unconfined ; Where water table is upper surface of saturated aquifer
 UPPER AQUIFER GEOLOGY: Dike ; Aquifers in dike compartments
 UPPER AQUIFER UTILITY STATUS: Currently used
 UPPER AQUIFER SALINITY in mg/l: Drinking
 UPPER AQUIFER UNQUENESS: Fresh (<250)
 UPPER AQUIFER VULNERABILITY: Irreplaceable
 High
 LOWER AQUIFER HYDROLOGY: ; Fresh water in contact with seawater
 LOWER AQUIFER TYPE: Unconfined ; Where water table is upper surface of saturated aquifer
 LOWER AQUIFER GEOLOGY: Dike ; Aquifers in dike compartments
 LOWER AQUIFER UTILITY STATUS: Drinking
 LOWER AQUIFER SALINITY in mg/l: Fresh (<250)
 LOWER AQUIFER UNQUENESS: Irreplaceable
 LOWER AQUIFER VULNERABILITY: High

Printed: 16-Mar-04

Appendix B-1

PRELIMINARY RESULTS

Page 226 of 405

**KOLOA WELLE F
KOLOA-POIPU (DOW)**

USGS ID : 9998-02
 LOCATION OF THE SOURCE: SYSTEM ID : 408-034
 SOURCE OWNER OR USER: Kausal Dws LONGITUDE: XXX
 DATE OF CONSTRUCTION: 1998
 GROUND ELEVATION: 130 feet above mean sea level WELL DEPTH: 377 feet below ground surface
 CASING DIAMETER: 16 inches SOLID CASING to 123 feet below ground surface
 PERFORATED CASING to 175 feet below ground surface
 INITIAL WATER LEVEL: 25.86 feet above mean sea level INITIAL CHLORIDE: 84 ppm
 PUMP CHARACTERISTICS: SPECIFIC CAPACITY: 175 gpm/ft PUMP CAPACITY: 84 gpm
 AQUIFER CHARACTERISTICS: AQUIFER SECTOR: Lihue AQUIFER SYSTEM: Koloa
 UPPER AQUIFER HYDROLOGY: ; Fresh water in contact with seawater
 UPPER AQUIFER TYPE: Unconfined ; Where water table is upper surface of saturated aquifer
 UPPER AQUIFER GEOLOGY: Dike ; Aquifers in dike compartments
 UPPER AQUIFER UTILITY STATUS: Potential use
 UPPER AQUIFER SALINITY in mg/l: Drinking
 UPPER AQUIFER UNQUENESS: Fresh (<250)
 UPPER AQUIFER VULNERABILITY: Irreplaceable
 High
 LOWER AQUIFER HYDROLOGY: ; Fresh water in contact with seawater
 LOWER AQUIFER TYPE: Unconfined ; Where water table is upper surface of saturated aquifer
 LOWER AQUIFER GEOLOGY: Dike ; Aquifers in dike compartments
 LOWER AQUIFER UTILITY STATUS: Drinking
 LOWER AQUIFER SALINITY in mg/l: Fresh (<250)
 LOWER AQUIFER UNQUENESS: Irreplaceable
 LOWER AQUIFER VULNERABILITY: High

Printed: 16-Mar-04

Appendix B-1

PRELIMINARY RESULTS



Robert and Bridget Hammerquist
January 3, 2017
Page 2 of 6

January 3, 2017

Robert and Bridget Hammerquist
bridgethammerquist@hawaiiintel.net

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)

Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Robert and Bridget Hammerquist:

Thank you for your emails received on July 25, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Dairy Herd Size

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

The herd size for HDF is consistently represented as the potential maximum number of cows guided by the results of the nutrient analysis which reflects the carrying capacity of the land (EISPN Section 2.3 *Proposed Action*; EIS Section 1.2 *Proposed Project*). The distinction between the herd sizes and permit differences is explained in the EIS Section 2.4 *Planned Dairy Development on Māhā'ulepū Agricultural Lands*. During the public scoping meeting, participants expressed an interest to understand impacts of the committed herd size (up to 699 mature dairy cows). HDF agreed to analyze and present impacts at both the committed and contemplated (up to 2,000 mature dairy cows) herd size. Therefore, the probable impacts of the potential contemplated herd size are also analyzed and clearly identified in the Draft and Final EIS.

HDF is committed to establishing a herd of up to 699 mature dairy cows to demonstrate the pasture-based system as an economically and environmentally sustainable model for Hawai'i. Precision agricultural technology that monitors cows' health, grass productivity, and effluent management will be used to ensure environmental health and safety, as well as best management practices, and help determine the ultimate carrying capacity of the land.

With proven success at a herd size of 699, HDF will contemplate the possibility of expanding the herd in the future.

For dairy operations with 700 or more mature dairy cows, regardless if the operation is feedlot or pasture-based, additional regulatory review and permitting by the State Department of Health would be required. The application process for a National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) permit includes public notification and input. At the discretion of HDF, management may choose to submit an application to expand operations up to the carrying capacity of the land, which is estimated to be up to 2,000 productive mature dairy cows. Permit process compliance would be followed at such time HDF may decide to pursue an expanded operation.

Pasture Based Dairy Model

HDF has adapted the New Zealand model – pastoral-based rotational grazing dairy – to U.S. standards and best management practices. NRCs provides extensive guidance for agricultural operations to meet applicable standards including those under the Clean Water Act. Nutrient management is a key tenet, and the protection of waterways has been applied to the design of HDF paddocks using fencing to create large setbacks from drainages. Setbacks at HDF are designed 35-feet from each bank – for a total of 70 feet – to exclude cows from waterways. The setbacks are vegetated to create filter strips to effectively trap soil particles and organic debris from entering stormwater runoff. Setbacks and buffers from public drinking water resources are also incorporated into the farm design (EIS Section 3.3.2 *Agricultural Infrastructure* and Appendix D *Nutrient Balance Analysis*).

HDF's Nutrient Balance Analysis is predicated on farm specific inputs and calculated outputs using the Cornell Net Carbohydrate and Protein System (CNCPS) model. While the Standard D384.2 Manure Production and Characteristics (ASABE, 2005) can still be used today to estimate manure production and nutrient excretion, the CNCPS model uses more realistic nutrient inputs. ASABE is a simplified and general standard last updated in 2005. The ASABE calculations were reasonably correct in year 2000 but have not accounted for changes in genetics, management systems, and nutritional advances over the past 16 years. The ASABE equations, unlike the CNCPS system, does not use farm specific animal, environmental, and dietary inputs to determine its manure production and nutrient excretion estimates, and instead uses "book values".

NRCs Conservation Practice Standard Code 590 – Nutrient Management allows for the use of realistic nutrient inputs when planning for nutrient outputs. The manure production and nutrient excretion estimates from the CNCPS model are more accurate and represent farm specific animal inputs, dietary inputs from available grass trials from the HDF site, and incorporate changes in farm management, genetics, and nutritional advances. Therefore the CNCPS model is more accurate than if manure excretion and nutrient output was based upon "book values". Manure production and nutrient excretion estimates from Exponent Table 1 are based upon "book values" of the ASABE Standard, which uses the publication Dairy NRC 1988 for diet formulations and input (NRC is the National Research Council that published a handbook, "The Nutrient Requirements of Dairy Cattle"). The 28 year old Dairy NRC 1988 is the predecessor of the most recent NRC publication, last updated in 2001. Because of obsolescence associated with these NRC predictions, the 2015 CNCPS model was used for HDF calculations.

References to the CNCPS model calculations can also be found in peer review scientific literature, namely, in the Journal of Dairy Science 98:6361–6380 The Cornell Net Carbohydrate and Protein System: Updates to the model and evaluation of version 6.5 M. E. Van Amburgh, et. al. and also in the JDS 95 :2004–2014 Development and evaluation of equations in the Cornell Net Carbohydrate and Protein System to predict nitrogen excretion in lactating dairy cows R. J. Higgs, et. al. and JDS 81: 2029 - 2039 Evaluation and Application of the Cornell Net Carbohydrate and Protein System for Dairy Cows Fed Diets Based on Pasture Kolver, E.S. et al.

PRINCIPALS

Francis S. Ode, Arch.D.
FAA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Saaman
AIA, CSI, LEED AP

Roy H. Nihei
AIA, ASD, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Rucolla
ACP, LEED AP

James L. Stone, Arch.D.
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
IBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Higb
AIA

Stormwater Quality

Review of the Final EIS has no relationship to the application for NPDES Construction Stormwater Permit. Measures to minimize impacts to surface water are addressed in various parts of Section 4 including Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment*. Appendices E and F contain further information on the analyses.

Climate Conditions and Pasture Grass

The HDF team is keenly aware of the climate factors needed for successful pasture development. The selection of the dairy location and pasture grass type has been carefully determined through years of field trials and guidance from leading local scientists and national experts. Final EIS Section 4.1 contains basic climate information including seasonal temperature ranges. Final EIS Appendix C includes a study by Dr. Russell Yost, Professor and Soil Scientist for over 30 years in the Department of Tropical Plant and Soil Science and the College of Tropical Agriculture and Human Resources at the University of Hawai'i at Mānoa.

Groundwater Quality

Both groundwater and surface water conditions in and around Māhā'ulepū Valley are described and analyzed in the EIS. The nearshore marine water quality downgradient of HDF was also evaluated. Evaluations varied by the water resource as appropriate, and included testing of physical, chemical and biological water quality. Sections 4.16 *Hydrology* and 4.17 *Surface Water Resources & Nearshore Marine Environment* and Appendices E and F contain further information on the analyses.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics. EIS Figure 4.16-1 *Geology of Māhā'ulepū and Vicinity* displays the volcanic geological history of the area.

While the shallow groundwater in the alluvium is hydrologically separate from the source of drinking water in the deep volcanics, HDF installed four groundwater monitoring wells to allow monitoring of water quality within the shallow groundwater. Existing water quality was sampled to serve as a baseline for the nutrient and chemical constituents of the shallow groundwater within the alluvium. Future water quality samples can then be compared to the data documenting the baseline, or pre-dairy, conditions.

HDF has also established a 1,000-foot setback surrounding the nearest County well (Kōloa F) in agreement with the County Department of Water. Within this setback, no effluent will be applied and no animals will deposit manure as the area will not be used for grazing. Additional setbacks to protect water resources are included in the Surface Water section of the EIS. Additionally, the flow of groundwater to the County's Kōloa wells is shown as "pathlines" that identify the direction from which deep volcanic groundwater flows to the well. The flow is modeled from the west-north-west. HDF is to the east (EIS Figure 4.16-3).

Final EIS Readability

The Final EIS volumes are available in electronic format for everyone to read on a standard computer screen at the most comfortable view orientation and enlargement. When printed with two pages per sheet this entire document is contained within a total of nine volumes. Larger format single page printing would increase this total to more than 15 volumes, making it extremely unwieldy for agencies and the public, and therefore less accessible. Also, generation of this huge amount of printed material would not be consistent with our common objectives of sustainability. Formatting of the Final EIS page margins and dividers has been improved in Volumes 3 through 9 to aid readability.

Rainfall and Surface Runoff

Two official sources of rainfall were used to characterize conditions at the HDF site. Table 4.1-1 in the EIS shows average monthly rainfall data for a period of nearly 70 years, at a weather station sited at 100 feet elevation monitored by McBryde Sugar from the early sugar plantation years until the station was discontinued in 1983 (Giambelluca et al., 2013). The rainfall data was used in the Rainfall Atlas of Hawai'i as monthly maps to allow analysis of year-to-year variations statewide over the period between 1920 and 2007 (Fraser, 2012 in Giambelluca et al., 2013). The second rainfall data station at the HDF site is Māhā'ulepū 94.1.1 station, sited at 80 feet elevation and monitored from 1905 to present by Grove Farm. Data from this station is reported to the NOAA National Climatic Data Center, and was used to calculate sizing of the effluent ponds using rainfall data for the most recent 30-year period, from January 1984 through December 2013, when planning for HDF began.

The comments related to the nutrient loading and waste from dairy cows illustrates a lack of acknowledgement that the pasture-based dairy system fundamentally differs from the poorly-managed conventional feedlot dairy that some claim to be the future of HDF. Regulators at the State and national level recognize the value of manure as a source of natural fertilizer, as well as the ability of manure to increase organic matter in soils and improve carbon sequestration (EIS Section 4.3.2 *Long-Term Impacts and Mitigation - Soils*). HDF will employ management practices specifically designed to minimize environmental risk while utilizing 100 percent of manure on-site. HDF will cycle manure and wash water captured from the milking parlor and holding yard through aerated effluent ponds back to the fields as fertilizer. No manure storage or stacking will occur; the nutrient demands of the grass crop will be greater than that provided by the available manure and will, in fact, require additional commercial fertilizer to meet crop demand (EIS Appendix D, *Nutrient Balance Analysis*).

Nearshore Marine Environment

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waiopili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 *Nearshore Marine Waters*, and Appendix F.

The groundwater engineer consulting to HDF estimated the potential nutrients that could leave the site from HDF operations as two percent of nitrogen (totaling 10,000 pounds per year), and one percent of phosphorus (totaling 900 pounds per year). This would not occur as chronic daily releases, rather, contributions would be limited to periods of major rainfall events that exceed 0.8 inches. Such rainfall events are estimated to occur, on average, 10 days annually. No effluent application would be conducted two days prior to, during, and two days after such weather events per best management practice

guidelines. The estimate of nutrients leaving the site is the same for both the committed herd size of 699 mature dairy cows and the contemplated herd size of up to 2,000 mature dairy cows.

To provide perspective, nutrient inputs from the adjacent Kōloa-Po'ipū region were also calculated. Nitrogen input to the marine environment in the Po'ipū region is calculated to be 38,510 pounds annually, or 3.5 times more than the estimate of potential nutrient throughput from HDF. Phosphorus for both domestic wastewater and landscape fertilization in the region is estimated to be 1,260 pounds annually, or 1.4 times greater than the potential discharge from HDF. The nutrient inputs from domestic uses in the Po'ipū region are constant throughout the year and no mitigation is applied to reduce the quantities.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and will allow for evaluation of possible contamination sources.

A large body of scientific literature documents that, contrary to popular belief, reef corals do not necessarily require low nutrient water. In Hawaii, Atkinson et al. 1994 showed that a multitude of corals from around the Pacific Basin growing at the Waikiki Aquarium in high nutrient marine groundwater have higher linear growth rates than corals in the wild. There is no reason to expect that a short-term exposure of a very limited community to elevated nutrients will result in any negative impacts to corals in the mixing zone of Waipiihi Ditch and the ocean.

Public Trust Doctrine

The proposed action is consistent with the public trust doctrine. The Hawai'i Constitution states that all public natural resources, including water resources, are held in trust by the State of Hawai'i for the benefit of the people of Hawai'i and that the State should "conserve and protect" those natural resources but also "promote the development and utilization of these resources." The Hawai'i Supreme Court has held that, as a result, the State has a "dual mandate." That mandate is 1) to conserve and protect the water resources of the State, which include both groundwater and surface water and but also 2) to allow for "maximum beneficial use" of those resources, including for agriculture. The Hawai'i Supreme Court has therefore expressly rejected the concept that "resource protection" is a categorical imperative. It has held that the State should allow "controlled development" that, while giving preference to public use, access and enjoyment, "promote[s] the best economic and social interests of the people of this state."

Based on this dual mandate, the State has developed the water code, which states that it should be "liberally interpreted to obtain maximum beneficial use of the waters of the State for purposes such as domestic use, aquaculture uses, irrigation and other agricultural uses, power development and commercial and industrial uses" while also adequately providing for the "protection of traditional and customary Hawaiian rights, the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the State for municipal uses, public recreation, public water supply, agriculture and navigation. Such objectives are declared to be in the public interest."

The public trust doctrine therefore involves a balance--protection and conservation of the public natural resources of the State and a maximum beneficial use of those resources, including for agriculture. Designation of "important agricultural lands," including the HDF site, heightens the public interest in development of agriculture as the Hawai'i State legislature has declared that the people of the State have a "substantial interest in the health and sustainability of agriculture as an industry" and, when so designated, the policy of the State is to promote the long-term viability of agricultural uses on those lands, including by "promot[ing] the maintenance of essential agricultural infrastructure, including the irrigation systems." This serves the "compelling state interest in conserving the State's agricultural land resource base."

The proposed dairy farm will use water from Waita Reservoir for irrigation, which is also the water source for several other farmers and ranchers in the area, including a taro farmer. Non-potable water from Waita Reservoir, which uses water from upland streams, provided irrigation water to the sugar plantation that historically operated in the Māhā'ulepū area, and is used for recreational fishing. The reservoir is located west of the HDF site.

Potable water for the dairy farm will be drawn from deep groundwater wells that were installed by the sugar plantation that formerly operated on the site. The potable water will be used as drinking water for people working on the dairy farm and for the cows. As a result, the proposed action will advance both purposes of the public trust doctrine. The dairy farm will advance the important public interest in protecting and conserving agriculture in the State, including on important agricultural lands, and also further the goal of maximum beneficial use of the surface water and groundwater on those important agricultural lands.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAJ>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Aloha,

I have lived more than half my life on Kauai and have lived and been employed on the Southshore for all of those 26 years. I am concerned about the proposed dairy Hawaii Dairy Farms has planned in Mahalepau Valley. Coming from a family of farmers, I am definitely not anti-ag, but the location in which they are trying to put the dairy is concerning to me from both an environmental and economic standpoint.

Simplifying it to a very basic risk and reward calculation, economically, the answer is clear:

- The dairy is creating 5 direct jobs and 6 indirect jobs. The dairy puts at risk the thousands of jobs of those employed in the Koloa/Poipu area. Per the Draft EIS, the dairy will produce \$60,000 in tax revenues for the State and \$51,000 in revenues for the County and will put at risk the livelihood of thousands of residents, viability of many businesses, and property values of many homes and businesses in Koloa/Poipu. These currently generate over \$28,000,000 in property taxes alone, not to mention reduced GET, TAT, employment and income taxes. The domino effect from this economically will be substantial to both State and County as well as potentially increasing unemployment and diminishing employment opportunities which will put a great strain on our island community.

I feel Hawaii Dairy Farms has not been forthcoming. I have questioned their integrity and their plan since they first did not hold community meetings nor meetings with potential stakeholders prior to a newspaper article in late 2013 which stated they were putting a dairy in at Mahalepau. I feel they also discredited themselves with the many inaccuracies in their original plan which oddly weren't questioned by groups like the Soil and Water Commission among others. I'm no expert, but the grossly inaccurate original statement on the soil type (free flowing volcanic) immediately jumped out at me and should have been a red flag inaccuracy for departments like the Soil and Water Commission, Department of Health and NRCS. HDF has since done a thorough analysis and identified the various types of soil, but only after they were called out on it by community groups, not the officials who should have caught it. These are the experts we, as citizens, have to trust to analyze and approve such plans so it is concerning and disheartening that something as obviously incorrect and critical as this was not questioned before the plan progressed and received approvals. If HDF were forthcoming I would not now be so questioning and skeptical of what they present.

- This distrust makes me question why in table 4.1-1 in the Draft EIS, a chart of monthly rainfall data for the area, is dated from 1904-1983. Making claims on the average rainfall in the area using data ending more than 33 years ago seems odd and brings into question why they would not use data through at least a year or two ago. It certainly doesn't include the 30 days and 30 nights of rain in March 2006. Why?

I love Kauai, it is my home, I don't want it to be a test center for unproven ideas with likely detrimental outcomes socially, environmentally and economically. Kauai is the most beautiful of all the Hawaiian Islands, yes, I am biased.

- There are no other successful dairies of this type in a tropical climate. Yes it was a different type but we all remember the smell and mess from Anahola and those cows had a lot of area to roam and graze. There also is not an ounce of shade on the site other than the milking barn and shade is exactly where cows want to be in the day. This was evident in Anahola as the cows were always under the shade of sheds and I see it every day with the cattle grazing adjacent to my house. They graze morning and evening and rest in the shade during the day. (Note: I LOVE this form of ag: low density, free ranging)

- Potentially further polluting an already contaminated stream/ditch that drains into the ocean? A no-brainer. Even if it were not already polluted, environmentally, it should not be in this location, so close to and directly upstream of the ocean.

With Grove Farm's 33,000 acres, many of which are also designated Important Agricultural Lands I am sure they could look a little harder and find another location, closer to shipping and a greater distance from the ocean, homes and a thriving economic center.

- The Draft EIS states that due to Kauai's rural nature, most homes are within one mile of some agricultural activity, which may be true, but not within one mile of an industrial animal operation. Cattle ranging currently are in much lower densities.

Lastly, it really is improbable that as the Draft EIS states, "The dairy will not adversely affect residents, recreational activities, guests at nearby resorts, or diminish property sales or values in the area." And that "no noticeable odors, flies, discharge or waste will reach resort or residential areas". Experts not paid by HDF have done analyses that indicate otherwise. I live more than a mile from a hog farm and with the increased number of days with variable winds (up 30% in 40 years; UH study) there are many more days each year that I can smell it. It pre-existed, I chose to live there, not so with the thriving visitor industry on the Southshore and the proposed dairy.

Thank you for considering my concerns and exercising careful scrutiny in analyzing the Dairy's plan and the risks it poses both environmentally and economically for our beautiful island home.

Sincerely,



Diann Hartman



GROUP 70
INTERNATIONAL

PRINCIPALS

Francis S. Ode, AIA, AIA, AIA, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Saaman
AIA, AIA, LEED AP

Roy H. Nihai
AIA, AIA, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AIA, LEED AP

Christine Mendes Rucolla
AIA, LEED AP

James L. Stone, AIA, AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAIA, AIA

Hiroshi Higb
AIA

January 3, 2017

Diann Hartman
diann.hartman9@gmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Diann Hartman:

Thank you for your email of July 14, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Two official sources of rainfall were used to characterize conditions at the HDF site. Table 4.1-1 in the EIS shows average monthly rainfall data for a period of nearly 70 years, at a weather station sited at 100 feet elevation monitored by McBryde Sugar during the early sugar plantation years until the station was discontinued in 1983 (Giambelluca et al., 2013). The rainfall data was used in the Rainfall Atlas of Hawai'i as monthly maps to allow analysis of year-to-year variations statewide over the period between 1920 and 2007 (Fraser 2012 in Giambelluca et al., 2013). The second rainfall data station at the HDF site is Mahalepū 94.1.1 station, sited at 80 feet elevation and monitored from 1905 to present by Grove Farm. Data from this station is reported to the NOAA National Climatic Data Center, and was used to calculate sizing of the effluent ponds using rainfall data for the most recent 30-year period, from January 1984 through December 2013, when planning for HDF began.

Successful pastoral dairies exist at numerous locations in New Zealand, as well as suitable farming regions in the United States. Several rotational grazing dairy operations located in Florida and Georgia operate successfully, with farms containing over 2,000 animals. Numerous articles and publications on rotational grazing dairies are cited in Progressive Dairyman and other industry news sources.

Diann Hartman
January 3, 2017
Page 2 of 3

Complaints from the public citing the high levels of enterococcus in Waipili Ditch and public concerns about the proposed dairy prompted the Hawai'i State Department of Health (DOH) Clean Water Branch (CWB) to conduct a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Waikomo watersheds. DOH CWB conducted water sampling within the Waipili Ditch and areas upstream, and initiated a series of investigations into water quality issues. The Sanitary Survey findings resulted in an expression of concern by DOH CWB that the number of injection wells and cesspools in the adjacent Waikomo watershed, which includes Kōloa and Po'ipū, are impacting the waters of the Waipili Ditch.

The geological and hydrological composition of the highly urbanized Po'ipū/Kōloa watershed differs from Māhā'ulepū sub-watershed, resulting in different rates of groundwater movement. Groundwater velocity under the proposed HDF site is on the order of 1.2 feet per day, while the groundwater under the Po'ipū-Kōloa watershed area averages 10 feet per day. The faster movement of groundwater reduces the attenuation period of bacteria, viruses, and nutrients that occurs with movement through soils.

The Part 1 Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors to the fecal indicator bacteria (FIB) levels in ditches running through Māhā'ulepū Valley. CWB noted that Waipili Ditch is a man-made drainage ditch on private property, and is not an inviting recreational body of water utilized by people. Further testing is needed to more clearly identify whether the source(s) of FIB is human or animals, and DOH CWB has partnered with a University of California laboratory to more definitively determine the source of the fecal contamination in Waipili Ditch. Results will be published as Part 2 of the Waipili Ditch Sanitary Survey. The Waipili Ditch Sanitary Survey, Kauai Part 1 can be accessed on the DOH Clean Water Branch website under "Library" (<http://health.hawaii.gov/cwb>).

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainage (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Waipili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waipili Ditch will be improved by active management of the dairy site.

As a part of the EIS, alternatives were evaluated that could attain the objectives of the action's purpose and need, and were compared with environmental benefits, costs, and risks of each reasonable alternative against those of the proposed dairy project. Further discussion of alternatives can be found in EIS Section 6.

Of all the alternative actions and locations considered, the planned agricultural operations of Hawai'i Dairy Farm is the only approach that achieves project objectives and meets each of the five Evaluation Criteria described in EIS Section 2.3.4.

Comment and question on DEIS by Hawaii Dairy Farms re. Mahaulepu project

Diann Hartman
January 3, 2017
Page 3 of 3

Comments by Kilpatrick about the adverse economic impacts of the dairy appear to be based on nuisance parameters and footprints of conventional feedlot dairies found on the mainland, not on those of the planned Dairy which will be a modern facility that uses rotational pasture-grazing. Results of technical studies presented in this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort and residential areas. The review of property values adjacent to beef cattle operations in the Kōloa region reveals newer homes with large square footage in a luxury residential community with 2016 assessed values of \$1,297,150 per lot, to \$2,893,100 per lot with a home. The proposed dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Danny Hashimoto <dakinedanny@yahoo.com>

Mon 7/25/2016 5:34 PM

to: info@omidairygroup.com <info@omidairygroup.com>; doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>;
d.env.keith.kawaoka@doh.hi.gov <d.env.keith.kawaoka@doh.hi.gov>; HDF <hdf@group70int.com>; info@hawaiidairyfarms.com
<info@hawaiidairyfarms.com>;

To:

Pam and Pierre Omidyar
Hawaii Dairy Farms, LLC
P.O. Box 1690
Koloa, HI 96756

Amy Hennessey
Hawaii Dairy Farms, LLC
P.O. Box 1690
Koloa, HI 96756

Virginia Pressler, MD
and Laura McIntyre
State of Hawaii, Dept. of Health
1250 Punchbowl St
Honolulu, HI 96813

Keith Kawaoka
Environmental Administration
1250 Punchbowl St
Honolulu, HI 96813

Jeff Overton
Group70 International, Inc.
925 Bethel St., 5th Floor
Honolulu, HI 96813

Dear Gentlemen and Madams,

I am writing to express my concern over this dairy project as set forth in the DEIS. First, I am kanaka maoli and Mahaulepu is one of my favorite areas for recreation and fishing. I also enjoy walking the beach from the Waipili Stream area and visiting the Makuawahi Sinkhole.

It is a known fact that Waipili Stream is polluted (high levels of bacteria, as acknowledged by the State) and it appears that with the amount of wet manure and urine deposited, the streams, Waipili and possibly others will become even more

polluted and create a greater health hazard, particularly for beach goers in the area. I notice there are no signs in the area of the Waioipili Stream mouth warning people of the pollution level. I do not see in the DEIS how HDF is addressing or solving this critical problem. A blanket statement of "zero waste discharge" from the grounds of the dairy seems inconceivable and inaccurate.

I would like to see answers to the above, please. There are many other concerns that have been raised by others and I trust that the DEIS will be fully and accurately addressed for the benefit of all.

My heartfelt appreciation...

Sincerely,

Danny Hashimoto
Kapapa, HI 96746

134 Lihau St.
Kapapa, HI 96746

Email: dakinedanny@yahoo.com



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihel
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yulín
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Danny Hashimoto
134 Lihau Street
Kapapa, Hawaii 96746
dakinedanny@yahoo.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawaii
Response to Comment on Draft EIS

Dear Danny Hashimoto:

Thank you for your email of July 25, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Complaints from the public citing the high levels of enterococcus in Waioipili Ditch and public concerns about the proposed dairy prompted the Hawaii State Department of Health (DOH) Clean Water Branch (CWB) to conduct a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Waikomo watersheds. DOH CWB conducted water sampling within the Waioipili Ditch and areas upstream, and initiated a series of investigations into water quality issues. The Sanitary Survey findings resulted in an expression of concern by DOH CWB that the number of injection wells and cesspools in the adjacent Waikomo watershed, which includes Kōloa and Po'ipū, are impacting the waters of the Waioipili Ditch.

The geological and hydrological composition of the highly urbanized Po'ipū/Kōloa watershed differs from Māhā'ulepū sub-watershed, resulting in different rates of groundwater movement. Groundwater velocity under the proposed HDF site is on the order of 1.2 feet per day, while the groundwater under the Po'ipū-Kōloa watershed area averages 10 feet per day. The faster movement of groundwater reduces the attenuation period of bacteria, viruses, and nutrients that occurs with movement through soils.

The Part 1 Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors to the fecal indicator bacteria (FIB) levels in ditches running through Māhā'ulepū Valley. CWB noted that Waioipili Ditch is a man-made drainage ditch on private property, and is not an inviting recreational body of water utilized by people. Further testing is needed to more clearly identify whether the source(s) of FIB is human or animals, and DOH CWB has partnered with a University of California laboratory to more definitively determine the source of the fecal contamination in Waioipili Ditch. Results will be published as Part 2 of the Waioipili Ditch Sanitary Survey. The Waioipili Ditch Sanitary Survey, Kauai Part 1 can be accessed on the DOH Clean Water Branch website under "Library" (<http://health.hawaii.gov/cwb>).

No dairy at Mahaulepu Kauai

Danny Hasimoto
January 3, 2017
Page 2 of 2

D.G. Hayden <kianagh@yahoo.com>

Thu 7/21/2016 7:41 PM

To:HDF <hdf@group70int.com>;

Aloha

We are not in support of having a Dairy at Mahaulepu Kauai.
Because of the pollution to AIR, LAND, and WATER.

Residence of Kauai since 1970
Mahalo

Chris and Diana Hayden

The groundwater engineer consulting to HDF estimated the potential nutrients that could leave the site from HDF operations as two percent of nitrogen (totaling 10,000 pounds per year), and one percent of phosphorus (totaling 900 pounds per year). This would not occur as chronic daily releases, rather, contributions would be limited to periods of major rainfall events that exceed 0.8 inches. Such rainfall events are estimated to occur, on average, 10 days annually. No effluent application would be conducted two days prior to, during, and two days after such weather events per best management practice guidelines. The estimate of nutrients leaving the site is the same for both the committed herd size of 699 mature dairy cows and the contemplated herd size of up to 2,000 mature dairy cows.

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waiopili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 Nearshore Marine Waters, and Appendix F.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kauai community, and will allow for evaluation of possible contamination sources.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAJ>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

HDF, LLC Draft EIS Comments by Kona Moku Billy Kaohelauiii and Terrie Hayes

Terrie Hayes <terriehayes@gmail.com>

Mon 7/25/2016 4:34 PM

To: doh.epo@doh.hawaii.gov <doh.epo@doh.hawaii.gov>; HDF <hdf@group70inc.com>; jim@hawaiidairyfarms.com <jim@hawaiidairyfarms.com>;

July 25, 2016

Llewelyn "Billy" Kaohelauiii
Terrie Hayes
2249 Kuai Rd.
Koloa, HI 96756
terriehayes@gmail.com

Virginia Presler, M.D., Director
Laura McIntyre, Environmental Planning Office
State of Hawaii, Department of Health
1250 Punchbowl St.
Honolulu, Hawaii 96813
(808) 586-4337
doh.epo@doh.hawaii.gov

Jeff Overton, Group 70 International, INC.
925 Bethel St, 5th floor
Honolulu, HI 96813
(808) 523-5866
HDF@Group70inc.com

Hawaii Dairy Farms, LLC
PO Box 1690
Koloa, HI 95756-1690
jim@hawaiidairyfarms.com

RE: HDF, LLC DRAFT EIS Comments

Aloha,

As Tropical Storm Darby hits our State, and Hawaii News Now reports 3 more potential Hurricanes are currently in the Pacific, one should PAUSE and wonder what our weather is really like.

A BROWN WATER WARNING was issued for the entire island of Oahu, today, after a Tropical Storm blew by.

Your (HDF) DEIS and 3rd Draft AIS both report 10 or 7-8 Weather Events a year.

Neither is realistic, considering our RECENT weather.

That HDF used a weather model that did not include Hurricane EWA in 1982 and Hurricane INIKI on (9/17/1992), as well as the recent, 40 Day Rain Event and KALOKO RESERVOIR Dam Disaster in March 14, 2006, seems to be remiss in helping to determine future REALISTIC weather, rain and runoff

"IN TWO MONTHS PREVIOUS, FEB- MARCH 2006, HEAVY RAIN caused 111 FLASH FLOOD WARNINGS."

Honolulu Advertiser.com article July 25, 2008.

Everyone knows weather patterns are UNPREDICTABLE at best.

WE experienced 15 named storms in the 6 month 2015 Hurricane Season.

Which brings us to your plan to evacuate, EMPTY the EFFLUENT PONDS, as stated

in HDF Waste Management Plan, at least 96 hours prior to the Hurricane's potential arrival.

THIS FOUR DAYS PRIOR to Hurricane's approach.

Although the Hurricanes may have skirted our island this time,

THE PONDS WOULD STILL HAVE TO BE EMPTIED ONTO THE UNPROTECTED LAND.

This would mean the PONDS would have been emptied onto the caly soil covered w/ grass.

What happens to the WET, UNCONTAINED MANURE THEN?

In DEIS Volume 2, BIOLOGICAL surveys, page 19, states the underground Network, "...presently all interconnected" and Surface Water and Marine assessment, page 2 "... will eventually reach the OCEAN"

We are extremely concerned about contamination of our drinking and ocean water.

As a Fisherman my whole life, I Cannot except the potential pollution and the eminent disaster to our pristine Maha'ulepu Reef and Ocean resources.

The fishery could be irreversibly damaged, as well as our DRINKING water.

On Dec. 8, 2014, a complaint was filed by Aha Moku Advisory Committee c/o The DLNR, by KONA AHA MOKU, Ulewelyn Kaohelauiii, reporting concerns involving Natural and Cultural resources, and Traditional Hawaiian practices.

This Complaint is still pending with the DLNR, without resolution.

Cultural access remains at issue.

None of the comments and concerns on the Kona Moku Report were addressed sufficiently in the DEIS, including Cultural practices and access, Natural resources and Traditional Hawaiian practices.

Also comments to the CIA interview did not seem to be Considered in the DEIS.

Most of HDF Group 70 response to our concerns, previously submitted, seem to only scratch the surface of the numerous concerns, and doesn't address the potential for harm.

Additionally, There remain many unanswered questions involving what if your plan FAILS?

Please REJECT This Draft EIS. We have No guarantee it will not HARM our environment.

The South Shore is too Precious to WASTE.



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Llewelyn and Terrie Hayes
2249 Kuai Road
Kōloa, Hawai'i 96756
terriehayes@gmail.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Llewelyn and Terrie Hayes:

Thank you for your email received July 25, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

There has been no rainfall event that would exceed the capacity of the effluent ponds since rainfall has been recorded in Māhā'ulepū Valley. The effluent pond capacity has been designed to exceed the regulatory requirement of containing the 25-year, 24-hour rainfall event. Under the committed herd size of 699 mature dairy cows, the ponds could hold an additional 45 percent volume; under the contemplated herd size of up to 2,000 mature dairy cows, the ponds could hold an additional 12 percent volume. An emergency containment berm has also been added to the design, providing additional capacity equivalent to 30 days of effluent for the potential contemplated herd size up to 2,000 mature dairy cows.

An emergency preparedness plan for protection of animals has been prepared for HDF internal use that addresses hurricane, fire, and potential flooding hazard scenarios. HDF is not in a tsunami inundation area, so this scenario is not planned for in the disaster plan. The disaster plan relies upon knowledge of cow behavior, and is based on extensive guidance for livestock protection from NRCs, the Florida State Agricultural Response Team (SART), Pennsylvania State College of Agricultural Sciences, and Cornell University Cooperative Extension. The plan includes safety procedures during any disaster, follow up actions, and emergency contacts for assistance before, during or following the event. Further information is provided in EIS Section 4.6.2.

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waiopili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of both physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 *Nearshore Marine Waters*, and Appendix F.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainage way (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainage ways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Waiopili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainage ways. Over the long-term, the surface water quality in the agricultural ditches and Waiopili Ditch will be improved by active management of the dairy site.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kauai community, and will allow for evaluation of possible contamination sources.

As part of the EIS process, the HDF project is subject to a historic preservation review by the State Historic Preservation Division under Hawai'i Revised Statute Chapter 6E and Chapter 13-284. An Archaeological Inventory Survey (AIS) and a Cultural Impact Assessment were conducted by Scientific Consultant Services for the proposed project. Sections 4.7 and 4.8 of the EIS provide an evaluation of archaeology and cultural resources, with the full reports in Volume 2, appendices G and H.

Traditional and historic use of the Māhā'ulepū area includes intensive sugarcane cultivation throughout the entire valley (including the project area), as evidenced by the infrastructure in the valley. Early 20th century maps also document the extent of the fields throughout the Kōloa area, showing the entirety of the current project area consisted of sugarcane lands. Based on the research and comments received from the community, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights or any ethnic group related to numerous traditional cultural practices will not be impacted by establishment of the dairy.

The State Historic Preservation Division accepted the AIS on December 19, 2016 (Appendix G). SHPD concurs with the significance assessments and mitigation recommendations in the AIS, which identifies the 14 plantation-era sites within the project area as significant only under Criterion d (information potential). The letter states no further work is recommended for these sites (50-30-10-2251 through 2262). Two sites outside the Project Area, an enclosure (Site -2250) and a petroglyph complex (Site -3094), were assessed as significant under Criterion d (information potential) and e (cultural value). The SHPD letter states that the current proposed project will not affect these two sites, and no further mitigation is recommended for the project.

Based on the AIS and CIA technical reports, no significant cultural resources are located on the HDF property. Access to adjacent properties will continue to be the responsibility of the land owner, Mahaulepu Farm, LLC.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner



January 3, 2017

Donald E. Heacock
koadonheacock@yahoo.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Donald E. Heacock:

Thank you for your email of July 21, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Application of manure provides organic matter that will dramatically improve soil health and allow nutrients from manure to be accessible to grow the grass crop. Traditionally, soil has been the largest area of storage for carbon on earth. However, human disruption of the carbon cycle throughout periods of modern industrialization has released excess carbon into the atmosphere and into the oceans, resulting in a lack of stable carbon that was previously stored in soils. Photosynthesis is the greatest catalyst of transferring carbon from the air into soil. Once in soils, carbon feeds soil microbes that assist plants in acquiring nutrients and create stable forms of soil carbon. Microbes such as mycorrhiza effectively transport a variety of needed nutrients effectively into plants, including nitrogen and phosphorus.

The State of Hawai'i Department of Health (DOH) Clean Water Branch (CWB) conducted a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Po'ipū/Kōloa watershed. DOH CWB expressed concern in the survey results that the number of injection wells and cesspools in the Po'ipū/Kōloa watershed are impacting the waters of the Waioipili Ditch. This is largely from the different geological and hydrological composition of the watersheds. Groundwater in the highly urbanized Po'ipū/Kōloa watershed is calculated to move an average of 10 feet per day. The groundwater in the Māhā'ulepū sub-watershed has a calculated velocity on the order of 1.2 feet per day. The Sanitary Survey identifies the Kōloa karst topography and lava tube system that straddles the Po'ipū/Kōloa watershed and the Māhā'ulepū sub-watershed as a possible subterranean transport of injection well and cesspool effluent to the Waioipili Ditch.

Soils in the Māhā'ulepū sub-watershed are formed by the poorly permeable alluvium that covers the valley floor. Alluvium is highly weathered lava that forms silty clay layer, which is described as "poorly drained".

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
IBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACP

Hiroshi Hidb
AIA

Ms. Sina Pruder, Chief, Wastewater Branch
Hawaii Dept. of Health
PO Box 3378
Honolulu, HI 96801-3378

24 July 2016

Subject: Hawaii Dairy Farms Waste Management Plan: EIS review and comments

As the Kauai District Aquatic Biologist I have found that the EIS is inadequate and omits important steps (i.e., stream and coral reef baseline data collection and monitoring programs) necessary to protect sensitive Public Trust aquatic resources.

The EIS states that Hawaii Dairy Farms (HDFs):

- Will not be a "zero waste discharge site";
- Operations and actions will improve soil quality and protect the environment;
- Will generate significant amounts of manure and urine on a daily basis.

Previous soil analyses done by the Natural Resources Conservation Service, USDA, on the soils within the HDFs site show that over 60 % of these soils are hard, compact clay with very poor water percolation capacity with high capacity for stormwater runoff. Additionally, there are numerous drainage ditches that bisect the HDFs site, therefore it is highly likely that large storm events will cause significant discharge of nutrients and suspended solids into Waioipili Stream and other smaller drainages that all discharge into the coral reefs adjacent to the HDF site. Increased eutrophication will negatively impact both Waioipili Stream (an already polluted stream) and the near-shore coral reefs at Mahaulepu.

Based upon available information, large storm events will likely discharge significant levels of nutrients and suspended solids and cause subsequent coastal eutrophication. Therefore it is essential to require HDFs to gather meaningful baseline biological and physiochemical data from Waioipili Stream and from the nearshore coral reef ecosystem.

Finally, as written the EIS inadequately addresses the effects of polluted stormwater runoff on sensitive aquatic ecosystems. Therefore, I strongly recommend that HDFs be required to collect biological/physiochemical data from Waioipili Stream and the adjacent coral reefs, and to establish a sufficient long-term monitoring to assess the impacts of the dairy operations on these public trust aquatic resources. These baseline data and monitoring programs need to be developed in cooperation with the Division of Aquatic Resources, Hawaii Dept. of Land & Natural Resources, and the U.S. Fish and Wildlife Service, Dept. of Interior.

Sincerely,

Donald E. Heacock, Kauai District Aquatic Biologist

Donald E. Heacock
January 3, 2017
Page 2 of 2

The classification of soils as poorly drained indicates a relatively slow rate water movement within soil and to surrounding areas. Poorly drained is not an indication of low or poor infiltration. Infiltration refers to the ability of water to enter the soil surface, whereas "drainage" refers to the movement of water within or from the soil profile. This slow movement allows for attenuation (reduction) of bacteria, pathogens, and nutrients from manure. Section 4.3 of the EIS characterizes soil conditions, and anticipated impacts from effluent and supplemental nutrient application.

The drainageways and ditches installed in the late 1800s and early 1900s were developed to bring water to and through the site for sugarcane irrigation. HDF will protect water resources from runoff through both physical setbacks and effluent application limits. HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainageway (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddock, Fencing and Setbacks in the EIS.

Waipili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waipili Ditch will be improved by active management of the dairy site.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and will allow for evaluation of possible contamination sources.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OE/QC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAU>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

dairy

mindy hibbitt <suncellkauai@hotmail.com>

Sun 7/24/2016 9:32 AM

To: HDF <hdf@group70int.com>;

Aloha,

NO DAIRY NO WAY. Really you guys care about the people of Kauai? Then listen to the hundreds of south side and island residents that hate your idea, not just dislike, but hate it. Get over it, and stop trying to abuse Kauai residents. I and my family have lived in Koloa for 25 years and raised on the east side. I hope you dairy people can put a dairy in your backyard. Look at the last on in Moloaa it closed due to law suits. You guys have lawsuits before its even opened.

This will continue until you are closed, if you even open. Give up now and focus on something good for our community and since you don't know what that is Ulu Pono, you might just want to close your doors all together and find another puppet master billionaire.

We don't want you stink milk, stink cow shit, and stink economics. The hole community curses you and you still go on you guys are crazy. We will protect our land against you industrial food lot till we die, and we curse you all for you inconsiderate environmental terror.

MAHALO
KAUAI PEOPLE

FW: Hawaii Dairy Farm

From: Joy Hiraoka [mailto:jhiraoka@kfcu.org]
Sent: Monday, July 25, 2016 10:30 PM
To: DOH.EPO <DOH.epo@doh.hawaii.gov>
Subject: Hawaii Dairy Farm

In regards to Hawaii Dairy Farm's proposal to build a dairy farm on Kauai in Mahaulepu Valley, I would like to state my objections to this project. I am not questioning the technical aspect of their plans however I am questioning their decision to locate it in Mahaulepu Valley which is so close to our South Shore of the island. I believe that our main source of income is from the tourist industry which has been and always will be Kauai's future. Kauai's future will not be a dairy farm. The law of nature is that cows will produce manure which will draw flies which will lead to contamination of the quality of the air, as well as impacting the vision and perception of Kauai which could negatively affect the tourism trade within that area. These are not effects that will be seen immediately, but in time, the long range negative effects could far outweigh any perceived positive benefits. The land is the foremost concern. Kauai has always maintained a conservative approach to the development of its land and has controlled commercial development and has tried to retain its pristine beauty. The utilization of whatever ag lands remaining on the island is just as important. The people and land of Kauai will always be here, long after Hawaii Dairy Farm has come and gone. But whatever damage is done to the land will remain for a very long time just as any damage to our visitors perception of Kauai as they will not return. Please do not proceed with this project.

Joy Hiraoka



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AIA, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yulín
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Mi Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Joy Hiraoka
jhiraoka@kfcu.org

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Joy Hiraoka:

Thank you for your email of July 25, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The Hawaii Dairy Farms (HDF) project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawaii's declining dairy industry, and reduce reliance on imported milk from the mainland United States. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production, without jeopardizing economic aspects of the island's hospitality industry. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawaii's dairy industry.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

The development and long-term operation of HDF will be in full compliance with its agricultural State Land Use District designation, ALISH classifications, and County zoning. The dairy farm will embody the intent of the IAL designation per the Hawaii State Constitution, by using these protected lands for the intended purpose of diversified agriculture, food production and agricultural self-sufficiency.

July 18, 2016

The planned improvements and operations at Hawaii Dairy Farms are compatible with and supportive of State of Hawaii and County of Kauai land use policies, plans and control related to the natural and social environment. The Proposed Project is consistent with and permitted by applicable land use designations and, as discussed in EIS Section 5.0, will contribute a wide range of benefits to further established goals, objectives and policies. In particular, Hawaii Dairy Farms is consistent with the State and County initiatives for food sustainability and the long-term intended use of Important Agricultural Land on Kauai. The dairy is also consistent with the provisions of the State of Hawaii Agricultural Functional Plan, and long-range planning for diversified agricultural use of Mahalepulu lands under the County of Kauai General Plan and the South Kauai Community Development Plan.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawaii for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kauai and those species already in Mahalepulu Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.1.1.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

TO: Jeff Overton
Group70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813
HDF@Group70intl.com

FROM: John R. Hoff
P.O. Box 547
Koloa, HI 96756
sipalhawaii@msn.com

RE: Comments on Hawaii Dairy Farm "Environmental Impact Statement" (EIS) draft

Dear Mr. Overton,

I wish to comment on an issue that is presented on page 4-73 in the

"Volume 1
Draft Environmental Impact Statement"

In the "Long-term Impacts and Mitigation - Air Quality" section, the last sentence in the second paragraph of that section reads as follows: "The project will not require any permits under the Clean Air Act, or State of Hawaii counterpart."

I possess highly qualified, certified, and official information from government (local-State-Federal) agencies verifying illegal dumping, spreading and stockpiling of Construction & Demolition (C&D) debris waste as well as a very high probability of large amounts of asbestos (asbestos dust) as well as smaller amounts of red-lead paint.

Documentation (local-State-Federal) as well as photos supports a very high probability (99 & 44/100%) that hazardous asbestos and red-lead paint waste were illegally disposed of in the Mahalepulu area (I found 3 sites):



spreading tons of contaminated asbestos asphalt on cane roads as "road cover".

Such actions would place residents and visitor's lives, health, safety and welfare in jeopardy considering the close proximity, and exposure, of several resorts, golf clubs, residences, schools, & businesses to possible illegal, hazardous, landfills. Exposure to either of these two hazardous wastes can cause various cancers; such as Mesothelioma.

I do feel these hazardous waste must be found and properly mitigated prior to any finalization of an EIS. ALOHA



John R. Hoff



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matusuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

John R. Hoff
P.O. Box 547
Kōloa, Hawai'i 96756
spalhawaii@msn.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear John R. Hoff:

Thank you for your letter received on July 20, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

HDF will be the first dairy in Hawai'i to employ rotational-grazing, which utilizes manure as a valuable resource. This is a fundamental difference and advantage over conventional feedlot operations, which typically have insufficient land to recycle the nutrients for uptake by forage plants and instead rely on imported feed and large storage lagoons to hold manure. The rotational-grazing method is cost-effective as it reduces the need to import fertilizer and feed, and minimizes potential impacts to the environment by using 100 percent of the manure as nutrients to grow the majority of the forage for the herd. Benefits of pasture grazing include, but are not limited to, improved soil health, and increased animal health and productivity. The dairy will feature modern facilities and practices that will comply with all applicable Federal and State environmental standards.

Section 4.13 of the Environmental Impact Statement (EIS) summarizes a search of State and Federal public records for known hazardous waste on the dairy property. The use and storage of regulated materials for dairy operations is also documented.

The State of Hawai'i Department of Health (DOH) Solid and Hazardous Waste Branch regulates the generation, treatment, storage, and disposal of hazardous waste. The DOH Hazard Evaluation and Emergency Response (HEER) office provides leadership, support and partnership in preventing, planning for, responding to, and enforcing environmental laws relating to the release or threats of releases of hazardous substances. Former agricultural operations resulted in soil contamination on sites across the island of Kaua'i. Site-specific facilities, sites or areas in which HEER has investigated or may investigate are tracked in the public records accessed through the HEER website. The HEER Emergency Response Lookup Spreadsheet (updated 12/2/2014) revealed no sites within the HDF site.

Dairy

hokupaa <hokupaa@hawaii.rr.com>

Sun 6/12/2016 4:02 PM

To: HDF <hdf@group70int.com>;

Not the right thing to do! I am totally against this project!

Sent via the Samsung Galaxy S7 edge an AT&T 4G LTE smartphone

None of the dairy farm parcels are listed for action in the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) information systems database. The database tracks the location of identified abandoned hazardous waste sites. No such sites exist within or adjacent to the dairy parcels. According to the database provided by HEER, no Brownfield sites have been identified within or adjacent to the parcel by Federal, State or County agencies. For additional information on hazardous substances and the history of the HDF site, see EIS section 4.13.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUA1>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Dairy on Kauai

hokupaa <hokupaa@hawaii.rr.com >

Wed 7/20/2016 3:22 PM

To: HDF <hdf@group70int.com>;

We definitely don't need to lose our tourism business pollute our Waters and the land reduce our property values to please some wealthy person who wants to do a dairy at mahaulepu sacred lands

Sent via the Samsung Galaxy S7 edge, an AT&T 4G LTE smartphone



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, AIA
AIA

Paul T. Matusuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Tokahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Hokupaa
hokupaa@hawaii.rr.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Hokupaa:

Thank you for your emails of June 12 and July 20, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawaii's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawaii's dairy industry.

Comments by Kilpatrick about the adverse economic impacts of the dairy appear to be based on nuisance parameters and footprints of conventional feedlot dairies found on the mainland, not on those of the planned Dairy which will be a modern facility that uses rotational pasture-grazing. Results of technical studies presented in this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort and residential areas. The review of property values adjacent to beef cattle operations in the Kōloa region reveals newer homes with large square footage in a luxury residential community with 2016 assessed values of \$1,297,150 per lot, to \$2,893,100 per lot with a home. The proposed dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area.

None of the dairy farm parcels are listed for action in the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) information systems database. The database tracks the location of identified abandoned hazardous waste sites. No such sites exist within or adjacent to the dairy parcels. According to the database provided by HEER, no Brownfield sites have been identified within or adjacent to the parcel by Federal, State or County agencies. For additional information on hazardous substances and the history of the HDF site, see EIS section 4.1.3.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQC:KAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Aloha,

I have been blessed to call Kauai my home for the past 12 years and a proud employee of a fine South shore establishment. I am quite concerned for the future of Mahalulepu Valley and the businesses in the area.

I grew up in Indiana on a farm and around livestock, including Dairy. To say that this will not have any impact on the South shore is simply not the case. It will have impact. There will be flies, there will be plenty of waste and there will most certainly be odor. This has nothing to do with bringing agriculture to the island, but rather the location of the farm.

Before moving to Kauai, I was a client of the Grand Hyatt and sold the resorts on this beautiful island. By this time I was living in Chicago. It was always so refreshing to visit Kauai and breathe in the clean, fresh air after living in a city with plenty of pollution. Allowing a Dairy Farm next to the one of the finest resort communities in Hawaii, will certainly have impact.

I have to say that I'm really confused as to why the county would allow a business that would employ so few and that would have a huge negative impact to exist next to a resort community that not only employs thousands, but brings in millions of dollars of business and taxes each year.

As an employee of the Hyatt, I have been told many times by local businesses that when the Hyatt is busy, they are busy as well. Anything from restaurants to shops and activities.

Please reconsider the location and let's keep our South shore pristine for our visitors and our residents for years to come.

Sincerely yours,


Sherrrie Holl

CC:

Laura McIntyre
Environmental Planning Office
Hawaii State Department of Health
1250 Punchbowl Street
Honolulu, HI 96813
Laura.McIntyre@doh.hawaii.gov

Jeff Overton
Principal Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813
HPF@Group70intl.com

Amy Kennessy
Hawaii Dairy Farms, LLC
P.O. Box 1690
Koloa, HI 96756
info@hawaiidairyfarms.com





Sherrie Holl
January 3, 2017
Page 2 of 2

January 3, 2017

Sherrie Holl
P.O. Box 1803
Kōloa, Hawai'i 96756

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Sherrie Holl:

Thank you for your letter received on July 25, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaua'i and those species already in Māhā'ulepū Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

PRINCIPALS

Francis S. Oda, AIA, AIA, ASIO, LEED AP
FAA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheri B. Saaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucicola
AICP, LEED AP

James L. Stone, AIA, D.,
AIA, LEED AP

Katherine M. MacNeil
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Higb
AIA



January 3, 2017

Howard & Maureen Holt
hholt@hawaii.rr.com

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Howard & Maureen Holt:

Thank you for your email of July 22, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

July 22, 2016

To Whom it may Concern:

We are residents of Kauai and live in the neighborhood of Koloa Estates. We are very concerned about what a large industrial sized dairy will do to our quality of life. We are members of FOMI and are good friends with its President Bridget Hammerquist and value all her dedication to stopping this proposed dairy. We have driven by dairy operations in Colorado and they are located out on the eastern plains far from any established town and are off busy highways. These are our concerns for the proposed dairy:

1. It is located close the Hyatt the largest employer on the island, if allowed to operate it could destroy tourism on the South Shore, the main source of revenue for the county.
2. It is located close to housing developments where housing prices could plummet, which would mean less property taxes assessed.
3. It is near the pristine beach of Mahaulepu where thousands of tourists and residents enjoy the beautiful scenery and watersports. It will pollute the ocean with the waste it produces affecting several endangered species of fish and plants.
4. It is in close proximity to our wells so our drinking water could be poisoned with animal waste.
5. It is going to bring in about a billion flies, we are fortunate on Kauai that we don't currently have an insect problem and we can feel free to enjoy the outdoors without swatting flies.

We believe that an **independent** Environmental Impact Study should be done to look at the risks associated with and industrial sized dairy on the site of Mahaulepu. The EIS that was done was by the same company that is working for the proposed dairy and has to be biased.

We already have a severely polluted stream and the department of health refuses to post signs to warn visitors of the possible risk in getting in the water. We have a friend that was hospitalized after he was infected by the bacteria found in the water.

We already had a much smaller dairy years ago in Waimea and it was shut down because of numerous complaints regarding the odors associated with it.

This is a really bad idea for Kauai the amount of jobs created by the proposed dairy will not outnumber those lost if it is allowed to operate. The milk will not make Kauai more sustainable because it will be shipped off to Oahu.

Sincerely,
Howard & Maureen Holt

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIA

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

Group 70 International, Inc. (Group 70) is responsible for the preparation and processing of the HDF EIS. The EIS was prepared in accordance with the requirements of Chapter 343 Hawaii Revised Statutes and the "Environmental Impact Statement Rules" (Chapter 200 of Title 11, Hawaii Administrative Rules). The environmental planning team at Group 70 has prepared several hundred Environmental Assessment and EIS documents over the past 40 years, and every document has been accepted by the responsible County, State and Federal agency. On numerous past EIS projects, the Hawaii Chapter of the American Planning Association has recognized Group 70's professional work with Chapter awards for excellence in environmental planning. Part of the EIS scoping process involves Group 70's experienced team of technical sub consultants that are well-known and qualified in their respective fields of study. For this project Group 70 is preparing the Hawaii Dairy Farms EIS with the level of analysis required to properly evaluate and disclose the existing environmental conditions, probable impacts with mitigation, and potential cumulative and secondary effects.

Complaints from the public citing the high levels of enterococcus in Waiopili Ditch and public concerns about the proposed dairy prompted the Hawaii State Department of Health (DOH) Clean Water Branch (CWB) to conduct a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Waikomo watersheds. DOH CWB conducted water sampling within the Waiopili Ditch and areas upstream, and initiated a series of investigations into water quality issues. The Sanitary Survey findings resulted in an expression of concern by DOH CWB that the number of injection wells and cesspools in the adjacent Waikomo watershed, which includes Kōloa and Po'ipū, are impacting the waters of the Waiopili Ditch.

The geological and hydrological composition of the highly urbanized Po'ipū/Kōloa watershed differs from Māhā'ulepū sub-watershed, resulting in different rates of groundwater movement. Groundwater velocity under the proposed HDF site is on the order of 1.2 feet per day, while the groundwater under the Po'ipū-Kōloa watershed area averages 10 feet per day. The faster movement of groundwater reduces the attenuation period of bacteria, viruses, and nutrients that occurs with movement through soils.

The Part 1 Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors to the fecal indicator bacteria (FIB) levels in ditches running through Māhā'ulepū Valley. CWB noted that Waiopili Ditch is a man-made drainage ditch on private property, and is not an inviting recreational body of water utilized by people. Further testing is needed to more clearly identify whether the source(s) of FIB is human or animals, and DOH CWB has partnered with a University of California laboratory to more definitively determine the source of the fecal contamination in Waiopili Ditch. Results will be published as Part 2 of the Waiopili Ditch Sanitary Survey. The Waiopili Ditch Sanitary Survey, Kauai Part 1 can be accessed on the DOH Clean Water Branch website under "Library" (<http://health.hawaii.gov/cwb>).

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainage way (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainage ways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Waiopili Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainage ways. Over the long-term, the surface water quality in the agricultural ditches and Waiopili Ditch will be improved by active management of the dairy site.

While it may be ideal for Hawaii Dairy Farms to have an on-island milk-processing partner, it is logistically, financially and technically difficult to start such a business in conjunction with developing the first pasture-based dairy farm in the State. The most feasible and sustainable plan is to process HDF's milk with an existing provider on O'ahu or Hawaii Island. In the future, on-island processing may be a more feasible option. For more information on the purpose and need for the project, see EIS Section 2.0.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

Milk not even healthy

Joe Horak <horakj002@hawaii.rr.com>

Thu 6/9/2016 7:12 AM

To: HDF <hdf@group70int.com>;

Why would someone want Dairy cows that dose to the beach, and then ship the milk to Hilo or Oahu for processing. Do we have a shortage of milk? How much money to save on a gallon of milk and ruin another 500 acres of pristine coastline Do the right thing. Joe Horak



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASD, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
ACP, LEED AP

Christine Mendes Ruotola
ACP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matusuda
PE, LEED AP

Mi Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

January 3, 2017

Joe Horak
horakj002@hawaii.rr.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhāʻulepū, Kōloa District, Kauaʻi, Hawaiʻi
Response to Comment on Draft EIS

Dear Joe Horak:

Thank you for your email of June 9, 2016 regarding the Hawaiʻi Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawaiʻi's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawaiʻi's dairy industry.

Roughly 90 percent of goods used in the state, including daily food requirements of residents and visitors, arrive in Hawaiʻi via ocean and air shipping. The recent announcement by Hawaiʻi Governor Ige at the 2016 World Conservation Congress in Honolulu, to double local food production in the state by 2030, reflects yet another initiative to advance agricultural self-sufficiency within the State. HDF's objectives to produce more than 1 million gallons of milk annually for local consumption through growing more than 70 percent of the herd's feedstock within the HDF site will play a large role in the food sustainability movement in Hawaiʻi.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waiopili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of both physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 Nearshore Marine Waters, and Appendix F.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kauai community, and will allow for evaluation of possible contamination sources.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

July 22, 2016

Mr. Jeffrey Overton
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, HI 96812-4307

Thank you for responding to our February, 2016, letter regarding the proposed HDF Dairy at Maha'ulepu and thank you for also providing us with a copy of the draft EIS.

Unfortunately, your letter did not address our primary concerns that we expressed and the DEIS has ignored some very critical subjects while inadequately or inaccurately addressing others.

We are providing a listing of the primary items that we think need additional study and evaluation. We are hopeful there are no other changes to this DEIS that have not been shared with the public such as was the case with the Waste Management Plan.

The Following is a Listing of Identified Items Omitted and/or Inadequately Addressed in the draft EIS document for Consideration:

Project Economics

1. HDF's Economic Analysis and Business Plan:
 - This proposed dairy is very controversial and many feel will have a very negative impact on the environment and the robust tourist based economy of Koloa & Poipu. Therefore, it only seems reasonable for a detailed economic analysis to be included for the dairy showing specifically how and why it will be successful when such a huge number of other Hawaiian dairy operations have failed over the years or are on the brink of failure as of this writing.
 - In the 1950's there were 90 dairies in the Hawaiian Islands. Currently, all but two have closed due to a host of reasons, but also include increased competition from the mainland and price controls resulting from the existing milk laws in the state (Hawaii Milk Control Act 1967).
 - The DEIS simply infers the HDF operation will be profitable because it "will grow its own feed by using its own cow manure and urine for fertilizer" and this will make the operation profitable. That's it? Actual numbers are needed to support this premise particularly since HDF admits it cannot grow 100% of its food source and will also require additional commercial fertilizer. (Appendix B, pg. 20 and Section, 4, pg. 66 of Volume I).

For the above stated reasons, a detailed economic discussion is needed and should at a minimum include the following:

- **Estimated Costs for Additional Commercial Feed and Fertilizer**—see Section 4, pg. 66, Appendix B, pg. 10.
- **Estimated Hawaiian Labor costs** - labor costs are typically more expensive in Hawaii than on the mainland.
- **Estimated costs of environmental requirements in the EIS.**
- **Product price** - analysis for the actual price to be received from Meadow Gold for the raw product inclusive of trucking and processing.
- **Marketing strategy/Marketing survey** - marketing analysis and an actual marketing survey that identifies consumer demand for local milk vs. cheaper (to produce) imported milk. Strategies to be employed to obtain market share for local milk vs. imported milk particularly considering the economies of scale of imported milk volumes coming from the big box stores such as Safeway, Costco, K-Mart, and Walmart.
- **Meadow Gold** - the State of Hawaii's only milk processor has stated publicly it will not pay a higher price for locally produced milk vs. imported milk. Section 1.5, pg. 1-16. The DEIS lists a necessary agreement with Meadow Gold as an **UNRESOLVED ISSUE**. This is restated in Section 4.28, pg. 4-110.

Air Modeling – Section 4-19

- **Ammonia, hydrogen sulfide, and VOCs** (volatile organic compounds) were not addressed in the modeling efforts even though published studies indicate these gases are emitted by fermenting cattle manure and urine. VOC's also contribute to and exacerbate the greenhouse effect.
- **Green House Gases** - i.e. methane: Livestock—primarily cattle—generate considerable amounts methane when food is digested. Bacteria also emit methane when it digests manure. Cattle's belching and flatulence are responsible for 19 percent of all methane gas released in the United States. Another 13 percent is released by anaerobic bacteria that thrive in manure lagoons. Having 699 cows escalating to a herd of 2,000 cows will generate considerable volumes of methane. However, the generation of methane and its impact on the environment was summarily dismissed in the DEIS.
- **Non-Construction Related Particulates ignored** - the air modeling addressed the construction dust, but did not address continual animal hair, dried manure, and dander (small flakes of skin or hair) easily scattered by the high trade wind conditions in conjunction with the movement of the animals over the property.

Odor Mitigation – Section 4-19

- **Computer Modeling** for odor is inadequate and incomplete. Published studies indicate “computer modeling is not sufficient to accurately predict the olfactory mechanisms responsible for a compound's different detection threshold”. Numerous published studies conclude odors must be measured through extensive tests using human subjects. Empirical data is needed from an operating dairy with similar input criteria for moisture, wind direction, topography (to the extent possible) and herd size versus theoretical variable assumptions used for computer modeling input data. Computer modeling is no better than its input data and this report is sorely inadequate in this area.
- **Topography of the Mahaulepu Valley** is ill suited for odor containment or dispersion. As noted numerous times in the DEIS, Mahaulepu Valley is basically closed on both the east and west sides due to increases in elevation (much like a levee system for a river) and has a drop in elevation of nearly 100' from north to south across the proposed dairy site. The overwhelming directionality of the trade winds from the NE combined with the bounded topography will result in a perfect transport funnel or river of odors cascading down the valley carried by the prevalent winds further down dip to the southern open end of the valley....directly into the Poipu area.
- **The continual moist and warm temperatures in the Mahaulepu Valley** combined with frequent trade wind showers will be conducive to odor generation from the decaying animal feces and urine that will be deposited across all areas of the dairy as the cows move about the property. This combined with the putrid smelling effluent ponds will generate a terrific odor. The noted Best Management Practice included in the DEIS of planting an unidentified number of ironwood trees at the southern open end of the valley indicates HDF's concern for this likely occurrence, but this effort needs more specificity. Additional consideration is also needed of other buffers to shield or contain the obnoxious odors that will be generated 365 days a year and exacerbated by the stated intention to nearly triple the herd size to 2,000 cows.

Insect Mitigation – Section 4-11

- Mitigation noted for the expected explosion in disease carrying flies is minimal at best. The DEIS only lists the introduction of dung beetles, adding pest strips in the milking area, good housekeeping practices, and relying on the current insects on site to control the expect exponential growth in flies. This is grossly inadequate and understudied. Studies show dairies attract a variety of flies and they often migrate off site. When the trade winds are blowing at an exceptionally high rate as they often do for weeks, it can be expected that the various fly population will be blown into Poipu and Koloa and this most likely occurrence is not addressed.

- The DEIS states the effluent ponds will be drained in total every 30-45 days. This is considerably longer than the lifecycle needed for mosquito eggs to be laid and hatched several times. Mitigation for this insect was inadequate and basically ignored suggesting existing onsite dragon flies would be sufficient.

Migratory Bird Treaty Act of 1916

- **Five threatened and endangered birds were noted on or adjacent to the proposed site.** The DEIS indicates the effluent ponds will not be covered per Section 7.2.1 pg. 46. **No provisions were cited for netting (or any other cover) of the ponds to provide protection to prevent these T&E fowl from landing in the sewage, a violation of federal and state laws.**

Clean Water Act

- This DEIS is specific for a dairy herd of 699 cows and as noted there are additional requirements under the Clean Water Act for herd sizes of 700 or greater. While the stated intention is to quickly move to 900 cows and ultimately to a herd size of 2,000, the procedure and timeline for addressing the additional requirements related to the CWA for a large concentrated feeding operation (CAOF) for dairy cattle - defined as 700 cows or greater - was not included in this document, but should be.
- **ZERO DISCHARGE – NO LONGER APPLIES: The original ADVERTORIAL treatise for this dairy touted zero discharge for this operation. Now we see HDF has finally admitted there WILL BE POLLUTION INTRODUCED TO THE GROUND WATER. Therefore, a large gap or missing set of data exists in the DEIS as it DOES NOT include a detailed mapping of the ditch systems that exist on this property nor does it even attempt to address how this complicated network of agricultural ditches connect and flow into existing water features on the property and ultimately to the ocean. ...appendix A, pages 18-20. The document states "there is a system of man-made agricultural ditches that "spread across the valley floor...that serve the purpose of draining run-off from the pasture areas.....but the network was not fully explored, nor was it determined how these presently all interconnect".**

Kona wind rain storms from the south that can produce 2-3 inches of rain in a couple of hours. A complete understanding of the ditch system is of extreme importance in preventing massive storm water run-off from leaving the property and entering the Waioipili Stream, for example, widely used by locals and tourists for wading and other recreational activities as it enters the ocean near Gillian's Beach. My wife and I both have waded in this stream numerous times during the past 15 year period and often see small children playing in and along the stream edges as it enters the ocean.

Operating Liability

- Liability – no financial assurance, liability plan, or insurance coverage was included for any significant events or upsets that will cause spillage to leave the property. A few years ago, Kauai had 40 days straight of rain (Star Bulletin – 3/29/2006) and this event would have caused a catastrophe at this HDF dairy. Despite the mitigation efforts outlined, these major upsets will carry pollutants (including herbicides and pesticides that will be used) from the dairy to the waters of the United States potentially impacting ground water, nearby ditches/streams, large water bodies, and ultimately the ocean.

Monitoring and Adherence to EIS Stipulations

- A thorough discussion should be included regarding the algorithms to be employed by HDF operating personnel for data gathering and reporting of the day to day operations of the dairy relating to adherence to the stipulations in the DEIS and reporting any violations that occur.
- The State and County departments' of Health will play a key role in analyzing reported data and supplying the human resources needed to monitor this project and exacting penalties for violations. Agreements with the State and County for monitoring this operation should be identified, listed, and discussed. Including how Kauai County intends to provide health inspectors for the site on the anticipated \$68,000 annual revenue from the project.

Other Alternatives – Section 1.7.3

“Alternatives are considered the “heart” of the EIS” – EIS Guidelines

- The Ulupono Initiative recently made an unsuccessful offer to purchase a similar sized dairy on the Big Island (Clover Leaf Dairy). The media (Hawaii Tribune Herald, 7/2/2015) reported the existing dairy was a “large scale dairy with 700 cows” and “900 acres” located at Upolu Point on the Big Island (same number of cows, but twice the size of Mahaulepu). The article noted the owner indicated Ulupono offered \$3MM for the operation or \$1MM less than the asking price. HDF, however, states the Mahaulepu dairy will require an investment of nearly 3 times the asking price of the Clover Leaf operation. It is disturbing that this

- **Appendix G** – even a casual review of this document section reveals the numerous water features on or near the proposed operating site highlighting the complexity of the old system of ditches, canals, culverts, bridges, and sluice gates that exist on this property. A complete hydrodynamic understanding of how one system interacts with another is critical for diagramming, predicting, and installing preventative measures to prevent storm water run-off reaching nearby streams. This subject was woefully and inadequately studied in the DEIS. The Mahaulepu area often gets slow moving



January 3, 2017

David and Linda Howell
1568 Pe'e Road #212
Kōloa, Hawai'i 96756

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Mahā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear David and Linda Howell:

Thank you for your letter dated July 22, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

A major goal of HDF is to reinvigorate the dairy industry and to advance food self-sufficiency in Hawai'i. HRS Chapter 343 does not require profitability analyses as a part of the EIS process.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahalepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

- PRINCIPALS**
- Francis S. Oda, Arch.D.,
FAIA, ACP, LEED AP
 - Norman G.Y. Hong
AIA
 - Sheryl B. Seaman
AIA, ASD, LEED AP
 - Roy H. Nihei
AIA, CSI, LEED AP
 - James I. Nishimoto
AIA
 - Stephen Yuan
AIA
 - Linda C. Miki
AIA
 - Charles Y. Kaneshiro
AIA, LEED AP
 - Jeffrey H. Overton
ACP, LEED AP
 - Christine Mendes Ruotola
ACP, LEED AP
 - James L. Stone, Arch.D.,
AIA, LEED AP
 - Katherine M. MacNeill
AIA, LEED AP
 - Tom Young, MBA
AIA
 - Paul T. Matsuda
PE, LEED AP
 - Ms. Ry Kim
IBA, AIB
 - Craig Takahata
AIA
 - OF COUNSEL
 - Ralph E. Portmore
FACP
 - Hiroshi Hida
AIA

comparable dairy on the Big Island was not given any consideration as an ALTERNATIVE.

- The similarities between Mahalepu and Clover Leaf Dairy are numerous and would have added greatly to this Section of the DEIS. Some of the noted similarities are as follows:

- **Located in the Hawaiian Islands**
- **Same existing herd size**
- **Same Hawaiian labor force (same number of workers as the HDF proposal)**
- **Same economic variables for milk purchase and processing**
- **Same potential product economic restrictions (MEADOW GOLD Processing and the Hawaii Milk Law)**
- **Similar weather conditions - empirical data could be used vs. abstract computer modeling.**
- **The Clover Leaf Dairy does not use the New Zealand model either, but an analysis of its application to a Clover Leaf operation would be beneficial to capture real economic input data.**

Including an existing and established Hawaiian dairy as an Optional Alternative is needed to provide a real comparison.

Finally, we are not opposed to "nutritious milk", local agriculture, or its benefits for families in Hawaii, but we cannot see how locally produced milk is more important than clean air and clean water for families in Kauai either. **There is an alternative that already exists for obtaining milk that is just as "nutritious" as local milk, is more abundant, will cost less, and is already on the shelves in all the Hawaiian Islands.**

Where is the alternative and how will we import clean fresh air, clean fresh water, and replenish Threatened and Endangered animal and sea life – particularly endangered reef structures, sea turtles, and whales - when they are severely damaged either by catastrophic events impacting Mahalepu Bay, Koloa, and Poipu or by a slow death from the pollutants (they are not nutrients when they enter waterways and ultimately the ocean) from a concentrated herd of 2,000 cows in a small area (less than one half the size of the Clover Leaf Dairy on the Big Island that only has 700 cows).

We would ask that thoughtful consideration be given to addressing these items. We would also ask that all consider the related health and economic issues of this unnecessary and ill-advised business venture.

Sincerely,
David and Linda Howell
1568 Pe'e Road, #212
Koloa, HI 96756

There are no State or Federal regulations for greenhouse gas emissions from farm operations or small businesses. However, livestock and agriculture as an industry contributes to greenhouse gas emissions, so HDF engaged a technical expert to model potential greenhouse gas (GHG) emissions based on the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories, as no dairy is currently in operation. The GHG emissions included methane and nitrous, converted to carbon dioxide equivalents (CO₂e) using the IPCC's AR3 global warming potential (GWP) that relates the GHG to CO₂. The IPCC Parameters for Oceanic dairy cattle in warm climates were selected as most applicable to the rotational-grazed dairy operation and conditions at HDF. See the EIS Sections 4.19 and 4.26, and Appendix I for complete information.

The emissions potential for GHG at HDF with the committed herd size of 699 mature dairy cows was estimated as 2,693 CO₂e metric tons (2,969 U.S. tons) per year. This is equivalent to the GHG generated by 170 4-person households. Potential GHG emissions from the contemplated future herd size of up to 2,000 mature dairy cows was estimated at 7,705 CO₂e metric tons (8,493 U.S. tons) which is equivalent to 485 4-person households. GHG estimates for household energy consumption includes home energy use, transportation and waste.

While the presence of cows may increase GHG, a long-term beneficial impact of the grazing fields is the sequestration of carbon as CO₂ captured by the process of photosynthesis by the grass. According to recent studies in the Soil Science Society of America Journal, converting formerly tilled cropland to grazed pasture can drive substantial accumulation of organic carbons in soil, which enhances soil quality, grass production, and has the potential to offset up to one-third the annual increase in CO₂ production of an area.

Operational practices to protect air quality by reducing nitrogen emissions will come from guidance in NRCS Conservation Practice Standard 590, Nutrient Management. Application of nutrients must be adjusted to minimize negative impacts of GHG release to the environment through adjustments to the source, timing, amounts, and placement of nutrients. Specific practices to be utilized at HDF include: slow release fertilizers; nutrient enhancement technologies; and stabilized nitrogen fertilizers.

Unlike a conventional feedlot, dairy facility that must collect and store all manure produces until future disposal, the majority of manure from a pastoral-grazing operation will be deposited directly on the pasture where it will break down and be incorporated into the soil within a one- to three-day period.

Without a dairy in operation, computer-generated modeling was used to determine the potential impact. Results for the committed herd size of 699 mature dairy cows using typical effluent irrigation conditions show that odors may be detectable by 50 percent of the sensitive population once per 200 hours, or just 44 hours per year, within one-quarter of a mile south of the dairy farm boundary. For wet periods, odor could extend approximately 2.151 feet (less than one-half of a mile) beyond the southern boundary. The closest public use areas beyond the odor extent south of HDF are a stable and golf course, both approximately 0.5 miles further south, and the closest residential and resort units are 1.3 miles beyond the possible odor extent (EIS Figure 4.19-1).

HDF has elected to restrict slurry application to periods when wind speeds are between 9 and 20 mph. With application at the most impactful location, paddocks south of the taro farm, the odor from slurry application barely crosses the southern boundary. Due to wind speeds within this range occurring on average 243 days of the year, the 99.5th percentile is reduced to potentially perceiving the odor just 29 hours per year.

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location – paddocks south of the taro farm – the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas. The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

HDF considered comments provided by Exponent to the odor results for the dairy contained in the Draft EIS: Air Emissions and Odor Evaluation Technical Report (Arcadis, May 2016). Exponent prepared its own odor emission report based on two alternate methods, using different assumptions on the timing of effluent irrigation and slurry application, as well as different sources for odor emission rates, and comparing odor results against a lower threshold than that used by Arcadis. Exponent argued the threshold “was not considered appropriate for a sensitive population such as hotel guests at a resort area.” The HDF air quality and odor technical expert, Arcadis, reviewed Exponent’s comments and odor report and recommended refining the odor model to depict both the “typical” irrigation effluent odor and the “wet condition” irrigation effluent odor. Additionally, Arcadis adapted the data used by Exponent (Jacobson et al., 2001) to account for differences in diet and for the Kikuyu thatch that will receive manure at HDF as opposed to a conventional compacted dirt feedlot which was used by Exponent.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest’s life cycle. Used in Hawai’i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaula’i and those species already in Māhā’ulepū Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

The ponds will not provide standing water and thus not create habitat suitable for mosquitoes to breed. Ponds will be managed as a two-step system. The settling pond accumulates wastewater solids at the bottom of the pond, with a stirrer pump operating within the pond two hours each day to circulate and break up and settle solids. Liquid effluent from the top of the settling pond will flow through a filtered pipe to the storage pond. Effluent from the storage pond is used to irrigate fields and thus will be constantly cycled through the pond. The berms surrounding the ponds will not be vegetated.

No netting will be used to cover effluent ponds; however, the ponds will be fenced to exclude cattle, and waterbirds that might choose to walk in the area. HDF has and will continue to coordinate with the U.S. Fish and Wildlife Service (USFWS) and the State Division of Forestry and Wildlife (DOPAW) on appropriate minimization and management actions to ensure dairy operations will not result in deleterious impacts to protected wildlife.

A draft Endangered Species Awareness and Protection Plan (ESAPP) is appended to the Final EIS, and will be completed through further discussion with the agencies. Fencing, predator control, monitoring within the pond areas, and protocols for response to the presence of nēnē or other protected species on site are further detailed in the ESAPP. Additional protocols for avian protection are outlined in EIS Section 4.10.

The drainageways and ditches installed in the late 1800s and early 1900s were developed to bring water to and through the site for sugarcane irrigation. HDF will protect water resources from runoff through both physical setbacks and effluent application limits.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainageway (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainageways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS.

Waioipili Ditch receives runoff from the larger 2,700-acre Mahā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waioipili Ditch will be improved by active management of the dairy site.

Section 4 of the EIS provides specific actions proposed to minimize potential impacts in the mitigation measures for each environmental resource category. Sections 4.20 and 4.26 address the potential cumulative effects of the proposed action. The plans for the dairy facilities and operations are subject to numerous County and State regulatory reviews, which include requirements to implement permit conditions to minimize potential impacts. Monitoring requirements will also provide accurate feedback on the effectiveness of measures, which will be refined through ongoing active management.

As a part of the EIS, alternatives were evaluated that could attain the objectives of the action's purpose and need, and were compared with environmental benefits, costs, and risks of each reasonable alternative against those of the proposed dairy project. Further discussion of alternatives can be found in EIS Section 6.

The Hawai'i Dairy Farms project emerged from a group of partners and affiliates, including Grove Farm, Finistere Ventures, Kamehameha Schools, Maui Land & Pineapple and Ulupono Initiative. The group conducted grass trials statewide to determine the best site for a rotational-grazing pasture based dairy. In addition to the grass trials, HDF coordinated with landowners of agriculturally-zoned lands in the State, as well as the Department of Agriculture, the Agribusiness Development Corporation, and the Trust for Public Land. The broader team identified, toured and evaluated six parcels of sufficient size: two on O'ahu; two on Hawai'i Island; and two on Kaua'i. Kaua'i was found to be the optimal location, as it met all the operational requirements for pasture-based dairy:

- Relatively flat, contiguous acres to move cows with minimal stress,
- Soils suitable to efficiently utilize applied nutrients for growth of forage,
- Adequate water for irrigation and operations,
- Suitable climate conditions for animals and grass growth,

- Agricultural-zoned land available for 20 years or more of sufficient acreage to support an economically viable dairy, preferably IAL, and
- Access to required operational support elements (trucking, pasteurization, work force, etc.).

In response to comments on the Draft EIS, Ulupono Initiative again searched for agriculturally-zoned land with potential long-term availability that may have become available in the past few years. An additional 1,300 acres of Grove Farm property on Kaua'i in the Mahā'ulepū area were recently vacated by Pioneer Seed Company. These fields are closer to resorts and residences, and do not provide further benefit to the project or community than the HDF site evaluated in this EIS. Alexander & Baldwin announced in January 2016 that Maui lands in sugarcane will be transitioned to diversified agriculture in the future. However, water rights and access for diversified agriculture must be settled through a forthcoming process, and water availability is currently unknown. Thus Ulupono Initiative, which conducted the research, is unaware of any new property meeting the requirements for a pasture-based dairy that has become available since its initial evaluation.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUJAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

note for public record

Andy Hubner <andyhubner@hotmail.com>

Mon 6/13/2016 9:08 AM

To: HDF <hdf@group70int.com>;

To whom it may concern:
I would like to encourage all of those involved to give final acceptance to Hawaii Dairy Farms (HDF). HDF has gone through a long and painstaking process to show that their dairy will be safe for the public. HDF has not only shown that they will not be detrimental to the Kauai environment but that they would have both a positive impact on the local environment while being a positive influence on the local economy. I have seen several large dairies go in around my community as a dairy veterinarian. Without exception, any negative feelings in the community quickly vanished once the dairy was up and running. Those in the community that voiced concern quickly realized that well run dairies produce little in the way of odor and do an excellent job protecting the environment. In addition, the cows at HDF will be in a pasture based system which will allow the cows access to a very natural environment. I truly believe that those in the community surrounding HDF should have no concerns about their environment or animal welfare. I have no doubt that HDF will soon become a welcome part of the community.

Andy Hubner DVM



January 3, 2017

Andy Hubner
andyhubner@hotmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Andy Hubner:

Thank you for your email of June 13, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Thank you for your supportive comments on the HDF proposed rotational-grazing dairy. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

We appreciate your review of the HDF EIS and its findings that soils will be improved by the additional organic matter, erosional run-off will be reduced through pasture management practices, and HDF monitoring of soil and water conditions will ensure the health and safety of the community and the environment for years to come.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASIO, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FACIP

Hiroshi Hida
AIA

From: Y.M. Ito
To: DOHLEO
Cc: Ballio, Y.M.L.
Subject: Re: Fwd: Talking Points-Hawaii Dairy Farm
Date: Sunday, July 24, 2016, 11:09:51 AM

Laura McIntyre
Environmental Planning Office
Hawai'i State Department of Health

Dear Ms McIntyre

Our family would like to voice our objection and **totally oppose** the Draft EIS for Hawaii Dairy Farm (backed by Ebay Founder Pierre Omidyar) proposing to build a Dairy Farm 1.4 miles from the Grand Hyatt Kauai and Poipu with 699 cows and up to 2000 cows in a less than 600 acres of pasture.

The Grand Hyatt Kauai and Poipu is our favorite place to stay in Hawaii. Our grandfather helped establish the Kauai Soto Zen Temple Zenshuji (Hanapepe) in 1903. Our whole family celebrated 111 years of existence as Americans at the Temple and stayed at the Grand Hyatt Kauai in 2014.

This Dairy Farm would completely ruin our visits to Poipu and our stays at the Grand Hyatt Kauai!

Very truly yours,

Y. Marvin Ito & Family
Culver City CA



January 3, 2017

Y. Marvin Ito
ymito@prodigy.net

Subject: Hawai'i Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Y. Marvin Ito:

Thank you for your email of July 24, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Results of technical studies and the findings of this EIS show no unmitigated nuisances that could affect property values as a result of dairy construction or operations. No noticeable odors, flies, noise, waste or water discharges will impact resort or residential areas. Odor is a nuisance impact that may reach beyond the dairy boundaries but will be limited to adjacent farm and ranch lands owned by Mahaulepu Farm, LLC, lessor of the dairy site, and would occur for limited and infrequent duration. As such, the dairy will not adversely affect residents, nearby recreational activities, guests in nearby resorts, or diminish property sales or property values in the area. EIS Section 4.15 addresses demographic and economic factors, with the complete report in Appendix J.

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuen
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIB

Craig Tokahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

Y. Marvin Ito
January 3, 2017
Page 2 of 2

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

FW: New message from hawaiiidairyfarms.com

HDF <hdf@group70int.com>

Mon 8/8/2016 1:19 PM

To: HDF <hdf@group70int.com>;

Began forwarded message:

From: Hawaii Dairy Farms Contact Form <info@hawaiiidairyfarms.com>

Date: August 6, 2016 at 8:12:29 PM HST

To: Hawaii Dairy Farms Contact Form <info@hawaiiidairyfarms.com>

Subject: New message from hawaiiidairyfarms.com

New message from hawaiiidairyfarms.com

Name: michael dick, kalaheo

Email: kaimalino2000@gmail.com

Message:

Abha,

I believe I have missed all regulatory public comment periods, but please direct this if possible towards any potential legal proceedings.

Michael James
6 Aug 2016
Waha Road, Kalaheo, Kauai

I live about 8 miles from Mahalepu and have been visiting it almost weekly since 1987. Throughout all that time I asked, and still wonder, "How does this landowner allow nearly unfettered access to this amazing coastline? From international tourists to native Hawaiian fishing families, all get accommodating, responsible access to this jewel.

I grew up in Southern California and have lived and visited family for years on Oahu. Many of my beautiful secret places over 40 years are cut off, paved over, or gated. Including coastal access. Luckily, the beaches in Hawaii will always be free. Access to the beach in Hawaii is a completely different matter and increasingly contentious. Mahalepu is different.

From the Grove Farm founders to the Case Family, nothing has changed. I have been told there is no legally recorded public easement to Mahalepu beach. Access over this private property is due only to the good graces of the landowner and the special place Kauai remains even now in 2016. Please realize how unique this arrangement is.

The landowner has accommodated the public for decades. I can't believe they come close to breaking even financially. Zipline and ATV's and bass fishing income can't possibly cover the taxes and insurance and security and maintenance (including a huge dam.) Imagine owning this property and all the financial headaches that come with it?

Local knowledge can see many county officials that would be happy to permit hotels and mansions on that coastline. Gotta feed the beast of government. It would take 20 years of local-style politics, but it would happen, if the landowners sell to a persistent and connected developer. Property values in Popu are at an all-time record high. Sell out and walk away. It happens every day in Hawaii to large parcels during a change in generations. Big money always wins.

I would love to see this property pass to an organization like the Nature Conservancy, but that proposition is not on the table. What is on the table is a dairy. On the edge of the property. Cows. Making milk. I like milk.

The complaining organizations against allowing this dairy to be built have never covered the property taxes on Mahalepu or fixed a rusty gate or repaired the roads or kicked dirt bikers off the beach.

I say let them build it and try it out. Use some common sense; what can it possibly harm to give it a chance? Let the farmer and the landowner try and create some cash flow. Maybe with a ton of work they will do better than break even.

Hawaii needs more Ag. We do not want to become like the plowed-over orange groves of California or former Hawaii sugar plantations now growing only houses. Regulate, inspect, and enforce.

But permit.

Mahalo for your consideration.

Michael James
Wāha Road, Kalaheo
kaimalino2000@gmail.com



PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Michael James
kaimalino2000@gmail.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Michael James:

Thank you for your email of August 6, 2016 regarding the Hawaii Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

Thank you for your supportive comments on the HDF proposed rotational-grazing dairy. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

We appreciate your review of the HDF EIS and its findings that soils will be improved by the additional organic matter, erosional run-off will be reduced through pasture management practices, and HDF monitoring of soil and water conditions will ensure the health and safety of the community and the environment for years to come.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawaii Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

DEIS for Dairy

Kapua Janai <kapujanai@gmail.com>

Mon 7/25/2016 8:31 AM

To: HDF <hdf@group70int.com>;

Oloha,

I am a Kauai resident, and am concerned about the proposed dairy planned for the Mahaulepu valley, and as I work on the South shore I am familiar with the area in question. I would like to make some comments I feel should be considered regarding the Environmental Impact Statement. I feel that some of the probable impacts have not been sufficiently considered, especially those which are long term.

First, I'd like to speak of the impact to Kauai residents, especially economic. According to the Master Plans in effect on Kauai, the Koloa-Popu area is designated as the primary tourist accommodation area. It has been developed as such, with major hotels (Hyatt, Sheraton, Marriott, Koa Kea.) time-shares, and condo rentals. The tourists who locate themselves in Popu then travel island wide for their various activities, shopping, and visits to restaurants. If the ambience and environment of our primary tourist accommodation area becomes negatively impacted enough to cause the tourists to stop coming to Kauai, nearly the entire island will suffer. Not only places of accommodation, but every helicopter tour, adventure tour, boat excursion, restaurant, car rental, and so on, depend on tourists for their income. Most businesses not directly dealing with tourists, depend on the people employed in the tourist trade.

This impact assessment needs to look closely at how our tourism could be negatively affected by the dairy, and consider whether it is worth the risk of such an economic peril to the island, for the sake of one potential business and its relatively few employees, compared to the thousands employed by the tourist presence.

The dairy could negatively affect tourism in several ways. The proposed dairy, which is estimated to produce 85,278 pounds of manure and urine per day, projected to increase to 244,000 pounds per day, cannot help but produce an odor problem. Air does not stand still, and with our nearly constant trade winds, the odor could spread throughout the entire Popu-Koloa area, coming from the spraying of the waste onto the pastures, from the holding ponds, and from discharges into the Waipali stream/ditch. In attempting to estimate the distance that odor will travel, one can only get a true picture when considering the scale of the operation. For an example, if you were to use a 5 gallon bucket of manure to see how far the odor could be detected, the number of odor producing molecules which evaporated into the air would be relatively small, and quickly dispersed in the atmosphere to the point of being undetected. By comparison, with a 100 gallon pond of manure, the number of odor molecules entering the air would be much larger, and there would be a greater chance of some of them traveling the air currents for a longer distance. In this proposal we are considering effluent ponds of manure and urine estimated at 13,225 gallons per day, up to a capacity of over 2 million gallons. I wonder, by comparison, how large the sample was by which they estimated the odor would not be detected past one mile. This needs to be re-evaluated with the true scale taken into consideration. You can give something a neutral sounding name, such as a "holding pond", but that does not change the fact that it is in essence an open cesspool of bovine waste. And when the waste is sprayed onto the fields as fertilizer, how much will be directly blown away on the breeze to be carried downwind? We've all seen fields being sprayed with one thing or another, usually with great plumes of the substance being carried away without even touching the ground.

In addition, this manure and urine may be at times carried into the ocean. Oceans also, as well as air, do not sit still. How long before the beaches at Mahaulepu and Popu and on down the shore are contaminated and unfit for swimming? What will be the effects of a tropical storm in this area, and how far will the pollution be spread? Flies also do not stay in one place. Flies breeding at the fertile manure fields of the dairy could make the entire Koloa-Popu area uncomfortable and potentially unhealthy. Flies are active all year, where their proposed dung-beetle solution is seasonal.

So look at the long range possibility...what tourist will want to come to place with the stench of a dairy, with an un-swimmable beach, to be bitten by flies? Word among the tourist population spreads very rapidly. Once Kauai develops a "bad reputation" among them, it would be very difficult to reverse. Sometimes it is necessary to take preventive action rather than wait until a problem has developed and become serious. Situations such as this, with both Environmental and Economic risks, need to find alternatives before they cause problems. In this situation an alternative location should be sought. A dairy does not properly fit into our Primary Tourist Accommodation area, and should not be located so near to it. If for example, Hawaii Dairy Farms were to locate on the Big Island, there would be plenty of room for them to be far from the ocean and far from tourist areas, and there would be far less risk of causing serious consequences.

The other major issue aside from the economic effect, is the impact on the environment itself. The Air, the Streams, the Land, and the Ocean deserve the protection intended to be given to them by the requirement of an EIS report. The Hawaiians have long understood the working of the watershed concept, and how large areas from Mountain to Sea are interconnected and vital to the wellbeing of the whole. Can it be shown that no nutrient or effluent run-off will occur in this watershed? If the answer is not clear and certain that this will not occur, then this project should not be allowed. Prevention is better than regret. Such problems are not easily fixed, and expensive to be attempted. Has HDF guaranteed funds to remediate all possible impacts, with a neutral body in place to determine what those impacts are?

When the EIS is being re-worked, it would also be advisable that they make use of previous experience on Kauai to help judge potential problems. We once had a dairy on the East Side of Kauai (Anahola), though on a much smaller scale. The property across the highway from the dairy was purchased, and a short time later the new owner claimed the odor from the dairy was ruining the value of his property. The dairy was forced to close. Now, in that case, the dairy had been there first, so that decision may not have been the right one. But it does show that dairy odor can affect the surrounding area. In our Koloa-Popu case, we have the opposite situation; the hotels, condos, restaurants, tourists, were here first. We have the chance to prevent the problem before it happens.

I am asking you to take the appropriate actions to realistically evaluate what we are facing here, and prevent a situation we will greatly regret.

Mahalo,

Kapua Janai

P.O. Box 907

Waimea, HI, 96796

kapua@bva.net

808-4335-2755

meteorological data irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

Fly populations at HDF will be minimized through a process known as Integrated Pest Management (IPM). Essentially, IPM disrupts reproduction with appropriate means at key points in the pest's life cycle. Used in Hawai'i for decades, a number of invertebrates and a bird (the cattle egret) were introduced between 1898 and 1950 to reduce livestock-related insects. IPM utilizes knowledge of the ancient food web among species. An especially important insect to minimize fly breeding habitat in manure is the dung beetle, which can bury manure in one to three days and thereby incorporate organic matter into the soil. Disrupting and removing the dung interrupts the egg to fly lifecycle, which requires from 7 to 20 days depending on the type of fly. Populations of dung beetles found on Kaua'i and those species already in Māhā ūlepu Valley will expand with the growing manure food source, thus increasing and speeding breakdown of manure while preventing fly larvae from hatching. Fly minimization measures are further described in EIS Section 4.11.

The development and long-term operation of HDF will be in full compliance with its agricultural State Land Use District designation, ALISH classifications, and County zoning. The dairy farm will embody the intent of the IAL designation per the Hawai'i State Constitution, by using these protected lands for the intended purpose of diversified agriculture, food production and agricultural self-sufficiency. HDF's development of a dairy also supports the "secondary intent" for lands in the Agriculture land designation, to provide an opportunity for Kaua'i citizens to reside in an agricultural community.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

"No" to farm
Phaka (w/ farm)
Kauai

I live in Tamarua my family.
lives in Kauai, I am writing in
regards to Environmental Impact
Statement (EIS) Project # 21206-04
Please record my public comment
as "NO".

Marcelle Janett

2925 Hwy 67A

Camden, TN 38320



Feed yield on clay portions of HDF

Rorajohn@aol.com

Mon 7/25/2016 7:51 AM

To: HDF <hdf@group70int.com>;

Cc: Laura McIntyre@doh.hawaii.gov <laura.mcintyre@doh.hawaii.gov>; jim@hawaiidairyfarms.com <jim@hawaiidairyfarms.com>;

January 3, 2017
Nancee Jarrett
2925 Hwy 65A
Camden, Tennessee 38320

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Maha'ulepu, Koloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Nancee Jarrett:

Thank you for your letter of July 12, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai'i's declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai'i's dairy industry.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. A copy of the Final EIS is included on a compact disc with this letter. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Saaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Rucicola
AICP, LEED AP

James I. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

According to the HDF article in the TGI by Ann Hennessey, comments can be submitted through today. Please add to my previously submitted response. In volume 1 Table 4-3-1 Soils of HDF - one finds Kaena Clay Kava B 28.66 % Kaena Clay Kav C 4.09% Kailhi Clay Ke 31.68% and Luaiualei Clay Lub 13.69. What was the proven grass yield on each of these clay area totalling approx. 76 % of the total soils of the HDF projected Dairy? Please be specific re. area, yield, when planted, duration of growing cycle (how long before cutting etc.)

Ronald John
2547 Oak Creekj Circle
Sandy Ut.
84093

Deceptive and Incomplete statements One question

Rorajohn@aol.com

Mon 7/25/2016 9:37 AM

To: HDF <hdf@group70int.com>;

Cc: Laura McIntyre@doh.hawaii.gov <laura.mcintyre@doh.hawaii.gov>; Jim@hawaiidairyfarms.com <jim@hawaiidairyfarms.com>;

I am embarrassed to submit another add on to those already sent, but its hard to read the DEIS without coming on another tricky, incomplete, leave it up to the reader to interpret indication. Quote "with the assumption that rainfall greater than 0.80 inches is either lost to deep percolation into the soil or runoff." The multiple proposals submitted are full of comments re rapid runoff, flooding etc Legend tells of a swamp or bog on the dairy site where, with a steady sustained 3 day rain event, dairy cows will need to be pulled from.

Either the NRCS report is wrong or regardless of the newly found, converted liability to asset by HDF/Group 70 of slower transmission into/through the clay soil, which composes 76 % of the farm, clay soil of a Ksat level of 0 to 0.20 still means rapid runoff from the top of the soil. So lets be sensible by academic/scientific standards. **If a 1 inch rainfall occurs at the dairy farm over 5 hours how much of the 27,154 gallon per acre rainfall goes to "deep percolation" and how many gallons to runoff?**

The use of selected rain fall data by HDF/Group 70 is glaring. Several multiple days (2 days or more) of rainfall exceeding 3 inches were ignored and run off from the clay soil (irregardless of whatever bush you put in front of it) would have made it to the ditches and on to the ocean. That manure laced number of gallons would be over 15 million gallon of effluent sweeping over the reef, beaches and into the ocean

.Please enough of the BS (Blue sky).

Effluent application rate .39 on land with a 0 to 0.20 absorption rate

Rorajohn@aol.com

Mon 7/25/2016 1:01 PM

To: HDF <hdf@group70int.com>; Laura McIntyre@doh.hawaii.gov <laura.mcintyre@doh.hawaii.gov>; Jim@hawaiidairyfarms.com <jim@hawaiidairyfarms.com>;

Please add to my DEIS question submission

ON pp 12 (Hydrologic Assessment"Vol.2) is the mention of" Runoff from there farm area within the project boundaries itself generally sheet flows or flows in shallow concentration towards and into these ditches". Do you agree that it is also known as overland flow or the flow of water that occurs when excess stormwater, meltwater, or other sources flows over the earths surface. This might occur because soil is saturated to full capacity, or because rain arrives more quickly than soil can absorb it. If you agree; how does one use a spray rate for effluent at a .39 rate on land with a 0 to 0.20 absorption rate and not have sheet flow. If you disagree; why and please answer the question?

Ronald John

2547 Oak Creek circle

Sandy Ut.

84093

d Group 70 HDF DEIS Response Fails Requirements

I received 17 pages of canned, generalized, one size fits all responses. The last paragraph covering the hoary bat. Great filler, but I did not ask about the hoary bat.

It is difficult to put the concerns and questions I submitted alongside the promises and citing's of Group 70s DEIS response. From the 1st question, "Why would "Group 70 be the one to grade its own paper" when total objectivity is the benchmark, to a 699 dairy cow initial stocking instead of 700 dairy cow number, so a different CAFO standard is required, the glaring absurdity begs relief and fails to meet the standard of a DEIS response or any other standard of statistical proof,

It is a basic rule of any proposal/ study, be it master's thesis or doctoral dissertation to studies in medicine and yes agronomy./agriculture, that when any significant variable is falsely presented or openly changed: if this variable affects the data presented by itself and of other conditions, then the study is to begin again and go through the entire scope of permitting, approving, licensing authority(Quote) See letter Dec 17 2013 Peter Tausend (KSWCD) to HDF Quote: "If subsequent to the issuance of this approved conservation plan, such information and data proves false, incomplete, or inaccurate this approval may be modified, suspended, or revoked, in whole or in part. Before you do anything to your property that is not included in your plan it is to your advantage to notify us." This message has been ignored/violated by HDF and legal testimony by their farm manager clearly verifies this continual violation. From first telling the Kauai Soil and Water Conservation District "the soil is free draining " to the new touting of the clay based Type D rated soil one realizes that never before in a life time of research has he received or seen a misdirected, sophomoric and misrepresenting effort as this one. Beyond that, the HDF method of make it up as you go is a violation of basic expectations of research and results that can be believed. It has and should nullify all the input of HDF. Justifiably, credibility the norm, HDFs explanations simply can't be believed.

The following questions, among many others were not answered. References to "conversion of formerly tilled crop land" and nitrate and nitrate leaching" notwithstanding.

1. How does HDF reconcile the separate and different irrigation concept for Block F and not the other 300 acres connecting area composed of the same soil type (poorly draining)? Shouldn't the soil type define the irrigation method? They are group D soils (see: Department of Agriculture Natural Resources Conservation Service Part 630 Hydrology National Engineering Handbook Chapter 7 Hydrologic Soil Groups (Quote)- Group D—"Soils in this group have high runoff potential." NO direct response
2. With soil type differences, different irrigation methods and nutrient limitations, has HDF successfully irrigated the kikuyu, and does proof of such successful trails exist? What trail data, date and field location demonstrates the 18-day recovery rate claimed and used to support the rotation of paddock at an 18-day level? What data of tests ran on different

3. soil types at Mahaulepu supports their conclusion? Does the kikuyu yield, if any, match their indicated nutrient needs . What is the nutrient differences in Kikuyu and a mixture if Kikuyu-Guinea grass (page2-2 HDF EIS PN) NO specific data shared re any of the above Please keep in mind promises by HDF are not necessarily believable. Facts are only when verified, and No full response yet has been given.

- 4.
5. The denial of odor drift conflicts data from all over the world. Locally, see class 5 and 6 winds (MPH) found by KIUC at Mahaulepu in their wind turbine study of 2005 shown below. Keep in mind the Mahaulepu elevation is 160 ft and the wind blows to the southwest moving downhill to 60 ft as it leaves the property. The below cited winds are average--some months it is much higher. It is misrepresented as 10 mph by HDF and without question will add to odor drift distance NO response based on real weather data has yet been given.

Table 1-1 Classes of wind power density at 10 m and 50 m^(a).

Wind Power Class ^a	10 m (33 ft)		50 m (164 ft)	
	Wind Power Density (W/m ²)	Speed ^(b) (mph)	Wind Power Density (W/m ²)	Speed ^(b) (mph)
1	0	0	0	0
2	100	4.4 (9.8)	200	5.6 (12.5)
3	150	5.1 (11.5)	300	6.4 (14.3)
4	200	5.6 (12.5)	400	7.0 (15.7)
	250	6.0 (13.4)	500	7.5 (16.8)

5	300	6.4 (14.3)	600	8.0 (17.9)
6	400	7.0 (15.7)	800	8.8 (19.7)
7	1000	9.4 (21.1)		

south to Mahaulepu Road, and, a mile (1760 yards) to the northern tip and east edge. Studies indicate the dairy cow pace with full udder (approx. 60 - 80 pounds) is 1000 yards per hour in normal walking conditions. If a dairy cow is more than 900 yards from the dairy it will not work as presented by HDF nor will all cows be milked in a twice every 24 hour rotation. NO response given.

6. If one analyzes the Mahaulepu rain gauge data he will find 11 rain events that were 6 inches or more occurring in the last 25 years. If he reviews successive day rain events he will find 6 that were over 8 inches and which happened in the last 14 years. If evaluated by approved, objective evaluation standards. You would find that in every one of these 17 rain events (when applying only three known facts- soil type of a poorly draining 350 acre total and K.sat level) of an average rating of the highest and lowest level (0.10 per hour) it would flood beyond the property lines. What evidence contradicts those findings? If, as it appears, you now agree that you will have an off-site flow of effluent, how much in gallons will get to the beach, caves, ocean, ocean reef? Response must be made.

4. Quote (DEIS Response to Ronald John pp13 of 17) "Health of the herd is of primary importance as the success of a dairy relies on cow effectively producing quality milk. All cows will be treated with a high standard of care." This promise in the DEIS ends with the writing.

Few animals are comfortable when eating or laying in close proximity of fresh feces. This condition would be especially true if the dairy environment is configured as HDF has designed it. When the tightly grouped mob of 100 to 300 dairy cows on one small 3-4 acre pod begins to download tons of fresh manure at the same time, and in the same area where they are grazing, when it is unseasonably hot for days, the irrigated effluent is ripe, and flies are at them from all angles, what is the remedy? Why is HDF not building a shelter for the dairy cows? If for no other reason, income studies point out the significant added income when you have a "satisfied" dairy cow. Other groups including some civilized countries see this as humane. Be it your heart or your wallet she needs shelter for her well-being. Why is it not provided? In truth with fixed shelters they couldn't run their pivot system as planned, so their answer appears to be "just ignored the dairy cows basic need." NO response given

5. The outside perimeter distance of the paddock to the milking parlors appears to range between 200 yards on its west side just beyond the calving sheds to over a mile and a half

7. On page 27 of the HDF proposal is a description of the 236 watering trough HDF will use Quote: "high enough for the animal to reach over and in, but will discourage the animal from stepping in." A cow at times, seems to become confused as to knowing which end they drink with. This has been observed as a good reason to not drink downstream from the herd. Can this misinterpretation of which end should be next to the water trough happen in regards to the HDF water troughs? Indicated also is "refill the trough as the water is consumed." What happens to the water in the trough when the paddock is emptied and the water trough is full? Does it then automatically drain (please explain that mechanism) or sit full and stagnate for the duration of the rotation cycle? Can it be filled manually if the main power is lost? Even the best water trough accumulates dust and other particles in it. Over multiple hot days it's not unusual to see a buildup of undesired, health threatening elements. Who cleans the trough and how often? What setbacks have been determined to make certain overhead spray of effluent does not fall or be blown into the trough? It is presumed the wheel tracks for the pivot system are set and not close or encumbered by the fixed in place troughs? Explain. Multiple questions were asked. NO response was given.

8. There are many concerns re: The Taro Farm. As the Taro farm abuts Block F described as heavy, flood frequently” “characteristically poor drainage, this location raises not just interest and suspicion but justifiable questions. A written description re: the interaction, terms, and considerations made between Grove Farm, the Taro Farm and HDF needs to be examined and explained. That should be clarified including providing barriers high enough to stem all overrun either in or out of the Taro Farm. No indication of protection or concern for the Taro Farm is written, and runoff, over spray, or intermingling of its water with effluent mixed water is not considered. In that regard there should be provisions outlined in the HDF proposal for involving or protecting the Taro Farm from any type disturbance or incursion. Why not? What should be done to protect them? NO response given.

9. There is a high degree of confusion regarding whether the nutrient data, waste management data etc. is for the ultimate build out of 2000 dairy cows. Section 11-200-7, HAR, states: "A group of actions proposed by an agency or an applicant shall be treated as a single action when: The component actions are phases or increments of a larger total undertaking. A proposed action must be described in its entirety and cannot be broken up into component parts, which if each is taken separately, may have minimal impact on the environment. Segmenting a project in this incremental way to avoid the preparation of an environmental impact statement is forbidden". All elements of the present HDF planned developed are not on the basis of full build out parameters? NO response made.

10. No mention of “dry dairy cow” or “sick dairy cow” is given. Where or they pastured? Are they moved from paddock to paddock? Are they separated and how? Other than the one line on page 91 (last proposal) “Animal Mortality Management Plan”, no mention of veterinary space location or cleanup of such area is given.NO response was given.

11. On page 30 a reference is made to drip tubing or tape. What expert and why, indicated using drip tape as a method for an area where 300 cattle in mass will be walking over it, and could easily damage or a hoof penetrated it? NO response given

12. On page 54 one reads “gun type application system to area outside the liquid effluent application.” Those areas are generally on the fringe areas of the property. Some paddocks; almost the closest property to Mauthalpu Rd, will be covered by this method. A highly

questionable if not wrong solution. It literally cuts across corners and should not be allowed. (Water ways are in its path.) A gun type irrigation system spraying effluent will with wind drift create a combination of pollution either by odor, mist or both.

This concern received NO response.

13. HDF is a CAFO.As designated by 40 C F R paragraph 412.15 The Clean Water Act 33 U S C in part would assert that the dumping of sludge at least would be in violation of this Act if not by its “storage use” i.e. “not needed” or “an addition beyond usage” but for the certainty of comingling polluted water with that of the Taro Farm. The Taro Farm located at the very bottom of the HDF farm site could serve as a convenient dumping area for effluent over fill or catch basin for surface water, and then the subsequent drainage to the Taro farm ditch system would run to the ocean (one source removed) as part of their operation. NO response.

Grove Farm has shown little hesitancy in removing tenants from areas need by a bigger tenant. The small approximate 15 acre Taro Farm as located stands out as abutting and surrounded on three sides by HDF, property. It raises not just interest and suspicion but justifiable questions. A written description re: What are the interactive, terms, and considerations made between Grove Farm, the Taro Farm and HDF? In that regard there should be provisions outlined in the HDF proposal for involving or protecting the Taro Farm from any type interaction or incursion. That should be clarified including barriers high enough to stem all overrun either in or out of the Taro Farm. Has this been done? What are these terms? No response.

14. Waste Utilization-Field Office Technical Guide NRCS crop nutrient use or soil Section IV (Quote) “Where the residues of energy production are to be land-applied for conditioning, the criteria listed above shall apply.

Considerations: The effect of Waste Utilization on the water budget should be considered, particularly where a shallow ground water table is present or in areas prone to runoff. Limit waste application to the volume of liquid that can be stored in the root zone. Agricultural wastes contain pathogens and other disease-causing organisms. Wastes should be utilized in a manner that minimizes their disease potential. Priority areas for land application of wastes should be on gentle slopes located as far as possible from waterways. When wastes are applied on more sloping land or land adjacent to waterways, other conservation practices should be installed to reduce the potential for offsite transport of waste. It is preferable to apply wastes on pastures and hay land soon after cutting or grazing before re-growth has occurred .Minimize environmental

impact of land applied waste by limiting the quantity of water applied to the rates determined using the practice standard Nutrient Management(590) for all waste utilization. Consider the net effect of waste utilization non greenhouse gas emissions and carbon sequestration. "

It is difficult to examine the HDF proposal and find really based concepts that effectively meet NCRS criteria. Some of the NCRS criteria have been simply ignored in the HDF proposal, and that is a significant deficit in this proposal and a serious concern. By field elevation data obtained from Goggle Earth one finds varied and significant number of different field level elevations within the overall 100 ft elevation decrease extending from the northern most end of the HDF property to Mahaulepu Road. Measuring across the fields- West edge to East edge- multiple undulations are noted and as varied as 60 feet. These elevation are readily verifiable by Google Earth. Some are skewed outside the stated parameters, others are ignored. The frequency of ponding in the clay conditions of Mahaulepu is certain, serious and they must be recognized by appropriate planning. Such undulations create catch basins and these effluent/water ponds stagnate within a short time. NO response.

15. We are aware and NRCS had clarified in writing that they did not, as claimed by HDF in public presentations, PR press releases, written communication and in multiple time in each manner, "Approve" the proposal. These issues must be resolved in a professional, detailed, thorough and reality based manner. This a serious misrepresentation. Public examination, penalty and correction for such a misrepresentation is essential and should be required. NO response was given.

16. On page 12 and 13 last proposal HDF identifies the predominant 3 soil types on the HDF property as "Poorly Drained. " 8 soil types, though significantly smaller in acreage size, are identified as "Well Drained" One soil listed as rRK is listed as "Well Drained although shown as having a 0. 00 to 0.06 Ksat capacity and identified as 'Rock Land.'" On page 64 these soil types are bundled into 23 CMUs (Conservation Management Units). These CMUs are used for nutrient planning purpose yet many CMUs have within them different Ksat levels and varied soil types. How does HDFs nutrient plan successfully accommodate these differences? NO response.

17. What are the weight and size dimensions of the pivot system wheel sets, their width and weight per unit? How many wheel systems per pivot and what is the total weight load on an individual wheel section when in full operation. What is the distance to the outer gun systems and what is the tracking speed of the outer pivot? Wheel rutting (multiple width and depth in inches) is common to all pivot systems of this nature. It is more so when one is as large and heavy as that which HDF is using. What are the single wheel width and weight dimensions? Distinctive tracking/rutting paths will occur. When either designed as a hard surface or becomes one: how will rutting be prevented and runoff not occur from these tracks? As these tracks become fixed, permanent pathways they will quickly become significant, visual and distinct depressions in the soil. Aerial photos of the area presently being irrigated already show these defined tracks. They will become multiple miles of circular conduits where any irrigation water or effluent can be carried away. These certain depressions will either hold or runoff to other areas. If they are hard surfaced, they become pathways, such as raceways etc. They, by known function, become" clear "point discharge" areas. If untended they will/ can become depressions, holding standing water in stagnating pools. If accessible, animals of all types drink from them. As much or more than roadways, raceways etc. these certain channels must be considered and runoff to them controlled. How is that accomplished? There is considerable fluctuation of elevations determined by Google Earth Dec 2013 which not only impedes a pivot system but can as well stall or shut one down. What is the shutdown speed? Why did it not work in the 2014 wind created tip over? How many wheel sections are in Pivot 1 and Pivot 2? What is the total mileage length of the pivot tracks? No response.

18. No support data nor specifics explain the concern for VRI error rates and the certain effluent spray into the streams of Mahaulepu. No response.

19. No data supports (promises simply don't count) nor gives any assurance that the lighting needed for dairy cows to walk safely to and from milking area, in the dark of night, won't interrupt the safety of the Shearwater bird. (See TGI Jan 29 2015 "cost to Kauai for lighting correctly and taking in the full needs of the Shearwater at one million nine hundred thousand dollars." Is one really to believe that a crippled or dead Shearwater will be reported by the HDF staff? What cross validation can the public have? Promises- but NO response explains how.

20. HDF must demonstrate how they will comply, not just “they will comply” to irrigation standards. Under NRCS FOTG Sec. 4 page 6 thro 9 HDF must specifically relate each of the requirements to their field irrigation concept, and to the hardware used for such irrigation. HDF must demonstrate an understanding of and compliance to all regulations. That compliance must be written, and open for review. NO response.

21. HDF admits that Mahaulepu now has a ditch network which drains into the Pacific ocean at Mahaulepu Beach. This drainage will be manure/effluent which has one catch area the Waiopili Stream running 8 tenths of a mile into the ocean. This is not allowed in civilized countries, and has literally destroyed much of New Zealand’s beaches and ocean reefs. This should not happen in Kauai. Quote “Spread across the pastures on the valley floor are numerous straight-agricultural ditches that serve the purpose of draining runoff from various pasture areas.” Drain to where requires an explanation. . On page 5 of their last known proposal, they speak of “water wells, ditches, drainage ways and culverts” On page 49 they speak of “existing drainage way”. As previously noted, on page 73 is a mention of “drainage system”. As the ocean is the answer, shame on any money addicted group who would consider it. Keep in mind HDF is is the same group who claim they studied 7 years (5 years to the first proposal and 2 since) to have a zero discharge dairy. On page 15 of volume2. “These amounts are 330 and 840 times greater than the estimates of nitrogen and phosphorus currently carried in surface and groundwater moving through the HDF site that ultimately discharges into the marine environment: On page 16 is the following “**These episodic runoff producing rainfall events will be the primary mode of conveyance of nitrogen and phosphorus into drainways and ultimately into the marine environment**.” “average of about ten days” This average is vastly understated and runoff will occur multiple times more than that estimate. Response is an understatement and highly inaccurate. No reasonable /acceptable response given.

22. Lacking is a clear explanation of what reality based process successfully deals with the manure left on the pathways (multiple tons) if the dairy cows are in one of the far edge pods? 300 fartless, crapless, (100 lbs per day) imaginary. HDF dairy cows will leave 1.8 ton of manure (cattle don’t like to step in it) on 84000 sq feet of raceway if they walk to the pod from the milking area and back up and then back to the pod later (twice to the dairy milking area per 24 hours.) That’s on a hard surface, none saturation raceway/walkway. Does it build up each time

these paths are used? That walking time is at least 3 hours (one 8th of the stay per 24 hours.)To lessen the walking distance HDF will say we will move them to short distance pods but how does that work especially with 2 sprinkler systems moving their full rotation every 40 hours and a feed growth rotation of 18 days? NO response.

23. Quote page 3-26 DEIS: “with the assumption that rainfall greater than 0.80 is either lost to deep percolation into the soil or run off.” Given a rain event of 2 inches over 3 days; an explanation of how foliage withholds effluent from getting to the ditches and on to the ocean is necessary. How does it withhold, by what method; and how much (percentage) of the runoff does this foliage method prevent? If foliage has that ability, it should be raised at Mahaulepu and sold rather than milk. WOW” What a vast market exists for this new, magical, water/effluent, foliage barrier. Call it a ditch or a stream the Waiopili and its contents ends at the beach. It will be a major pollution artery on the second day of a heavy rain event. Nowhere in all the cover of effluent run off or containment is that direct admission. It will not be an act of God but a selfish and foolish caprice by uncaring individuals with little common sense. Does HDF admit that their run off will get to the beach? NO Response was given.

24. The dairy does not meet the standards of Sec 81.5.Kauai county Code 1987as amended.(Quote) “In judging compatibility the following shall be considered: “volume of goods handled, and other factors such as , but not limited to vibration, noise level, smoke, odor or dust produced” In light of the misrepresentation of Mahaulepu wind by the EIS how does the new authentic wind determined by the 2005 KIUC wind turbine data affect the odor variable? Keep in mind no one of scientific ability builds or cites findings on an “average” of a factor such as wind. It is the range and frequency of (high and low- event over time, etc) not “average.” NO response to this concern.

25. HDF now mentions a generator. What is the peak power demand of full night usage by a fully lit dairy including pivot system? What is the power outage record of the utility supplying power? How many outage times would it have exceeded HDFs back up generator ability/ output? What then?

26. One just hears that the Cornell Model(CPM) is now to be used at Mahaulepu? This not a simple model. So as an example of this new fidelity, HDF’s dairy manager and his helpers, herders etc. of 10 to 15 workers, split over three 8 hour shifts, are now going to model / take in

consideration the distance walked by the cow each day and adjust his nutrient balance accordingly? The believability of this remarkable feat goes alongside the 699 AU (hypothetical animal unit) which of course changes when 3 to 5 calves (one more AU) are on site. The carrying capacity claim is at best conjecture based on a hypothetical soil and nutrient conditions that is not/cannot be supported by the majority of the land mass of Mahaulepua. Who is responsible for compliance to the "Cornell" model?

27. The question underneath the failure of three proposals presented was left unanswered. The presentation by Group 70 at Koloa just prior to the EIS responses was hardly a display of expertise of any level and a foreboding of what was to follow. The question left unanswered is on the last page of my EIS submission. It is as follows. "In the area of professional preparation has Group 70 developed or evaluated a waste management plan of a dairy similar to the one proposed by HDF? When? Where? What other dairies have they designed waste management plans for?" No Response

28. Mention is made of the Farias ranch as a place for calves to be sent. With that increase in AUs what standards must they meet. Farias uses pod grazing. Are streams running through their property? What do they do with excess manure? What permits govern their operations? Would they be considered a feed lot operation? As this is a contract agreement with HDF, must HDF assure these conditions are met by those providing long term services contracts?

29. Mention is now made (pp 1-8) of a "secondary containment area." This is a new addition and by function is a third effluent pond. What is its size and how is it constructed? How much does it hold and how long will it hold before continual ground seepage begins? How is it emptied? Clear, concise Response must be given

30. NO response was given to multiple question/concerns re: gun irrigation, its error rate, pattern distortion etc.

31. NO response was given to the questions concerning application rate of effluent in excess of the intake capacity of the soil nor slope run off.

32. Other than denial and misrepresentation, no response was made to the actual Mahaulepua rain gauge readings of 11 in excess of 6 inches occurring in the last 25 years and 6 that were over 8 inches in the last 14 years. The data presented by F/Group 70 as presented is clearly wrong. The true data doesn't just verify run off they spell/ out FLOOD. Why is this actual data not considered?

33. No response given re: drip tubing or tape usage.

34. No response was given re: HDF remark pp 51 1st proposal " very regular and very large amounts of rain" When did that weather change?.

35. If Hurricanes over Kauai occur as they have five times in the last 66 years (HIKI-Nina, Dot, Iwa, Iniki) why was the following question ignored " If anything was left standing including dairy cows these Hurricanes would have filled the ponds and quickly brought them to overflowing, runoff stage." What data supports otherwise? NO response.

36. HDF used the rainfall figure of 10.4 inches. That figure when applied to a 572 acre, tilted toward, the ocean, body of land with saturation problems and now admitted clean multiple ditches becomes 168 million gallons of runoff to the ocean. The question was ask "What information/data if any invalidates this high and statistically certain risk and which HDF data confirms?" No response was given.

37. Questions were ask re H DFs sustainability level, etc. (pp. 37 Ron John submittal) NO response was given.

38. The dairy cows will continually cross over ditches/streams. They will drop manure and urine in these water outlets. What if any containment is planned (see pp.42 RJ submittal) NO response.

39. The proposed animal cemetery is woefully undersized (4400 sq. ft- the size of a medium home site). Dairy literature points to a mortality rate as high as 5% yearly (100 cows a year if 2000 is fully stocked). Setting aside the HDF PR persons quote: "They live long happy lives," keep in mind that dairy cows by law can no longer can be sold for slaughter or salvage at "lactation termination." NO response was made to multiple questions regarding this siting mistake

40' "Within this setback no effluent will be applied and no animal will deposit manure. (Quote pp5 DEIS response to Ronald John.) What a sad misleading comment. That area nearest the Koloa wells is a large continual sludge dumping area of 30-4e acres. So Koloa neighbor should be comforted that instead of 600 feet from the well site, HDF now extends their separation by 400 ft inside the lower south west corner next to Mahaulepu Rd. Its telling that this certain odor producing, sludge dumping area is the closest plot of the entire farm to residential homes instead of at the back of the farm. Comment required

So what do we have? No one in the world has seen a pasture based dairy of this number (2000) of dairy cows on this small size acreage. Nowhere in the world has an industrial sized dairy been located this close (1.8 miles) to the biggest contributor of jobs and tax revenue in the entire area of Kauai. Nowhere in the world is one located in an area that has the environmental, economic, ecological importance and spectacular beauty of Mahaulepu, yet HDF now admits they will dump polluted material (manure/ effluent) in the ocean (see their latest concept). The 100 ton per day dairy cow dumping, will be on top of that already deposited each day. Any common 1-inch rain event, and you literally have a mess at Mahaulepu Beach, the caves and the ocean reef. This latest concept is a failure of reason, a distortion of truth, seeking money/profit not "fresh Hawaiian milk" as their silly PR person continues to spin. The HDF plans for an industrial sized dairy represents a destructive effort with no empirical data and no practical reality to their at best "misguided venture" The DEIS response from Group 70 (the author of HDFs proposals) is one typified by canned, one size fits all responses; a compilation based on partial explanations, generalizations, unsupported assumptions, conjecture, false/misleading information and non-descript vagary. It is problematic, contradictory, inaccurate, and its attempt to ignore legitimate and supposedly sought for inquiry clearly displays both Group 70s and HDFs disregard for governmental regulations and academic/scientific protocol. Clearly to more objective evaluators, if built this project is certain to end in a stigmatized, ecological and economic disaster of the south shore area of Kauai and indeed the county. It simply won't work. In the absence of defining, proof level, tangible content, the overall quality of the DEIS, the use of will do/will comply promises guarantees nothing. The EIS response created by Group 70 does nothing to allay the concerns submitted, and miserably fails the threshold of a legitimate evaluation. Instead if built, it assures the certainty of a counterproductive effort that will stain Kauai for several years after it is shut down

PostScript: For 2 months I have been away from all involvement or communication re: Group 70 and HDF till June 24 2016. I now am informed of the fact that HDF submitted to Sina Pruder of DOH 27 major changes to their Waste Management Plan but that information was not included in the DEIS data shared with the public by Group 70.

These significant deviations from the proposal in question are disappointing. If Group 70 was aware of these changes, such unshared knowledge violates all principles of fairness, honesty, and corporate integrity, and would constitute a significant corporate deficit unworthy of any credible organization. It certainly rules out any validation by Group 70 of the worthiness of this materially changed proposal (one which they wrote.) It is an underhand effort not atypical of the many HDF misrepresentations. If Group 70 was aware of these changes it makes any EIS ruling by them highly questionable: frankly, to me, openly wrong. It appears to be a legal Issue or one that should, at minimum, trigger a new EIS. If not remedied clearly and promptly, a lawsuit is warranted. If Group 70 has the integrity it claims, it will recuse themselves from further involvement and leave the outcome to an unbiased, better informed organization: one who truly understands what factors constitutes a reasonable dairy operation.



Ronald John
January 3, 2017
Page 2 of 14

January 3, 2017

Ronald John
Rorajohn@aol.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)

Māhā'ulepū, Kōloa District, Kaua'i, Hawai'i
Response to Comment on Draft EIS

Dear Ronald John:

Thank you for your email dated of July 15, 2016, followed by three additional emails dated July 25, 2016 regarding the Hawai'i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

EIS Preparation

Group 70 International, Inc. (Group 70) is responsible for the preparation and processing of the Hawai'i Dairy Farms Environmental Impact Statement (EIS). The EIS was prepared in accordance with the requirements of Chapter 343 Hawai'i Revised Statutes and the "Environmental Impact Statement Rules" (Chapter 200 of Title 11, Hawai'i Administrative Rules – HAR §11-200). Public involvement included a public scoping meeting (see <http://tinyurl.com/hdfpublicsheets>), and a public comment period on the EIS Preparation Notice. Group 70 engaged qualified technical experts to document, evaluate and analyze natural, cultural and economic resources who are well-known and qualified in their respective fields of study.

The State EIS rules, HAR §11-200, require "... the government entity with the most permit responsibility" to act as an accepting agency. The accepting agency reviews the EIS to determine that the process outlined in HAR 11-200 was followed; following publication of this Final EIS, the State Department of Health will issue its acceptability determination, which will be published in the *Environmental Notice*. The Office of Environmental Quality Control works with both the applicant (HDF) and the accepting agency to meet all requirements of HAR §11-200.

Soils

EIS Section 4.3 Soils describes the soil conditions based on both the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soils maps and on field analysis of soil samples (Appendix C). The classification of soils as poorly drained indicates the relatively slow rate water movement within soil and to surrounding areas. Poorly drained is not an indication of low or poor infiltration. Infiltration refers to the ability of water to enter the soil surface, whereas "drainage" refers to the movement of water within or from the soil profile.

OF COUNSEL

Ralph E. Portmore
FACIP
Hiroshi Hidb
AIA

Kikuyu Grass Production

Thus far, HDF has gathered over 2 years of trial data for Kikuyu grass located at the center of Māhā'ulepū Valley on HDF's leased property. The Kikuyu grass measured consists primarily of Kikuyu with some guinea grass mixed in. Cover crops (diversified forage) were also inserted into the Kikuyu grass during the winter months to provide the additional forage needed when the primarily Kikuyu grass mix may not be as productive. The use of diversified forage is recommended by the National Resource Conservation Service (NRCS) Conservation Practice Standard – Nutrient Management Code 590.

Forages were cut, analyzed, and measured for production, nutrient content and quality, and nutrient uptake rates, over this 2 year span by HDF's forage expert, Farms n' Forages, a locally-owned business that assists many farmers here in Hawai'i. The forage was tested and analyzed by Cumberland Valley Analytic Services (CVAS) which is certified by the National Forage Testing Association, who performed wet chemistry analysis for Dry Matter (DM), Crude Protein, Soluble Protein, Acid Detergent Fiber (ADF), Neutral Detergent Fiber (NDF), Ash, Calcium (Ca), Phosphorus (P), Magnesium (Mg), Potassium (K), Sodium (Na), Iron (Fe), Manganese (Mn), Zinc (Zn), Copper (Cu), and in vitro NDF analysis as a method of assessing the nutritive value of the grass trial samples. The nutrient value of the grasses analyzed was then converted to nutrient uptake rates (in lbs of nitrogen and phosphorus per ton of DM by Atlantic Dairy Consulting, through the use of the Cornell Net Carbohydrate and Protein System (CNCPS) Model, which uses farm-specific inputs on feed and diets to yield both approximate milk production and manure excretion values and quality.

HDF understands the concerns regarding non-irrigated areas and their lower potential yields. HDF has conducted more than 2 years of grass yield trials on HDF sites, and has engaged Farms n' Forages to complete these trials. Farms n' Forages has extensive experience in grass and forage production on each of the major islands in the State of Hawai'i. Based upon the field trials, utilizing primarily Kikuyu grass mixed with some guinea grass, and interspersed with diversified forages from November to March, average annual yields on the HDF site range from 17 tons DM per acre per year to over 20 tons DM per acre per year, with appropriate fertilizer and irrigation applications that do not exceed the agronomic need of the crop. These monthly yields often exceeded 20 tons DM per acre per year in the summer months and lowered to between 15 and 18 tons DM per acre per year in the winter months (with diversified forage). This was verified by forage testing and on-site soil sampling performed by Farms n' Forages (grass yields), Spectrum Analytics (soils and fertility recommendations), Cumberland Valley Analytic Services (grass nutrient) as well as Dr. Yost (soils and fertility recommendations in Appendix C of the EIS).

HDF believes the grass yield rate of 16.3 tons of DM per acre per year and the nutrient uptake rates of 64 pounds of nitrogen removed per ton of DM and 11.4 lbs. of phosphorus removed per ton of DM, as shown in the Nutrient Balance Analysis of the DEIS, are reasonable and realistic rates based upon the work and analytics performed by Farms n' Forages, CVAS, and Atlantic Dairy Consulting. *Other data from Hawai'i also with the highly productive C4 grasses document world class, high levels of productivity are realistic (Valencia-Gica et al. 2012 data from Hawai'i) (Yost).* The yield rates and nutrient uptake/removal rates provided are in accordance with NRCS guidance and provide a realistic projection of the yield production and nutrient uptake for a planned dairy operation. It is consistent with the requirements and processes of the NRCS – Nutrient Management Code 590.

While the yield production and nutrient removal rates shown in the DEIS would not be the exact nutrient uptake numbers based upon the actual operation of the planned dairy, with the commencement of actual animal grazing, manure production, and effluent application, the trials are representative of and realistic for a rotational-grazing, pasture-based dairy operation. The yield production and nutrient uptake rates are

based upon appropriate site-specific inputs and certified laboratory testing for yield results and nutrient content and value to the proposed cows used by HDF. Actual grass is being grown on the farm which is fertilized and irrigated, cut, and sampled for actual production and nutrient content and uptake data.

Air Quality/Odor

Unlike a conventional feedlot dairy facility that must collect and store all manure produces until future disposal, the majority of manure from a pastoral-grazing operation will be deposited directly on the pasture where it will break down and be incorporated into the soil within a one- to three-day period.

Without a dairy in operation, computer-generated modeling was used to determine the potential impact. Results for the committed herd size of 699 mature dairy cows using typical effluent irrigation conditions show that odors may be detectable by 50 percent of the sensitive population once per 200 hours, or just 44 hours per year, within one-quarter of a mile south of the dairy farm boundary. For wet periods, odor could extend approximately 2.151 feet (less than one-half of a mile) beyond the southern boundary. The closest public use areas beyond the odor extent south of HDF are a stable and golf course, both approximately 0.5 miles further south, and the closest residential and resort units are 1.3 miles beyond the possible odor extent (EIS Figure 4.19-1).

HDF has elected to restrict slurry application to periods when wind speeds are between 9 and 20 mph. With application at the most impactful location, paddocks south of the taro farm, the odor from slurry application barely crosses the southern boundary. Due to wind speeds within this range occurring on average 243 days of the year, the 99.5th percentile is reduced to potentially perceiving the odor just 29 hours per year.

For the potential future contemplated herd size of up to 2,000 mature dairy cows, during unusually wet periods, with application at the most impactful location – paddocks south of the taro farm – the odor from slurry application could extend approximately 1,580 feet, or less than one-third of a mile. The odor isopleth for the typical irrigation effluent extends beyond the dairy farm boundary approximately 3,070-feet (over one-half mile) which would not reach recreational or residential areas. The parameters used in the analysis were intentionally conservative, and the impacts shown assume an unlikely confluence of worst-case meteorological data, irrigation location, and grazing location. Actual offsite odor impacts are likely to be much lower and/or less frequent than shown.

Under either herd size, odors would not reach recreational or residential areas. Sections 4.19.2 and 4.25.2 of the EIS include graphics of the potential odor isopleths. The full odor report can be found in Appendix I.

HDF considered comments provided by Exponent to the odor results for the dairy contained in the Draft EIS: Air Emissions and Odor Evaluation Technical Report (Arcadis, May 2016). Exponent prepared its own odor emission report based on two alternate methods, using different assumptions on the timing of effluent irrigation and slurry application, as well as different sources for odor emission rates, and comparing odor results against a lower threshold than that used by Arcadis. Exponent argued the threshold “was not considered appropriate for a sensitive population such as hotel guests at a resort area.” The HDF air quality and odor technical expert, Arcadis, reviewed Exponent’s comments and odor report and recommended refining the odor model to depict both the “typical” irrigation effluent odor and the “wet condition” irrigation effluent odor. Additionally, Arcadis adapted the data used by Exponent (Jacobson et al., 2001) to account for differences in diet and for the Kikuyu thatch that will receive manure at HDF as opposed to a conventional compacted dirt feedlot which was used by Exponent.

Herd Conditions and Milk Production

The milk production, and therefore nutrient production numbers, used for nutrient balance and accounting for HDF’s Nutrient Balance Analysis were calculated using the Cornell Net Carbohydrate Protein System (CNCPs) model, prepared by Robert C. Fry, DVM, Atlantic Dairy Consulting. The appropriate environmental inputs into and outputs from the model are based upon field trials or site specific data as available. The nutrient mass balance and accounting on the farm is provided in the Appendix D – Nutrient Balance Analysis (NBA), based upon the CNCPs model, which is sufficient for evaluating environmental impacts from a pasture-based rotational grazing dairy operation. Please see previous responses to nutrient uptake numbers supported by the grass farm trials.

The 18-day rotation is the basis of the field trials – which is typically producing yields greater than 16.3 tons DM per acre per year to support nearly 2,000 mature dairy cows. The 18-day rotation allows for six mobs of cows to be utilized on the farm, based upon the number of paddocks designed. Grass yields, protein content, and nutrient uptake numbers are all predicated on the 18-day rotation / cutting and are supported by field tested data and laboratory analytics. While the CH2M Hill report provides its own inputs, not based upon field-specific data, to estimate milk production from Kikuyu-based pastures, it does not take into account actual forages proposed by HDF and actual forage nutrient content field tested and analyzed in a laboratory for this specific project.

Rainfall Events and Flooding

The period of daily rainfall of the Māhā’ulepū gauge (No. 941.1), located on the farm site, that was used for the DEIS is from January 1, 1984 through December 31, 2013, a period of 10,957 days. The available record is for 10,597 of these days, of which only 360 days is truly missing recorded data. Moreover, statistics of this available record closely match the Online Rainfall Atlas of Hawaii (2013) by Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.L. Chen, P.S. Chu, J.K. Eischeid, and D.M. Delpartre. Based on this, the available rainfall records of Station 941.1 were taken to be a reasonable representation of this site’s actual rainfall (Nance). In total, 360 days of truly missing records account for only 3.3% of the total time period.

Additionally, points identified by error codes in the publicly available rainfall data also do not necessarily truly reflect missing data. The Māhā’ulepū gauge does not record data every day and in many instances, records a multi-day precipitation record collecting data over a multiple day period instead. In these instances when a multi-day record is collected, the days over that record are labeled with error codes (-9999). The use of the error code does not actually reflect “missing” data in this scenario. A reasonable and realistic daily rainfall estimate may be determined over that multi-day period (e.g. by averaging or by comparison to other available rain gauge data in the area such as HDF’s Ag Hub system). As shown in the following table for the month of September 1992, which the CH2M Hill comments specifically point out as a month with significant “missing” data, there are three (3) sets of multi-day precipitation records (MDPR), as well as eight (8) sets of daily records (PRCP). CH2M Hill has identified 19 days of missing data in this month. In fact, there are no days with actual missing data when taking into the account the MDPR readings. The table below reflects the publicly available data in the format received from the National Oceanic and Atmospheric Administration (NOAA) for the Māhā’ulepū 941.1 rain gauge, with the “Notes” column added for discussion:

DATE	MDPR, (0.1mm)	MDPR, (in)	DAPR	PRCP (0.1 mm)	PRCP (in)	Notes:
19920930	-9999		-9999	0	0	PRCP Recording Taken = 0"
19920929	-9999		-9999	0	0	PRCP Recording Taken over 6 Days = 0"
19920928	5	0.0	6	-9999		MDPR Recording Taken over 6 Days = 0"
19920927	-9999		-9999	-9999		If MDPR = 0", then Daily PRCP = 0"
19920926	-9999		-9999	-9999		If MDPR = 0", then Daily PRCP = 0"
19920925	-9999		-9999	-9999		If MDPR = 0", then Daily PRCP = 0"
19920924	-9999		-9999	-9999		If MDPR = 0", then Daily PRCP = 0"
19920923	-9999		-9999	-9999		If MDPR = 0", then Daily PRCP = 0"
19920922	660	2.6	12	-9999		MDPR Recording Taken over 12 Days = 2.6"
19920921	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920920	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920919	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920918	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920917	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920916	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920915	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920914	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920913	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920912	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920911	-9999		-9999	-9999		If MDPR = 2.6", then Daily PRCP = +/-0.22"
19920910	-9999		-9999	0	0	PRCP Recording Taken = 0"
19920909	-9999		-9999	0	0	PRCP Recording Taken = 0"
19920908	13	0.1	4	-9999		MDPR Recording Taken over 4 Days = 0.1"
19920907	-9999		-9999	-9999		If MDPR = 0.1", then Daily PRCP = +/-0.03"
19920906	-9999		-9999	-9999		If MDPR = 0.1", then Daily PRCP = +/-0.03"
19920905	-9999		-9999	-9999		If MDPR = 0.1", then Daily PRCP = +/-0.03"
19920904	-9999		-9999	114	0.45	PRCP Recording Taken = 0.45"
19920903	-9999		-9999	229	0.90	PRCP Recording Taken = 0.90"
19920902	-9999		-9999	41	0.16	PRCP Recording Taken = 0.16"
19920901	-9999		-9999	41	0.16	PRCP Recording Taken = 0.16"

As noted in the table, the multi-day precipitation total from September 23 to September 28 shows a MDPDR of 0 inches. Total rainfall for each day can be assumed to be 0 inches. From September 5 to September 8, another MDPDR was recorded of 0.1 inches, also negligible (if averaged, the daily rainfall would equal 0.03", quite insignificant to any agricultural operation). Even within the twelve (12) day MDPDR recording of rainfall from September 11 to September 22, a total of 2.6 inches of rainfall was recorded. While the daily totals are not provided, the data is sufficient to characterize rainfall and for use within HDF's Nutrient Balance Analysis and its irrigation management plan, which is based upon monthly rainfall totals. CH2M Hill's comment that the month of September 1992 contains excessive "missing" data is therefore not supported.

Regarding comments about flooding and frequently poor draining conditions, these subjects are addressed directly in the FEIS Section 4, along with technical studies included in Appendix K, and technical comment responses and consultant rebuttals included in Volume 5- G. Hydrology and Water Quality. Specific hydraulic analysis of existing drainage structures will be done when the farm construction plans are prepared and if existing structures must be upgraded to adequately convey run-on and off-site flows, those structures will be identified and improved to ensure proper conveyance, according to applicable codes and standards.

Referring to **Table 4 - NOAA - Average Monthly Precipitation Data**, and **Table 12 - Monthly Irrigation Demand** within the Nutrient Balance Analysis, based on the available historical data, NOAA data from the Māhā'ulepū 941.1 rain gauge shows an average rainfall in the month of September of 2.73 inches. Based upon the September 1992 total rainfall for the month at 2.7 inches from the NOAA Māhā'ulepū 941.1 rain gauge, the month appears consistent compared to the historical average, of which the multi-day precipitation data totals do not have any effect on the irrigation demand analysis, as the total rainfall each month is used in irrigation planning. Daily irrigation planning is simply not effective or realistic for farm management.

The Lihū'e rain gauge, utilized in the CH2M Hill comments, is also not representative of the Māhā'ulepū site. It is located on the windward side of the Hā'upu mountain range, some six miles from the project site. The CH2M Hill modeled rainfall used is 70.14 inches per year from the Lihū'e station. The modeled rainfall rate is unrealistically high as compared to the average 44.26 inches per year from the Māhā'ulepū rain gauge 941.1. The Māhā'ulepū gauge, in turn, is located on the project site and provides site-specific data. *Statistics of this available record closely match the Online Rainfall Atlas of Hawaii (2013) by Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.L. Chen, P.S. Chu, J.K. Eischeid, and D.M. Delpartre. Based on this, the available rainfall records of Station 941.1 were taken to be a reasonable representation of this site's actual rainfall (Nance).* In total, 360 days of truly missing records account for only 3.3% of the total length of this time period.

Water Troughs

Watering troughs will contain water for the period of 12 to 24 hours when cows are utilizing the water troughs in the occupied paddocks. HDF personnel will fill troughs just before the cow "mobs," enter the paddock(s) for the grazing period; troughs will be emptied after the cows are moved to another paddock.

Adjacent Taro Farm

The adjoining lands of the Haraguchi taro farm will be respected by the management practices of the dairy farm. There will be fencing dividing the properties and surface water flow at the dairy paddocks will be directed away from the taro farm. Agricultural operations and Best Management Plan measures implemented at the dairy will be consistent with the NRCS Conservation Plan measures.

Nutrient Data

Nutrient data is presented for both the committed herd size of up to 699 mature dairy cows and the contemplated herd size of up to 2000 mature dairy cows.

Herd Management

Information on herd management is present in EIS Section 3.4. Health of the herd is of primary importance as the success of a dairy relies on cows effectively producing quality milk. All cows will be treated with a high standard of care. Dairy managers and caretakers will be trained and competent in handling animals to minimize stress and ensure the herds' welfare.

All vaccines, antibiotics, ionophores and hormone therapy will be prescribed via a veterinarian – client – patient – relationship (VCPR). The Animal Medicinal Drug Use Clarification Act (AMDUCA) provides veterinarians acting within the VCPR to provide options so that cows and calves can receive the medications and hormones they need when they need them. Animal History, disease incidence, disease risk, local prevalence, product cost, Federal Drug Administration (FDA) approval and route of administration all will be part of HDF-specific veterinary protocols to ensure best animal welfare with the least amount of pharmaceuticals. All vaccination and treatment protocols will follow FDA and AMDUCA guidelines.

Unlike traditional confined dairy operations, HDF cows will be on pasture up to 22 hours a day, which enhances overall health of the animals and further reduces risk of illness and the need for antibiotics. There will be no use of sub-therapeutic, preventative, or growth promoting use of antibiotics, ionophores or hormones (such as rBST). Antibiotics will only be used to treat individual animals with life-threatening situations and only after prescribed by veterinarians following all guidelines of AMDUCA. Furthermore, HDF will follow the best animal welfare protocols, including vaccination protocols for all age classes to further prevent bacterial infection and to minimize the use of antibiotics on HDF. Antibiotics are costly, lead to wasted milk and mean a cow is unhealthy, which is not beneficial to the animals or operations. HDF will limit the use of antibiotics as much as possible.

HDF will follow all regulatory guidelines when handling and discarding milk, urine and manure that may contain trace residue from treated animals. HDF estimates less than 5 percent of the herd may be treated for at most 10 days out of the year.

BMP's to be implemented, including the 35 foot setbacks from drainage ways, will additionally reduce the risk of any waste runoff that may include possible product residues. Further, within the paddocks, populations of microorganisms stimulated by additions of effluent are superactive and very effective in inactivating pharmaceuticals and additives due to the reduced half-life resulting from enhanced immobilization and degradation by the microbiological community.

HDF will comply with the applicable State and Federal regulations related to the importation of livestock and livestock disease control. This includes importation requirements by the State of Hawai'i, Animal Industry Division pre-entry requirements such as testing for diseases such as brucellosis, and tuberculosis. The cows will also undergo approved external parasite prevention methods, and national uniform tagging or identification registration and processing.

Dry cows will be managed through cooperative her management operations involving the off-site ranches.

Irrigation System

The EIS Section 3 presents the project description, and EIS Appendix D includes the updated Nutrient Balance Analysis (NBA) which describes more details on the irrigation systems. HDF is following all appropriate USDA – NRCS and DOH standards, practices, and guidelines, which allow for livestock as-excreted manure in addition to land application of manure on agricultural facilities for the use in growing crops. If not for the assumption that over a period of time, manure application is spread relatively evenly over the paddock and not concentrated in one spot, virtually every livestock or ranching operation would have flawed nutrient balance calculations with respect to accounting for nutrients from as-excreted manure.

The original NBA called for drip irrigation in the makai areas of the farm, which will now be irrigated using gun irrigation system. The irrigation system consists of pivots that cross portions of the Waioipili drainage

ditch and another separate agricultural drainage ditch which ultimately discharge to the ocean. The pivot systems are equipped with a drop hose valve that is composed of a composite material, with small sensors that are low maintenance and resistant to salty weather conditions.

Proper operations, maintenance, and repairs of the irrigation system will prevent potential impacts to water quality and prevent direct discharge into the drainage ditches. Stringent preventative maintenance will be in place to make sure all facets of the irrigator operate to the pivot operator's needs. The pivot operator will be responsible to maintain and look after each pivot while in operation. Only one pivot will operate at any given time (though the system is designed and is automated enough such that two pivots may run at the same time), ensuring that the operator is focused and attentive to the one operating pivot.

Compliance with Applicable Regulations

HDF is dedicated and required to meet all applicable regulations and requirements for dairy operation in the State of Hawaii and County of Kauai, as well as national guidelines and standards set by the USDA, NRCS and EPA. For dairy operations with 700 or more mature dairy cows, additional regulatory review and permitting by the State Department of Health would be required. The application process for a National Pollutant Discharge Elimination System (NPDES) Concentrated Animal Feeding Operation (CAFO) permit includes public notification and input. At the discretion of HDF, management may choose to apply to expand operations up to the carrying capacity of the land, which is estimated to be up to 2,000 productive mature dairy cows. Permit process compliance would be followed at such time HDF may decide to pursue an expanded operation.

Taro Farm Protection

Per the 2016 Department of Health Clean Water Branch Māhā'ulepū Sanitary Survey, the Haraguchi taro farm poses no significant risks as a potential contamination source.

GFS technology allows for accurate placement of irrigation. The size of irrigation droplets is large enough to ensure water gets to the ground and does not evaporate prior, therefore the risk for overspray is minimal. In addition to irrigation technology, 20 foot setbacks on all sides of Hariguchi site are incorporated into the HDF design. In terms of distance, current lo'i is an additional 500-feet from the northern site boundary, minimizing risk for the taro farm.

NRCS Technical Guidance

NRCS has actively engaged with NRCS to address best practices for dairy farm development and operations, including waste utilization.

Nutrient Balance Analysis

Soils at the HDF site have been analyzed as part of the agronomic plans for the dairy. HDF will not apply nutrients past the plant uptake requirements and agronomic need. In both the 699 mature dairy cow and 2,000 mature dairy cow scenarios, at a grass yield of 16.3 tons of DM per acre per year, there is simply not enough nitrogen nutrient from manure sources (as-excreted, liquid effluent, slurry applied) and a slight excess of phosphorus only in the 2,000 mature dairy cow scenario. HDF will not apply excess phosphorus because the herd size would be increased incrementally, to ensure no over-application of nutrients. Ultimately, commercial fertilizers will still be required. Nutrients are broken down quickly and absorbed by the crop. Cows are rotated to ensure over-application of nutrients does not occur.

NRCS Plan

The planned farming operation for this property has been reviewed in the West Kauai approved NRCS plan. This includes oversight and assistance by NRCS, as approved by West Kauai Soil and Water Conservation District.

HDF Nutrient Management Plan

As presented in EIS Appendix D and the technical responses provided in Volume 5, the plans for nutrient management at HDF are comprehensive and holistic, addressing the pasture crop needs for growth and development. Detailed information on the soils is presented in EIS Section 4.3 and Appendix C, and accounted in pasture grow-out and dairy paddock management.

Irrigation Pivot

As discussed in EIS Appendix D, the typical irrigation pivot system operates with 11 in wide wheels and loaded span weights of approximately 4,400 lbs. Detailed components of the irrigation system may be adjusted based on performance in the pasture development phase.

VR Error Rates

As discussed in EIS Appendix D, with the controls put in place, the precision irrigation spray systems will not release irrigation water to the agricultural ditches. Strict irrigation setbacks will be imposed and controlled with the variable application areas. Field verification of the variable application system will allow for precise tuning of the irrigation to avoid release to the agricultural ditches.

Pathways

The EIS Appendix D and technical responses in Volume 5 address the management of manure in the pasture paddocks and the connecting pathways. Runoff management along these routes will direct surface flows toward the paddocks and serve as detention for surface runoff flows and suspended constituents.

Buffer Vegetation

The planned measures including agricultural ditch setbacks and buffer vegetation will serving to detain surface runoff, as discussed in EIS Section 3, Appendix D and further elaborated in technical responses in Volume 5. These measures are accepted Best Management Practices that will be implemented to address the runoff conditions stated in your comment.

Seabirds and Lighting Standards

Seabirds that nest in upland areas of Kaua'i may overfly the site. Outside lights at HDF will utilize shades to protect against uplighting and be "dark sky compliant" to prevent possible disorientation of the seabirds. EIS Section 4.10 addresses fauna.

Rainfall, Surface Runoff and Agricultural Ditch Drainage

The addition of irrigation and effluent, within the agronomic need of the crop, will ensure that nutrients do not pass through the root zone and are taken up by the crop, the ground is not saturated, and runoff is minimized. Application of effluent from up to 2,000 cows can be supported by the thick kikuyu that formed on the fields.

Also, the main drainage ways and ditches (not the agricultural field ditches) are meant to move groundwater seepage and surface runoff to the ocean, just as any natural stream would do in a valley. The main drainage ways and ditches are specifically excluded from the farm by both physical setbacks

(fencing), and effluent application limitations (setback). Best management practices are included to minimize impacts to surface water quality.

Runoff was conservatively estimated. The older and previously not-maintained off-site cutoff ditches on the uphill side of the HDF site were unable to divert any flow from running onto the site from the steep slopes. This conservative estimation allows HDF to plan for worst-case scenarios in terms of the amount of run-off into the HDF site from upslope areas.

If the off-site cutoff ditches are maintained as planned (and as agreed by the landowner), run-on towards the site will be significantly reduced (as it will be diverted along the valley walls and downstream of the HDF site), and therefore the potential for surface runoff through and from the paddocks is significantly reduced. This will reduce the amount of potential nutrient discharge through surface runoff, which is why the estimation of nutrient loss through surface runoff, utilized in the water quality assessments in the DEIS, is minimal from the farm site. Most of the rainfall will remain on-site and percolate for use by the crop.

Electrical Power Utilization

Electrical power will be provided through an overhead service connection to the existing Kaua'i Island Utility Cooperative (KIUC) grid. An existing overhead line along the farm road mauka of the facility will feed to a new three-phase, 75-300 kVA transformer via a subgrade duct bank. Electrical lines to the dairy facilities will be run in a concrete-encased conduit routed underneath the access road. Additional power will be supplied by photovoltaic (PV) panels mounted to structure roofs, with a total generation capacity of 500 kW power. Gasoline and diesel fuels will be stored in above-ground tanks. Fuels will be used in farm equipment, and will be available if needed to power an emergency back-up generator. For additional information on power, backup generators, and dairy building site layout, see EIS Section 3.0.

Dairy Model

HDF has adapted the New Zealand model – pastoral-based rotational grazing dairy – to U.S. standards and best management practices. NRCS provides extensive guidance for agricultural operations to meet stringent standards including those under the Clean Water Act. Nutrient management is a key tenet, and the protection of waterways has been applied to the design of HDF paddocks using fencing to create large setbacks from drainages. Setbacks at HDF are designed 35-feet from each bank – for a total of 70 feet – to exclude cows from waterways. The setbacks are vegetated to create filter strips to effectively trap soil particles and organic debris from entering stormwater runoff. Setbacks and buffers from public drinking water resources are also incorporated into the farm design (EIS Section 3.3.2 *Agricultural Infrastructure* and Appendix D *Nutrient Balance Analysis*).

HDF's Nutrient Balance Analysis is predicated on farm specific inputs and calculated outputs using the Cornell Net Carbohydrate and Protein System (CNCPS) model. While the Standard D384.2 Manure Production and Characteristics (ASABE, 2005) can still be used today to estimate manure production and nutrient excretion, the CNCPS model uses more realistic nutrient inputs. ASABE is a simplified and general standard last updated in 2005. The ASABE calculations were reasonably correct in year 2000 but have not accounted for changes in genetics, management systems, and nutritional advances over the past 16 years. The ASABE equations, unlike the CNCPS system, does not use farm specific animal, environmental, and dietary inputs to determine its manure production and nutrient excretion estimates, and instead uses "book values".

NRCS Conservation Practice Standard Code 590 – Nutrient Management allows for the use of realistic nutrient inputs when planning for nutrient outputs. The manure production and nutrient excretion estimates from the CNCPS model are more accurate and represent farm specific animal inputs, dietary inputs from available grass trials from the HDF site, and incorporate changes in farm management, genetics, and nutritional advances. Therefore the CNCPS model is more accurate than if manure excretion and nutrient output was based upon “book values”. Manure production and nutrient excretion estimates from Exponent Table 1 are based upon “book values” of the ASABE Standard, which uses the publication Dairy NRC 1988 for diet formulations and input (NRC is the National Research Council that published a handbook, “The Nutrient Requirements of Dairy Cattle”). The 28 year old Dairy NRC 1988 is the predecessor of the most recent NRC publication, last updated in 2001. Because of obsolescence associated with these NRC predictions, the 2015 CNCPS model was used for HDF calculations.

References to the CNCPS model calculations can also be found in peer review scientific literature, namely, in the Journal of Dairy Science 98:6361–6380 The Cornell Net Carbohydrate and Protein System: Updates to the model and evaluation of version 6.5 M. E. Van Amburgh, et. al. and also in the JDS 95 :2004–2014 Development and evaluation of equations in the Cornell Net Carbohydrate and Protein System to predict nitrogen excretion in lactating dairy cows R. J. Higgs, et. al. and JDS 81: 2029 - 2039 Evaluation and Application of the Cornell Net Carbohydrate and Protein System for Dairy Cows Fed Diets Based on Pasture Kolver, E.S. et al.

Qualifications

Group 70 civil engineers and environmental engineers prepared the dairy waste management plan in conjunction with Peter Hughes of Red Barn Consulting, a nationally recognized dairy management consultant. Additional expertise involved in the dairy waste management plan and nutrient balance assessment include subject matter experts from: the University of Hawai'i at Mānoa College of Tropical Agriculture and Human Resources; Atlantic Dairy Consulting, Farms n' Forages, Spectrum Analytical, and Cumberland Valley Analytical Services.

Off-Site Ranches

Cattle ranching on Kaua'i spans generations, and ranchers are stewards of the lands. Healthy lands raise healthy beef cattle. Local ranchers are experienced in animal welfare, and can collaborate with HDF to care for dairy cows during annual rest cycles and to raise calves until old enough to join the dairy herd. The availability of calves from a dairy such as HDF provides new animals to maintain or expand a beef herd. Each ranch will determine its capacity based on business and operational goals.

Secondary Containment

The storage pond will have an emergency overflow spillway that will allow discharge from the pond in the event of a cataclysmic emergency, such as a rainfall event greater than the 25-year, 24-hour storm or other natural disaster. This secondary berm will be constructed downhill of the effluent ponds before the existing drainage way and access/farm road, to contain an emergency discharge from the pond from the overflow spillway. Although not required by the Guidelines, this secondary containment area will provide additional containment that will be roughly equivalent to 30 days of total liquid effluent volume collected over the 30-day storage period, or 1,136,841 gallons of additional emergency storage.

Gun Irrigation

Gun irrigation is addressed in EIS Section 3, Appendix D and technical responses contained in Volume 5. Error rates in gun irrigation systems vary depending upon nozzle size and wind speed. HDF will ground truth their systems under a range of typical application conditions to develop irrigation management

protocols which minimize irrigation error, set up safety buffers, and minimize the potential for release outside intended irrigation zones.

Irrigation Application Methods, Rates and Soils

To address several of your comments on the technical aspects of the irrigation system, we refer you to the information presented in EIS Section 3, Appendix D and the technical responses in Volume 5. Irrigation Rates - It would make no sense for HDF to apply irrigation water at rates which exceed the intake capacity of the pasture and soils. Detailed information on the rain gage data is addressed in the response provided earlier in this letter. Drip tubing or drip tape is not planned for irrigation by HDF.

Weather, Rainfall and Flooding

Detailed information presented in EIS Sections 3 and 4, Appendix D and the technical responses in Volume 5 address the information on dairy management given the historical weather trend of the dairy site. Storage capacity of the effluent ponds and emergency overflow capacity is more than adequate to retain material onsite during adverse weather conditions.

Sustainability

Sustainable is defined in the context of this EIS as: Meeting the needs of the present without compromising the ability of future generations to meet their own needs. HDF will achieve these objectives for sustainability.

Pathway Crossings

As described in EIS Appendix D, the crossings of the agricultural ditches will involve very short overpass pathways which will minimize the length of time animals spend on the crossing. This will minimize the potential for animals to produce urine and manure which could enter the ditches. Dairy staff will maintain these crossings on a daily basis to clear manure material.

Animal Cemetery

HDF has adequately planned its cemetery site and incorporated Best Management Practices required to protect water resources surrounding the HDF site. The anticipated animal mortality rate for HDF is typically less than 2 percent for productive cows. Greater numbers of animal mortality are expected for the young and stillborn calves, consisting of between 4 percent and 5 percent of the herd size. The animal cemetery is specifically located on the uphill side of the farm, in an area of relatively flat pasture. Site selection criteria for the cemetery paddock included protection from prevailing winds, and distanced more than 100 feet away from any drainage way, 200 feet from any natural watercourse, 300 feet from any well, and more than 20 feet from any buildings. Within the cemetery paddock, pits will be sited based on soil suitability and slope. An area of approximately 5,000 square feet is needed for the animal cemetery at the contemplated herd size of up to 2,000 mature dairy cows, which is a fraction of a 3- to 5-acre paddock.

A containment berm will be created around the pit area to prevent both run-off on to, and from, the cemetery site. Six (6) pits, approximately 20' x 40' overall and 8 to 10' deep, are designed to accommodate carcasses of up to 150 cows and 360 calves or stillborn animals at the contemplated herd size. Individual pits within the area will be a minimum of 2-feet wide with a length appropriate to bury the carcass. Pits will be lined as required in accordance with NRCS Conservation Practice Standard, Animal Mortality Facility Code 316, to protect groundwater quality. Pits can be reused every 18 to 24 months, which is the typical time for a carcass to decompose.

Pit bottoms will be level, and carcasses will be placed in a single layer and covered with at least 2 feet of organic material. Multiple layers may be created with subsequent burials, or additional area within the cemetery paddock may be used as needed. Based on preliminary analysis, HDF does not anticipate encountering groundwater in the cemetery paddock area when excavating the pits. The paddock area will not be grazed.

HDF may also consider procuring and installing an incinerator to use for managing mortality on the farm. The incinerator would meet the appropriate guidance from NRCS Conservation Practice Standard – Animal Mortality Code 316 as well as State and EPA emissions regulations, to ensure no adverse air quality impact from the incinerator operations.

Waiopili Ditch

The EIS in Section 4.17.2 refers to polluted streams that have been tested by the Surfrider Foundation. The Kaua'i Chapter of the Surfrider Foundation began collecting water samples in Waiopili Ditch near the bridge accessing Makauwahi Cave Reserve in April of 2014. The group reported high levels of enterococcus to the State Department of Health (DOH) and provided its data, however, DOH was unable to utilize the data as it did not meet Clean Water Branch (CWB) quality assurance/quality control requirements, and it could not be used for regulatory purposes. At the time, CWB had not conducted water quality sampling for either nearshore recreation waters at the terminus of Waiopili Ditch, or of surface waters in the Māhā'ulepū Surface Water Hydrologic Unit.

Complaints from the public citing the high levels of enterococcus in Waiopili Ditch and public concerns about the proposed dairy prompted CWB to conduct a "Sanitary Survey" of the Māhā'ulepū and adjacent watersheds. DOH conducted water sampling within the Waiopili Ditch and areas upstream, and initiated a series of investigations into water quality issues. Following EPA standards for a Sanitary Survey, DOH has completed Part I of its report: Waiopili Ditch Sanitary Survey, Kaua'i, Part I. The Sanitary Survey found no significant impact to the ditch from any activity that could be attributed to the dairy. Feral animal waste, decaying organic debris and inputs from existing agricultural operations may all be contributing factors in the indicator levels found in ditches running through Māhā'ulepū Valley.

In preparation to develop the Draft EIS, HDF listened to public concerns, retained knowledgeable consultants to conduct technical analyses, refined data gathered from field trials on site, and further incorporated U.S. standards and best management practices to create a world-class design for the environmentally sound pasture-based, rotational-grazing dairy. These technical studies and ground-level trials provided additional field-tested data to refine the Waste Management Plan (WMP). It is common practice to periodically update a WMP as site conditions change or are better known to ensure the regulators are reviewing the most current information. HDF prepared a summary of the changes for the Wastewater Branch to highlight the refinements. On July 13, 2016, DOW Wastewater Branch acknowledged that its questions on the updates to the WMP had been addressed by HDF, and that WWB had no further comments at that time. The WMP is not a component of the EIS, however, all relevant information in the updated WMP was incorporated into the DEIS to ensure consistency and transparency for public review and disclosure.

The State of Hawai'i, Department of Health (DOH), Wastewater Branch reviewed HDF's 2014 Waste Management Plan (WMP) for an operation of 699 mature dairy cows, as required by the *Guidelines for Livestock Management* (DOH, 2010). DOH Wastewater Branch completed its review, and HDF obtained building permits for the construction of the dairy facility.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUJAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

No Dairy, please!

Susie Wood <ruthann4us@yahoo.com>

Mon 7/19/2016 5:05 AM

To: HDF <hdf@group70int.com>;

What can I do? Other than say "NO DAIRY!"
Ruthann Jones



PRINCIPALS

Francis S. Oddy, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

Sheryl B. Seaman
AIA, ASID, LEED AP

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
AIA

Stephen Yuan
AIA

Linda C. Miki
AIA

Charles Y. Kaneshiro
AIA, LEED AP

Jeffrey H. Overton
AICP, LEED AP

Christine Mendes Ruotola
AICP, LEED AP

James L. Stone, Arch.D.,
AIA, LEED AP

Katherine M. MacNeill
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ms. Ry Kim
RIBA, AIB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hiroshi Hida
AIA

January 3, 2017

Ruthann Jones
Ruthann4us@yahoo.com

Subject: Hawaii Dairy Farms Final Environmental Impact Statement (EIS)
Māhā‘ūlepi, Kōloa District, Kaua‘i, Hawai‘i
Response to Comment on Draft EIS

Dear Ruthann Jones:

Thank you for your email of July 18, 2016 regarding the Hawai‘i Dairy Farms (HDF) Draft EIS. The following responses are offered to your comments:

The HDF project purpose is to establish a sustainable, pastoral rotational-grazing dairy farm that will increase current local milk production, bolster Hawai‘i’s declining dairy industry, and reduce reliance on imported milk from the mainland United States. The rotational-grazing dairy system utilizes 100 percent of all manure on-site as natural fertilizer to grow grass. This cost-effective method reduces imported fertilizer and feed, and minimizes potential impacts to the environment. HDF reflects a viable approach to apply use of Important Agricultural Lands to agricultural self-sufficiency and food production. HDF represents a continued commitment by the landowner to support farming and local food production, and to aid in the resurrection of Hawai‘i’s dairy industry.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search “Hawai‘i Dairy Farms”: <http://tinyurl.com/OEQCKAUAL>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read "Jeffrey H. Overton".

Jeffrey H. Overton, AICP, LEED AP
Principal Planner

excerpts in the attached February 19, 2015 submission) - it fails to meet the minimum legal standards that an EIS must satisfy.

I will be directly impacted by HDF's dairy farm installation, which will introduce high volumes of nitrate-rich, untreated solid-waste and urine that will adversely affect clean water, the environment, and my quality of life. As a cultural practitioner, my access, practices, and the resources upon which I depend will be negatively impacted.

Because HDF committed to preparing an EIS "in accordance with Hawaii's Administrative Rules [HAR] Title 11 Chapter 200, implementing Hawaii's Revised Statutes (HRS) Chapter 343," for the purpose of "analyz[ing] the potential environmental impacts and mitigation measures associated with agricultural operations" at Māhā'ulepū, Kaua'i, the DOH has a concomitant responsibility pursuant to HRS chapter 343, the public trust doctrine, and Native Hawaiian rights to ensure that the EIS thoroughly and completely assesses the impacts of a project requiring its approval. 1-12, HRS § 343-5(c) provides that the "authority to accept a final statement shall rest with the agency receiving the request for approval." Thus, it is not the applicant's decision as to whether the EIS is sufficiently detailed and complete. The fact that the agency has to make an independent decision is reinforced by decisions of the Hawaii's Supreme Court: *Ka Pa'akai O Ka'āina v. Land Use Commission*, 94 Hawaii'i 31, 51, (2000), and *Kelly v. 1250 Oceanview Ptnrs.*, 111 Haw. 205 (2006).

The public trust doctrine requires that the DOH:

... take the initiative in considering, protecting, and advancing public rights in the resource at every stage of the planning and decision-making process. Thus, the state may compromise public rights in the resource pursuant only to a decision made with a level of openness, diligence, and foresight commensurate with the high priority these rights command under the laws of our state. Such a duty requires DOH [and the LUC] to not only issue permits after prescribed measures appear to be in compliance with state regulation, but also to ensure that the prescribed measures are actually being implemented after a thorough assessment of the possible adverse impacts the development would have on the State's natural resources.

Kelly, 111 Haw. at 231 (internal citations and marks omitted).

The applicant likewise has important duties. It must adhere to the EIS rules. These rules provide that an "EIS is meaningless without the conscientious application of the EIS process as a whole, and shall not be merely a self-serving recitation of benefits and a rationalisation of the proposed action." HAR § 11-200-14. Here, it is clear that the applicant has failed to take its responsibilities seriously. The applicant has ignored many of the questions and concerns raised

July 20, 2016

Hawaii'i Dairy Farms, LLC
P.O. Box 1690
Koloa, HI 96756-1690

Jeffrey Overton, AICP, Principal Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813

Laura McIntyre, Environmental Planning Office
State of Hawaii Department of Health
1250 Punchbowl Street
Honolulu, HI 96813

Re: COMMENTS ON EIS FOR HAWAII DAIRY FARMS, LLC

Dear Messrs. Overton, and Ms. McIntyre:

My name is Kalanikumai Ka Makauliuli O Na Alii Hanohano, a lineal descendant of Nakapā'ahu Kālipoloahilani, who was a Land Commission Award awardee and fee-simple property owner whose holdings were subject to quiet title by the current landowner, Grove Farm Co., in 1976. I submit these comments in response to the Draft Environmental Impact Statement (EIS) prepared by Group 70 International, Inc. on behalf of Hawaii'i Dairy Farms, LLC (HDF) for the latter's proposed use and components, described as "Agriculture (Dairy) use for dairy buildings, roads, sheds, and ponds, paddocks, cow races, farm roads, irrigation system, water storage, drainage ways, setbacks/vegetated buffers." 1-2. This proposed agriculture (dairy) use extends over a 557-acre site located in Māhā'ulepū Valley and consists of portions of three parcels leased from Mahaulepū Farm LLC and identified by Tax Map Keys (4) 2-9-003: 001 portion and 006 portion, as well as (4) 2-9-001:001 portion.

Due to the insufficient details, errors, and omissions contained in this EIS - including HDF's failure to adequately respond to each of my comments to the EISPN (see highlighted

by myself in the EISPN process (see highlighted excerpts in the attached February 19, 2015 submission). What purpose is consultation if these questions are going to be ignored?

These comments specifically incorporate by reference the statements attributed to me in the Cultural Impact Assessment (Appendix H, p. 40); comments to the EISPN submitted by me (see highlighted excerpts in the attached February 19, 2015 submission) and nonprofit community organisations, Mālama Māhā'ulepū and Friends of Maha'ulepū; as well as the comments being made on the EIS by those organisations, and Lewellyn "Billy" Kaohelaui'i and Kauliani Kahalekai, both of whom are cultural practitioners (interviewed by Scientific Consultant Services, Inc. for the Cultural Impact Statement) that are dependent on access and availability of resources in this area.

CUMULATIVE IMPACTS

The Hawai'i Supreme Court has held that Chapter 343 "definitely contemplates a consideration of the secondary and non-physical effects of a proposal prior to a governmental approval thereof. And the effects to be studied include the socio-economic consequences of a proposed action, as well as its direct physical impact." *Molokai Homesteaders Cooperative Assn v. Cobb*, 63 Haw. 453, 466 (1981).

The Hawai'i Supreme Court has also ruled that a group of actions must be treated as a single action when:

- 1) the single action is part of a larger project;
- 2) the single action is a necessary precedent for the larger action; or
- 3) the single action has no independent utility

Kahana Sunset Owners v. County of Maui, 86 Hawai'i 66, 74 (1997). See also, HAR § 11-200-7. Furthermore, HAR § 11-200-2 provides:

"Cumulative impact" means the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Finally, HAR 11-200-17 requires that an EIS discuss "significant beneficial and adverse impacts (including cumulative impacts and secondary impacts)."

The EIS repeatedly notes that while HDF has committed to establish a herd of up to 699 mature dairy cows, expanding the herd to 2,000 mature dairy cows is contemplated if the

rotational-grazing system for the smaller herd size is a proven success. See 1-4, 2-9, 3-5, etc. Thus, the EIS must address not only the impacts caused by the 699-dairy cow herd, but also any *future* impacts which are the result of a herd almost triple that size. This analysis would include a review of not only infrastructure and operational differences for the two herd sizes, with which the EIS primarily concerns itself, but also impacts on the visual and aesthetic resources, archaeological and historic resources, cultural practices and resources, and the surrounding environment - most of which the EIS largely ignores. Vague assurances that "[p]ermit process compliance would be followed at such time HDF may decide to pursue an expanded operation" are wholly inadequate. 2-9.

Comments on the EISPN which concern cumulative economic impact upon the neighbouring community, businesses, real property value degradation, tax base revenue loss, deleterious effect upon road infrastructure, and increased transport traffic should also be addressed.

Applicant's Management Plan or Pledge

In *Hui Alalao v. Planning Commission*, 68 Haw. 135 (1985), the Hawai'i Supreme Court held that the government could not delegate its duties to a private party. In that case, which involved development on the west end of Moloka'i, the planning commission had attempted to condition the approval of an SMA permit on the preparation of an archaeological protection plan by the developer's archaeologist. The developer's plan would protect those sites that the developer's archaeologist decided were significant. The court noted that the commission could not have made appropriate findings given the delegation of the duty to protect historic sites to the developer. The court emphasized that findings must first be made before approval can be granted, and that an agency cannot delegate to a developer the duty to ensure that resources are protected. *Id.* at 137.

Similarly, in *Ka Pa'akai O Ka'aina v. Land Use Commission*, 94 Hawai'i 31, 51 (2000), the Hawai'i Supreme Court held that the LUC could not approve a project conditioned on the developer's future development of a resource management plan.

HDF is proposing to do just what the developers in the *Hui Alalao* and *Ka Pa'akai* cases proposed. The EIS claims, for example, that with respect to pest insects and odour, "diligent housekeeping" and "best management practices" would suffice to address those impacts, even though the precise protocols are not provided. See also 1-15, etc. Similarly, HDF makes the general statement that potential requirements for on-site archaeological monitoring of construction activities "will be implemented," but fails to detail its plan or offer answers to the critical questions: how, when, by whom, and in response to what trigger(s). See also 1-15, etc. If HDF wishes to claim that it will undertake to mitigate many of the impacts raised in the EIS,

then it must include specific descriptions for DOH and the public to properly assess the adequacy of those efforts.

Furthermore, enforcement cannot rest with HDF or its agents alone. It must also rest with government agencies as well. The public trust doctrine requires that the DOH “ensure that the prescribed measures are actually being implemented.” *Kelly v. 1250 Ocean Side Ptnrs.*, 111 Haw. 205, 231 (2006) (internal citations and marks omitted).

SCENIC IMPACTS

Unfortunately, the EIS does not include a simulation of what HDF will look like once operational and managing the 699-dairy cow herd and/or the 2,000-dairy cow herd size. The EIS needs to.

The EIS misleads the public into thinking that the scenic impact is negligible because so much of the land is left in open space, parks, agriculture, and conservation. However, changes or obstructions to views will result not just from construction activities, equipment, or permanent dairy structures and facilities. Natural vistas are impacted by pasture lands and large cattle herds as well.

CULTURAL IMPACTS

Government agencies are “required under the Hawaii Constitution to preserve and protect customary and traditional practices of native Hawaiians.” *Ka Paakai O Ka’aina v. Land Use Comm’n*, 94 Hawai’i 31, 45, 7 P.3d 1068, 1082 (2000). They are under “an affirmative duty” to “protect these rights and to prevent any interference with the exercise of these rights.” *Id.* To this end, agencies “may not act without independently considering the effect of their actions on Hawaiian traditions and practices.” *Id.* at 46, 7 P.3d at 1083. “[T]he promise of preserving and protecting customary and traditional rights would be illusory absent findings on the extent of their exercise, their impairment, and the feasibility of their protection.” *Id.* at 50, 7 P.3d at 1087. To fulfil their duty to preserve and protect customary and traditional native Hawaiian rights to the extent feasible, agencies:

must -- *at a minimum* -- make specific findings and conclusions as to the following: (1) the identity and scope of “valued cultural, historical, or natural resources” in the ... area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area; (2) the extent to which those resources --including traditional and customary native Hawaiian rights -- will be affected or impaired by the proposed action; and (3) the feasible action, if

any, to be taken . . . to reasonably protect native Hawaiian rights if they are found to exist.

Id. at 47, 7 P.3d at 1084. This constitutional duty is in addition to statutory duties. *Id.* at 45, 7 P. 3d. at 1082.

In the *Ka Pa’akai* case, the state land use commission failed to enter findings regarding the extent of the native Hawaiian practices, the effects of development on these practices, and the feasibility of protecting those uses. *Id.* at 48-49, 7 P.3d at 1085-86. The court held that the land use commission failed to properly investigate and protect Native Hawaiian rights. *Id.* at 53, 7 P. 3d at 1090, and that the commission violated its duty to take steps independently to protect cultural practices. *Id.* at 44, 7 P.3d at 1081. Similarly, over a decade later, the Hawai’i Supreme Court held that in considering the effect of interim in-stream flow standards (IFS) on Native Hawaiian practices, the state commission on water resource management “failed to enter findings of fact and conclusions of law regarding the effect of the amended IFS [5] on traditional and customary native Hawaiian practices in Nā Wai ‘Ehā, and regarding the feasibility of protecting any affected practices.” *In re Iao Ground Water Mgmt. Area High-Level Source Water Use Permit Applications & Petition*, 128 Hawai’i 228, 231-32, 287 P.3d 129, 132-33 (2012); *see also id.* at 245-49, 287 P.3d 129, 146-50.

In 2000, the State Legislature specifically amended HRS chapter 343 to ensure that impacts to “cultural practices” are considered. Act 50, 2000 Sess. Laws of Hawaii.

In enacting the provision, the legislature found that “there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii’s culture, and *traditional and customary rights*.” It recognised that “the native Hawaiian culture plays a vital role” in the preservation of Hawaii’s ‘aloha spirit” and that “Articles IX and XII of the state constitution, other state law, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.” Most importantly, it observed that:

the past failure to require native Hawaiian cultural impact assessments has resulted in the loss and destruction of many important cultural resources and has interfered with the exercise of native Hawaiian culture. The legislature further finds that due consideration of the effects of human activities on native Hawaiian culture and the exercise thereof is necessary to ensure the continued existence, development, and exercise of native Hawaiian culture.

See also Stand. Comm. Rep. No. 3298 (observing that, “although the Hawaii State Constitution and other state laws mandate the protection and preservation of the traditional and customary rights of native Hawaiians, the failure to require environmental impact statements to disclose the effect of a proposed action on cultural practices has resulted in the loss of important cultural resources. Your Committee believes that this measure will result in a more thorough consideration of an action’s potential adverse impact on Hawaiian culture and tradition, ensuring the culture’s protection and preservation.”)

Ka Pa‘akai, 94 Hawai‘i at 47 n. 28, 7 P.3d at 1084 n. 28 (emphases in original).

Although Scientific Consultant Services, Inc. prepared a Cultural Impact Assessment (CIA) of the dairy farm and vicinity dated April 2016 (Appendix H), it failed to thoroughly assess all the cultural impacts that would be created by the dairy. And curiously, very little of what is produced in Appendix H made it into the main body of the EIS. Nor is there much analysis of the cultural impacts that this dairy is likely to have. A cultural impact study must not only disclose the cultural practices of an area, but also the impacts to these practices from a proposed development.

While the CIA acknowledges that the “broad area constituting Māhā‘ulepū Ahupua‘a, has been, and is currently, used for traditional cultural purposes” by those who have “expressed a variety of concerns about impacts the proposed dairy may have which are indirectly and directly related to traditional cultural practices,” it nevertheless concludes that “the exercise of native Hawaiian rights, or any ethnic group, related to numerous traditional cultural practices including, gathering, access, cultivation, the use of traditional plants, and the use of trails, will not be adversely impacted by the proposed dairy.” Appendix H at 55-56. See also 4-33. The conclusion is based on the fact that “the project area itself is not being utilised for these activities,” (Appendix H at 55), but completely ignores constitutionally-protected access, which the dairy admittedly obstructs, limits, conditions, and/or restricts. See 4-19 (“Access into the valley is limited to minimise conflict with existing agricultural operations. HDF lands are accessible from Māhā‘ulepū Road or other agricultural roads, which are secured by farm gates.”); 4-20 (“Due to the limited public access...there will be little or no impact to public views”).

None of the concerns identified in the CIA regarding “restricted access to Māhā‘ulepū Ahupua‘a and to the adjacent coastal area, restricted access to the trails within the ahupua‘a, which are utilised to gather natural resources for cultural purposes, and restrictions on conducting traditional ceremonies within the ahupua‘a” is addressed by the EIS. Appendix H at 55. Likewise, none of the concerns “expressed in regards to impacts to the natural resources gathered and collected from the area resulting from the proposed dairy polluting the air, land, and

the water” including traditional cultural activities for “collecting specific terrestrial and marine resources and conducting ceremonies” are addressed by the EIS. Appendix H at 55. The DOH cannot in good faith accept an EIS that fails to preserve and protect customary and traditional native Hawaiian rights to the extent feasible, where the applicant fails to even contemplate feasible actions to reasonably protect native Hawaiian rights.

ACCESS ISSUES

Native Hawaiian rights are protected by Article XII § 7 of the Hawai‘i State Constitution. *Pele Defense Fund v. Pary*, 73 Haw. 578, 616- 621, 837 P.2d 1247 (1992); *Public Access Shoreline Hawaii v. Hawaii County Planning Comm’n*, 79 Hawai‘i 425, 442, 903 P.2d 1246, 1263 (1995) (“PASH”). The State Constitution provides that the:

State shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua‘a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights.

Haw. Const. Art. XII § 7.

Will the public be given an opportunity to review an access management plan for the exercise of constitutionally protected rights and access before the EIS process is completed?

How will Native Hawaiians be able to access historical sites and resources on which their customary and traditional practices rely? Will they be able to cross land within the project area to get to the historical sites and resources on which their customary and traditional practices rely?

Have all historic trails and/or roadways, including but not limited to the Pa‘a-Māhā‘ulepū Alahale, been located on the ground and mapped? This information should be in the EIS. The EIS should include historic maps that show all historic trails and/or roadways crossing the project area or accessible only via the project area. The EIS should discuss court decisions that have guaranteed continued public use of these resources.

The EIS should also disclose and map all roads owned by the government and all roads that the applicant or landowner is obligated to keep open through conditions, covenants, or other restrictions.

The EIS should address the legal propriety of requiring Native Hawaiian cultural practitioners to submit proof of liability insurance and/or liability waivers in order to access and/or cross through the project area to exercise constitutionally-protected traditional and customary practices and resources.

ARCHAEOLOGICAL IMPACTS

The EIS fails to undertake a serious effort to discover archaeological sites. It failed to rely on subsurface investigations, remote-sensing studies, or investigation of kama`āina statements to identify other buried archaeological sites and human burials.

View planes between heiau and other cultural sites must be preserved.

Buffers around historic sites must be identified, mapped, and adequately set out to preserve the integrity of those sites.

BURIALS

One of the stunning omissions of the EIS is a discussion of how burials, when discovered, will be treated. The protection of burial sites is deeply ingrained in Hawaiian culture. The need to protect such sites is also deeply entrenched in the law. Hawaii Revised Statutes of 1905 § 3196 provided:

If any person, not having any legal right to do so, shall wilfully dig up, disinter, remove or convey away any human body from any burial place, or shall knowingly aid in such disinterment, removal, or conveying away, every such offender and every person accessory thereto, either before or after the fact, shall be punished by imprisonment at hard labor for not more than two years, or by a fine not exceeding one thousand dollars.

See also today's HRS Chapter 6E. In *Sylva v. Waiulika Sugar Co.*, 19 Haw. 602, 609 (1909), the Hawaii Supreme Court held that a jury could award punitive damages for the desecration of graves. In *Neighbours v. Neighbours*, 65 S.W. 607, 607-08 (Ky. Ct. App. 1901), the Kentucky court held that under "current authority in this country ... the courts of law will recognise and protect [a burial]."

It is well documented throughout the EIS, that "[i]n Māhā ulepū, there were many Land Commission Awards," "many" of which "are tightly clustered within the ili of Kawaihoa, which is within the current project area." 4-32. Native Hawaiians commonly interred their dead near their homes, so it is probable that historic burials exist within this area. Nevertheless, the EIS fails to even acknowledge, let alone discuss, how these burials will be respected and protected. HDF fails to provide any assurance that such burials will be left in place, or protected, or respected. That failure is unacceptable.

Will the applicant make a commitment to keeping all inadvertently discovered burials in place? Place answer this question: yes or no.

SOIL AND WATER IMPACTS

There are culturally significant natural soil resources within 300+ acres situated in the HDF project area, including a loamy, water-retentive "grey hydro-morphic soil" (*Kalili*), that is recent as 1897, sustained kalo loi by native tenants. W. T. Hariguchi Farms maintains a kalo loi within the HDF project area. Due to the permeability of these alluvial soils, introduction of nitrates, ammonium, and residual "drifting" into these reserves from runoff and flooding is inevitable. HDF conceded as much based on its reversal of an earlier claim of "zero discharge."

In a June 2016 deposition for *Friends of Mahalepu, Inc. v. Hawaii Dairy Farms, LLC*, Civil No. 1:15-CV-00205-LMK-KJM, HDF Farm Manager James Garmatz (June 14, 2016) disclosed details of flooding inundating the kalo loi (under lease to Hariguchi Farms), on or about two days after Thanksgiving 2013 subsequent to a five-inch rainfall. Being that kalo is recognised as a high-value, culturally significant crop in Hawaii, what mitigation measures, if any, will be addressed to prevent dairy farm run-off from permeating these and adjacent beds (loi) with contaminant-laden discharge?

Also, HDF's adjacent animal cemetery plans are inadequate to prevent drift contamination in the aftermath of a 100-year weather event and associated cattle deaths. As Kaula is periodically subject to effects of tropical depressions; tropical storms; and hurricanes (the last two of which, Iwa & Iniki, caused intense winds, rainfall, flooding and storm damage), what measures (other than aerosolised ground distribution), will be undertaken to mitigate lagoon overflow, run-off and herd integrity?

As recent data has demonstrated a "High" water table (2 & 1/2 ft. to 3 ft. in dry season), as well as a direct link between well water, groundwater, the lens dimensions of the aquifer underlying the majority of the intended project site, please address the permeability of Dairy discharge into the aquifer and surrounding hydrology drainage affecting water quality.

The EIS is deficient in that it fails to address the subject of drift contaminants, oxygenation levels and increased turbidity from Dairy modifications effects upon aquatic, avian, edible limu, reef, wana, 'opili, loli, honu, monk seals and other marine life, in ditches, streams, wetlands, shoreline and ocean dilution dispersal. Such a study is requisite upon the applicant.

ALTERNATIVES ANALYSIS

HDF fails to consider as part of its "no-action alternative" the possibility of cultivating traditional crops, including but not limited to kalo, uala, 'ulu, and/or industrial hemp, to address

its food security objectives and/or energy objectives and use of these Important Agricultural Lands in the manner designated, namely for grazing or cultivation.

APPLICANT'S TRACK RECORD

The success of any mitigation measures is dependent on the track-record of the applicant. It therefore is critical for the EIS to discuss problems the applicant may have had in the past in fulfilling commitments and representations.

The EIS should fully disclose the nature of all litigation that relates to promises or representations made, the claims that were made, and the final disposition of all such cases. The discussion should be even-handed and not rely on self-serving statements.

To what degree has this applicant kept its promises in other EAs and EISs, or applications for government approvals for other projects it has sponsored?

Have all the mitigation measures mentioned in these documents been implemented?
Please identify any mitigation techniques implemented and/or detailed plans for mitigation with a specific timeline for such.

Have there been any violations of the law, citations or warnings issued by government agencies to the applicant? If so, please disclose particulars.

MITIGATION MEASURES

The Hawai'i Supreme Court has held that the public trust doctrine allows government agencies to issue permits only if the agencies must "ensure that the prescribed measures are actually being implemented." *Kelly v. 1250 Oceanside Pkws.*, 111 Haw. 205, 231 (2006) (internal citations and marks omitted).

Who decides whether HDF's activities satisfy the proposed mitigation measures? Who is in charge of ensuring implementation?

The EIS authors should use the active voice rather than the passive voice so that we know who is responsible for fulfilling promises.

The public trust duty cannot be met if the agencies charged with monitoring and enforcement are understaffed. Please fully discuss how the public can be assured that any proposed mitigation measures will be performed and will be effective.

Please describe the county and state monitoring and enforcement programs triggered by this project so that we can be assured that promises made will be kept.

How much staff does the State Department of Health have to provide monitoring and enforcement oversight for this project? How often can they be expected to visit the site?

RESPONSE TO COMMENTS

As the Hawai'i Supreme Court has observed, the "applicant must respond in writing and address all concerns and questions before proceeding with the development of the EIS. Once this phase of the process is complete, the applicant then begins preparation of the EIS." *Sierra Club v. Office of Planning*, 109 Haw. 411, 415 (2006)(emphasis added). *See also*, HAR §§ 11-200-15(D), -22(C) and -23.

Questions and concerns submitted to HDF about its proposed agriculture dairy use must be answered prior to the acceptance of the EIS. These questions include all the questions asked in this letter as well as other letters submitted by concerned citizens regarding HDF's proposed use, the resulting impacts of those uses, and its assessment of same.

Sincerely,

Kalamikumai Ka Makauliuli O Na Alii Hanohano
Kalamikumai Ka Makauliuli O Na Alii Hanohano

See attachment

- 1.) State of Hawai'i, Department of Health, 1250 Punchbowl Street, Honolulu, HI 96813. Contact: Laura McIntyre, (808) 586-4337
 - 2.) Group 70 International, Inc., 925 Bethel Street, 5th Floor, Honolulu, HI 96813.
 - 3.) Hawai'i Dairy Farms, LLC., P.O. Box 1690, Koloa, HI 96756-1690 Contact: Jeff Overton, (808) 523-5866, HDF@Group70int.com
- February 19th, 2015, Koloa, HI 96756

Comments submitted regarding HDF Environmental Impact Study (E.I.S.):

Aloha,

My legal and hereditary name is Kalanikumai Ka Maka'uili'uli 'O Na Ali'i Hanohano. I was born in, and am a native resident of Koloa, Kaua'i. I am established (SHPD), as a lineal descendant of the aboriginal Stewards (7th generation), of the Koloa Moku, or District, which includes Maha'uiepu. My Kupuna's "Anakala" or Uncle, Kaluhimoku Nakapa'ahu, was a noted native medicinal practitioner (Marvin Brennecke 1953), who gathered medicinals in Ma-he'uiepu and Pa'a. His father, Kallipoloahilani Nakapa'ahu, Ali'i Nui of Koloa District (Moku, owned, and resided on a nine acre parcel in Aweoweonui (Hidden Valley- adjacent to Ma-ha'uiepu). I have followed in his footsteps for more than a quarter century. As a native spiritual practitioner representing a registered Hawaii non-profit interfaith Ministry (Hui Hanai), continuing cultural practices and observances at Maha'uiepu, this Dairy will affect cultural resources that I am dependent upon. I proclaim myself to be a vested party-at-interest seeking intercession status.

As a participating member of the Ilioula'okalani Coalition, alert to incursions or intrusion on Cultural sites or practices; as Pastor of "Hui Hanai I ka Honua La'a" a registered non-profit Interfaith Ministry; as Steward of: "Malama Maha'uiepu" 501 c-3): "Friends of Ma-ha'uiepu" and Koloa 'Aha Moku Council, I do not speak for or represent those organizations, but share with them and desire address of their, and my, concerns.

I will be directly impacted by the Dairy installation introducing high volumes of nitrate rich untreated solid waste and urine affecting three precious qualities, to which I, and the Community have inalienable rights, that of Clean Water, Environmental contaminate protection, and Quality of Life.

Neighbors in the nearby communities of Kaua'i's South-Shore will also be impacted by the degradation of water quality (ocean & aquifers), contamination of soil, odors carried by prevailing winds, or lack thereof, biting flies, affecting residential and Visitor Destination "Quality of Life" issues along with economic collapse of one quarter of the Island's tax-base.

Land and aquatic life in the downslope and drainage watershed from the proposed site will be impacted by the inability of HDF to achieve complete containment of seepage resulting from the Dairy operation into the surrounding areas. This is substantiated by the NRCS Custom Soil findings commissioned, distributed, but not taken into consideration by HDF.

ISSUE of conflict w/ use of Group 70 conducting the E.I.S.: "Group 70" developed the existing Waste Management Plan and prepared architectural blueprints for all of HDF's proposed Dairy installation. As analysis of this Plan and projections has been reviewed by qualified independent experts to contain serious flaws and misrepresentations questioning the credibility of their research and facts, does it not stand to reason that in the interest of propriety and competency, that an unbiased third party conduct the E.I.S.?

HDF & "Group 70" have failed to address: The NRCS Custom Soil Study findings (6/05/14) determining that 50% of the proposed farm soil is at HIGH or VERY HIGH risk of run-off;

Issues presented in the **Mark Madison** review and report (submitted by Kawaaloa Corp).

Point by Point Specific issues needing to be addressed by the E.I.S.:

- 1: (Involving an irrevocable commitment to loss or **destruction of any natural or cultural resource**): **introduction of waste material and nitrate inundation will destroy viability of Valley floor's grey hydromorphic soil to birth and produce Kalo.**
- 2: (Curtailing the range of beneficial uses of the environment: (for plants, animals or humans): **Seepage from Dairy operation will irreparably damage viability of the (formerly established) Salt Pans: a sustainable native resource gathering practice unique to Hawai'i among Pacific Islanders.**
- 3: No comment at this time.
- 4: (Substantial affectation of the **economic or social welfare of the community or State**): **Pernicious odors, biting flies, noise pollution during seasonal events of wind cessation (Kona convective layer zone) beach & shoreline closures due to water bacterial counts plummeting property values, loss of Visitor business, Quality of life impacts with odors. Convention and accommodation cancellations, employment losses, Changes detrimental to the public good.**
- 5: (Issues that **substantially affect public health**): **Biting flies, Odors, Water (drinking & Ocean), contamination issues.**
- 6: No comment at this time.
- 7: (Involving a substantial degradation of environmental quality): **Impact of biting flies, odors, and bacteria from aerosolized and deposited manure, ammonium interaction, nitrate concentration buildup and seepage into proximate ditches and downslope watershed impacting Wetlands, Kalo cultivation, aquatic resources, reef, beaches, habilitation, Wilderness quality, as well as native, resident, and visitor recreational experiences.**
- 8: (Is individually limited but cumulatively has considerable effect upon the environment or **involves a commitment for larger action**): **The submitted Plan professes to initiate operations with an initial herd size of 699 (gestating cows, expanding to a milk-producing herd size of 2,000. The Plan fails to address the impact and implications of the increased bovine population distribution island-wide necessary to support the Milking herd.**
A reasonable extrapolation of the 1398 (adjustable for attrition), initial added population subsequent to birthing would result in approximately 50% heifers, the remainder would be channelled to Kaua'i's beef industry. Non-gestating, nascent, or pre-gravid cows would add to the supportive and alternative use population. With such increased impact from up to twice the projected herd size being distributed on island, **what plans are in place to process and distribute the increased volume, and what systems are developed to ensure and protect Public and environmental health as a result of the increased presence.**
- 9: (Substantially affects a rare, threatened, or endangered species, or **its habitat**): **The protected Hawaiian Blind Wolf Spider and it's amphipod prey co-exist in the substrate level of lava tubes permeating the impacted area. Nene, Limu, Ophi, Wana He'e, Loli, Honu, & Monk Seals, vegetation and sea-life important to Hawaiian culture and PASH resource management populations are at risk from run-off and inundation.**

10: **Detrimentially affects air or water quality** or ambient noise levels: Odors, biting flies, bacterial colonies, ambient noise during seasonal cessation of winds, penetration into public water supply, ammonium interactions with the ambient atmosphere affecting vegetative growth.

Issues of Water quality, contamination of public drinking water, penetration of contaminants into the aquifer, **soil and lava tube run-off projections calculated to include events such as the 1948 Forty-two day and 2006 30-plus day rain events.**

11: (Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water or coastal water);

Soil categorization by NRCS as High to Very High risk of run-off impacting Wetlands, beach zones, estuaries, tide-pools, reef, coastal and shoreline waters insure eventual widespread damage as suffered by New Zealand, Washington State, Wisconsin and New Mexico.

12: No comment at this time.

13: No comment at this time.

The 2001 Office of Hawaiian Affairs Report to Jennifer Dines of the Federal Communications Commission (FCC) identifies the Haupu Range (including it's Maha ulepu Valley) as a Hawaiian Spiritual Sanctuary and Mausoleum of Ancestral remains. Widespread native burials throughout the region including the single largest Burial Dune in the Pacific (Aweoweonu) establish qualification of "Sacred Spaces" designation as defined and protected under the 1978 Religious Freedom Act (American Indian [i.e., Indigenous natives/ Alaska: Hawaii/ American Samoa].

Unmarked sites, burial grounds, ceremonial "Wahi Pana", Sub-surface cultural layer material, proximate wetlands known but undisturbed, require a thorough cultural resources study and ensure mitigation measures to ensure protections.

Consider impact to and degradation of indigenous cultural use of natural land and aquatic resources protected under PASH.

Alternative uses of area: Restoration and encouragement of Kalo (Taro), cultivation and production of a natural resource (Kalo) qualifying for protection under the U.S. Supreme Court [1934]. "Religious Freedom" determination that "Catinite" (Pipestone), was a protected "Spiritual" natural element integral to established indigenous religious practices.

The Court codified protections ensuring that the metamorphosed natural ceramic conductive substance, religiously employed as a Spiritual conductor, would be protected and available to recognized tribal members at no cost using traditional seasonal harvesting techniques. (decision subsequently bolstered by President Clinton's 1978 Executive Order).

As it is well established that every part of the process in Hawaiian Kalo cultivation, preparation and ingestion is a religious act, in honouring "Haloa", a recognized cultural deity, the rare hydromorphic "plastic-like" clay soil providing the optimum conditions for Kalo cultivation qualifies for protections under "best and highest use" of the land as well as PASH protection as a rare natural resource culturally sustained in Religious practice.

(Similarly protected culturally used natural resources used in Religious practices include Awa (Kava), alae (mineral), "Ichmeich" (Indian Celery), and Peyote).

Alternative agricultural uses: Bio-mass generation. Sustainable energy production: endemic biodiversity and cultivation of medicinal herbs such as Cats-claw, Olena (Turmeric), crops of Taro, sweet potato or yams, conforming to the "highest and best" sustainable practices of land use.

Fails to address: Overflow discharge of effluent ponds resulting from tropical storm and hurricane rainfall amounts historically reoccurring with frequency over affected area with high to very high run-off potential.

Proximity of Ditch to Milking facility yard and "lot" sized rotating pens vulnerable to nitrate penetration. "Lots" of open rotating four to five acre fenced parcels, cannot sustain intended herd population size with adequate room, native and introduced grasses, subsequently requiring an estimated 28% supplemental imported grain based feed with no details as to it's source or GMO status. As such, it fits the definition of a "Feed Lot" (albeit rotating) operation subject to additional limitations, controls and restrictions on operation.

Employment of mechanized distribution of aerosolized manure with re-deployable equipment crossing or in proximity to ditches, well sites, or seasonal wetlands used by native endangered waterfowl is in conflict with reviews of current industry standards and practices.

Note: The American Public Health Ass. (also Canada & Michigan) have called for a Nationwide Moratorium on industrialized Dairy operations (2003) such as this present Plan. Does HDF contest or refute these findings? How do they substantiate this?

Implications of the totality of increased cattle populations on Kauai resulting from maintaining consistency of Dairy herd size, i.e., How many heifers, steers, cows (inactive or nascent), will be in addition to an eventual Milking herd of two thousand cows?

Issue of a flawed and inadequate Cemetery Plan failing to contain nitrate penetration into downslope watershed. Current projections fail to address aftermath of catastrophic events from weather or disease. Designation of a 694 foot double row of interments two feet apart cannot adequately provide sanitary containment. Furthermore, seepage and penetration into downslope watershed is inevitable and deleterious to the environment.

The watershed of Mahaulepu Valley (and HDF's proposed 578 acre industrial dairy site) comprises waters from the Haupu mountain range, the Wai'opiili Stream, as well as the irrigation ditches, all of which are "hydro-logically linked" as they emerge and converge at the Makauwahi Cave on their direct path to the ocean. Based on that critical feature, all waters being hydro-logically linked, how can HDF protect the wetlands, the endangered species, the reefs, the rare and sacred sites and the ongoing native Hawaiian cultural practices from contamination caused by the massive amounts of wet manure and urine produced daily even with their start-up herd of 699 pregnant dairy cows? Short of lining the entire surface of the proposed farm site, the established hydrological link between the various components of the Mahaulepu watershed make runoff, discharge and contamination unavoidable.

For the aforementioned concerns and issues raised, I urge that HDF agree to an alternative contractor to perform the E.I.S. and address of all issues raised or alluded to in these comments.

I again urge Olapua, HDF, and Grove Farm Co. to reconsider and relocate their intended Dairy operation to a more appropriate location.

Kalanikumai Ka Maka'uli'uli 'O Na Ali'i Hanohano
P.O. Box# 1551, Koloa, HI 96756
<mailto:hope@hawaii.rr.com>
(808) 332-0718

The proposed dairy farm will use water from Waita Reservoir for irrigation, which is also the water source for several other farmers and ranchers in the area, including a taro farmer. Non-potable water from Waita Reservoir, which uses water from upland streams, provided irrigation water to the sugar plantation that historically operated in the Māhā'ulepū area, and is used for recreational fishing. The reservoir is located west of the HDF site.

Potable water for the dairy farm will be drawn from deep groundwater wells that were installed by the sugar plantation that formerly operated on the site. The potable water will be used as drinking water for people working on the dairy farm and for the cows. As a result, the proposed action will advance both purposes of the public trust doctrine. The dairy farm will advance the important public interest in protecting and conserving agriculture in the State, including on important agricultural lands, and also further the goal of maximum beneficial use of the surface water and groundwater on those important agricultural lands.

Cumulative Impacts

The EIS Sections 4.20 and 4.26 address the potential cumulative effects of the dairy with up to 699 mature dairy cows and the contemplated herd of up to 2,000 mature dairy cows. The subjects addressed in the EIS cumulative impact assessment includes visual resources, archaeological and historical resources, cultural practices and resources, the surrounding environment, and economic factors. Technical studies addressing these subjects in greater detail are included as Appendices in Volume 2. With implementation of measures to minimize potential adverse effects, it was shown that the dairy will not generate adverse cumulative effects. Regulation of the development of the dairy and ongoing operations will be subject to the review and approval of State and County agencies.

Visual Resources

The County of Kaua'i General Plan identifies the HDF site as agricultural land in a region consisting of open space, parks, and conservation lands in the mountains and along the coast. The roadside views along the Kōloa Bypass Road to Po'ipū provide vistas of the rural landscape that remain from Kōloa's agricultural roots. The HDF site, while in keeping with the non-developed portion of Kōloa Bypass Road, will be visible to only those traveling the private access roads with authorization to access the privately owned agricultural lands surrounding the HDF site. EIS Section 4.5 addresses potential effects to public scenic views.

Approved Archaeological Study Including Burials Investigation

Traditionally, Native Hawaiians would occasionally bury their ancestor's remains near or under their house sites. This occurred more frequently in later pre-Contact times but was not a wide spread practice. Native Hawaiians would also bury many of their ancestors (makāāimāna) near the coast, and there are numerous examples of such throughout the island chain. SCS understands these patterns. In Māhā'ulepū, the only potential house sites were associated with a cluster of LCA's along the eastern side of the valley. SCS performed specific testing in these locations to identify the presence/absence of cultural materials and burials. No cultural materials or burials were identified through extensive testing of subsurface contexts.

It is very unlikely that burials are present in the project area, given the project area location, land use through time, and the lack of findings during the archaeological survey. However, the State of Hawai'i has rules which clearly address the inadvertent discovery of burials. Hawai'i Revised Statutes (HAR) §13-300 discusses Native Hawaiian burials as well as protocols when burials are encountered. Essentially, if remains are found and confirmed as human, all work in the area ceases and the SHPD is called to the site for further identification. The SHPD, in consultation with members of the Kaua'i/Ni'ihau Islands Burial

Council, is tasked with making the determination to leave the burial in place or re-locate the burial. Neither the land owner nor the archaeologist determines the final disposition of the burial. The rules and procedures are very specific toward Native Hawaiian burials identified in Hawai'i and the applicant's representatives (SCS) are extremely familiar with these laws.

The State Historic Preservation Division accepted the AIS on December 19, 2016 (Appendix G). SHPD concurs with the significance assessments and mitigation recommendations in the AIS, which identifies the 14 plantation-era sites within the project area as significant only under Criterion d (information potential). The letter states no further work is recommended for these sites (50-30-10-2251 through 2262). Two sites outside the Project Area, an enclosure (Site-2250) and a petroglyph complex (Site-3094), were assessed as significant under Criterion d (information potential) and e (cultural value). The SHPD letter states that the current proposed project will not affect these two sites, and no further mitigation is recommended for the project.

Soils and Waters

Complaints from the public citing the high levels of enterococcus in Waipili Ditch and public concerns about the proposed dairy prompted the Hawai'i State Department of Health (DOH) Clean Water Branch (CWB) to conduct a "Sanitary Survey" of the Māhā'ulepū sub-watershed and the adjacent Walkomo watersheds. DOH CWB conducted water sampling within the Waipili Ditch and areas upstream, and initiated a series of investigations into water quality issues. The Sanitary Survey findings resulted in an expression of concern by DOH CWB that the number of injection wells and cesspools in the adjacent Walkomo watershed, which includes Kōloa and Po'ipū, are impacting the waters of the Waipili Ditch.

Nutrients are provided from surrounding lands, where there is no management of manure from wild animals, decaying organic matter from trees and leaves, and other sources of nutrients. HDF will improve conditions by managing the pastures, creating a thick kikuyu grass that to control runoff and nutrient flow through the environment, and control animals through set rotations. Nutrients will be taken up by the pasture and will not be added past the agronomic need of the crop. This is all expected to increase soil health, improve runoff conditions, and control nutrient pass through.

HDF operations will follow the practice standards of the Natural Resources Conservation Service (NRCS). These practices include setbacks to minimize impacts to waterways. Physical setbacks will be created with fences installed 35-feet from drainage way (totaling 70-feet in width) to keep cows away from surface waters. Within the 35-foot setback, vegetation will be established to create filter strips to capture particulates during stormwater runoff. Another setback restricts application of effluent within 50 feet of the drainage ways; only irrigation water will be used as needed to maintain the vegetated buffer and pasture grass, keeping nutrient applications away from waterways. See Section 3.5.1, Paddocks, Fencing and Setbacks in the EIS, Elements of the Nutrient Management Plan developed for HDF are described in the EIS Section 3.5.4.2 *Nutrient Balance* and are included in the *Nutrient Balance Analysis for Hawai'i Dairy Farms* attached to the EIS as Appendix D.

Māhā'ulepū Valley has a unique geology from the surrounding Kōloa-Po'ipū area. Rather than the permeable karst lavas of the Kōloa volcanic series to the west, the valley floor is filled with alluvial material which generally extends about 60 feet under the surface. This material is highly weathered lava composed of dark brown to black silty clay and clayey silt. These layers are essentially impermeable and function as an aquiclude to separate shallow groundwater in the alluvium from the confined groundwater in the underlying volcanics.

In terms of nutrient loading, HDF will not apply nutrients past the plant uptake requirements and agronomic need. In both the committed scenario of up to 699 mature dairy cows and the contemplated scenario of up to 2,000 mature dairy cows, at a grass yield of 16.3 tons of DM per acre per year, there is simply not enough nitrogen nutrient from manure sources (as-excreted, liquid effluent, slurry applied) and a slight excess of phosphorus. HDF will not apply excess phosphorus because the herd size would be increased incrementally, to ensure no over-application of nutrients. Ultimately, commercial fertilizers will still be required. Nutrients are broken down quickly and absorbed by the crop. Cows are rotated so over-application of nutrients does not occur.

HDF has adapted the "New Zealand model" – pastoral-based rotational grazing dairy – to U.S. standards and best management practices. NRCS provides extensive guidance for agricultural operations to meet stringent standards including those under the Clean Water Act. Nutrient management is a key tenet, and the protection of waterways has been applied to the design of HDF paddocks using fencing to create large setbacks from drainages. It is important to emphasize that the agricultural ditch setbacks at HDF are designed 35-feet from each bank – for a total of 70 feet – to exclude cows from waterways. The setbacks are vegetated to create filter strips to effectively trap soil particles and organic debris from entering stormwater runoff. Setbacks and buffers from public drinking water resources are also incorporated into the farm design (EIS Section 3.3.2 *Agricultural Infrastructure* and Appendix D *Nutrient Balance Analysis*).

HDF has adequately planned its cemetery site and incorporated Best Management Practices required to protect water resources surrounding the HDF site. The anticipated animal mortality rate for HDF is typically less than 2 percent for productive cows. Greater numbers of animal mortality are expected for the young and stillborn calves, consisting of between 4 percent and 5 percent of the herd size. The animal cemetery is specifically located on the uphill side of the farm, in an area of relatively flat pasture. Site selection criteria for the cemetery paddock included protection from prevailing winds, and distanced more than 100 feet away from any drainage, 200 feet from any natural watercourse, 300 feet from any well, and more than 20 feet from any buildings. Within the cemetery paddock, pits will be sited based on soil suitability and slope. An area of approximately 5,000 square feet is needed for the animal cemetery at the contemplated herd size of up to 2,000 mature dairy cows, which is a fraction of a 3- to 5-acre paddock.

A containment berm will be created around the pit area to prevent both run-off on to, and from, the cemetery site. Six (6) pits, approximately 20' x 40' overall and 8 to 10' deep, are designed to accommodate carcasses of up to 150 cows and 360 calves or stillborn animals at the contemplated herd size. Individual pits within the area will be a minimum of 2-feet wide with a length appropriate to bury the carcass. Pits will be lined as required in accordance with NRCS Conservation Practice Standard, Animal Mortality Facility Code 316, to protect groundwater quality. Pits can be reused every 18 to 24 months, which is the typical time for a carcass to decompose.

Pit bottoms will be level, and carcasses will be placed in a single layer and covered with at least 2 feet of organic material. Multiple layers may be created with subsequent burials, or additional area within the cemetery paddock may be used as needed. Based on preliminary analysis, HDF does not anticipate encountering groundwater in the cemetery paddock area when excavating the pits. The paddock area will not be grazed.

HDF may also consider procuring and installing an incinerator to use for managing mortality on the farm. The incinerator would meet the appropriate guidance from NRCS Conservation Practice Standard – Animal Mortality Code 316 as well as State and EPA emissions regulations, to ensure no adverse air quality impact from the incinerator operations.

Waipoli Ditch receives runoff from the larger 2,700-acre Māhā'ulepū Valley sub-watershed, including the lands mauka and makai of the proposed dairy. The dairy site represents roughly 20 percent of the sub-watershed. Soil erosion within the dairy will be reduced by establishment of the thick grass ground cover for pasture and filter strips along drainageways. Over the long-term, the surface water quality in the agricultural ditches and Waipoli Ditch will be improved by active management of the dairy site.

There are no perennial streams in the Māhā'ulepū watershed. It is estimated that actual runoff into drainageways from HDF pasture will only occur when rainfall exceeds 0.8 inches per rain event. Additionally, groundwater contained in the shallow alluvial material fluctuates with seasonal high rainfall, and may rise to the surface through the deep ditches cut for sugarcane irrigation that remain on the HDF site. The potential for this seasonally high groundwater to intersect with the deep ditches occurs only in the mid-section of the HDF site due to the descending depth of the groundwater in the alluvium towards the makai end of the site. Over the past 30 years, rainfall events exceeding 0.8 inches occurred approximately 10 days per year.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kaua'i community, and will allow for evaluation of possible contamination sources.

Alternatives

As a part of the EIS, alternatives were evaluated that could attain the objectives of the action's purpose and need, and were compared with environmental benefits, costs, and risks of each reasonable alternative against those of the proposed dairy project. Of all the alternative actions and locations considered, the planned agricultural operations of Hawai'i Dairy Farms, is the only approach that achieves project objectives and meets each of the five Evaluation Criteria described in EIS Section 2.3.4. Further discussion of alternatives can be found in EIS Section 6.

EIS Preparers

Group 70 International, Inc. (Group 70) is responsible for the preparation and processing of the HDF EIS. The EIS was prepared in accordance with the requirements of Chapter 343 Hawai'i Revised Statutes and the "Environmental Impact Statement Rules" (Chapter 200 of Title 11, Hawai'i Administrative Rules). The environmental planning team at Group 70 has prepared several hundred Environmental Assessment and EIS documents over the past 40 years, and every document has been accepted by the responsible County, State and Federal agency. On numerous past EIS projects, the Hawai'i Chapter of the American Planning Association has recognized Group 70's professional work with Chapter awards for excellence in environmental planning. Part of the EIS scoping process involves Group 70's experienced team of technical sub consultants that are well-known and qualified in their respective fields of study. For this project, Group 70 is preparing the Hawai'i Dairy Farms EIS with the level of analysis required to properly evaluate and disclose the existing environmental conditions, probable impacts with mitigation, and potential cumulative and secondary effects.

Dairy Operations

The planned Hawai'i Dairy Farms will be the first in Hawai'i to employ rotational pasture-grazing. Benefits of pasture grazing includes, but are not limited to improved grass growth, even deposits of manure for fertilization, and reduced erosion and runoff. Also, the Dairy will feature modern facilities and practices, and will comply with all applicable Federal and State environmental standards.

FW: Comments on Hawaii Dairy Farms DEIS

From: Hope Kallai [mailto:iokahipath2@live.com]
Sent: Wednesday, July 20, 2016 9:30 PM
To: DOH.EPO <DOH.epo@doh.hawaii.gov>; pifwo_admin@fws.gov
Subject: Comments on Hawaii Dairy Farms DEIS

Aloha e Environmental Planning Office, State of Hawaii, Department of Health - Please accept my attached comments on the Hawaii Dairy Farms Draft Environmental Impact Statement. I am concerned that there is no Habitat Conservation Plan and Incidental Take License application for the listed species with potential for negative impact by this project with a federal nexus.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAI>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner

16 July 2016

Hope Kallai
POB 655
Kilauea, HI 96754
lokahipath2@iive.com

Virginia Pressler, M.D., Director
Laura McIntyre, Environmental Planning Office
State of Hawaii, Department of Health
1250 Punchbowl Street,
Honolulu, HI 96813
(808) 586-4337
doh.epo@doh.hawaii.gov

Jeff Overton, Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813
(808) 523-5866
HDF@Group70int.com

Hawaii Dairy Farms, LLC.
P.O. Box 1690
Koloa, HI 96756-1690
jim@hawaiidairyfarms.com

RE: Hawaii Dairy Farms, LLC. Draft Environmental Impact Statement
TMK:(4) 2-9-003:001 (portion); 006 (portion) , (4) 2-9-001:001 (portion)

Aloha e Department of Health:

Please reject the Draft Environmental Impact Statement¹ as prepared. There are significant and irreversible negative impacts to this project that are not discussed in the Draft Environmental Impact Statement, especially to the critically endangered Koloa troglobites, Pe'epe emaka'ole, the Kauai cave wolf spider (*Adelocosa anops*), the Kauai cave amphipod (*Speleorchestia koloana*) and the Hawaii cave pillbug (*Hawaiioscia rotundata*) found in the Koloa volcanic system of lava tubes, sinkholes, kipuka and caves.

- 1. DEIS incorrectly assumes no impact to trogllobites by:**
 - A. failing to acknowledge proximity of critical habitat and distribution of two federally protected species.**

¹ 2016-06-08-KA-SE-DEIS-Hawaii-Dairy Farms, LLC, Volume 1, prepared by Group 70 International May 2016 2,607 pages

The Kauai cave wolf spider and cave amphipod were listed as endangered species on January 14, 2000 by the U.S. Fish and Wildlife Service. The Hawaii Dairy Farms proposal will cause a "take" to endangered species and will harm the only potential habitat available for enhancement

The term "take" is defined as to harass, harm, shoot, wound, kill, trap, capture, or attempt to engage in any such conduct. "Harm" is further defined to include significant habitat modifications or degradation where it actually kills or injures listed species by significantly impairing essential behavioral patterns that may affect breeding, feeding, or sheltering (50 Code of Federal Regulations (CFR) 17.3). Critical habitat for the Kauai cave arthropods was designated on April 9, 2003 by the U.S. Fish and Wildlife Service 2003.

Figure 1 (below) of the **2006. Recovery Plan for the Kauai Cave Arthropods: the Kauai Cave Wolf Spider (*Adelocosa anops*) and the Kauai Cave Amphipod (*Speleorchestia koloana*)**² produced by the U.S. Fish and Wildlife Service shows the species restricted to "a relatively small area within the Koloa District" (2006 Recovery Plan, Page 2 pdf page 13).

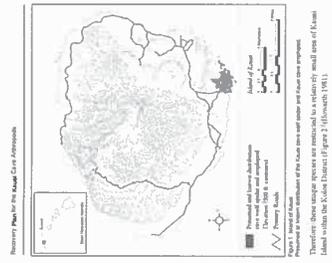


Figure 2 (below) of the **2006. Recovery Plan for the Kauai Cave Arthropods: the Kauai Cave Wolf Spider (*Adelocosa anops*) and the Kauai Cave Amphipod (*Speleorchestia koloana*)**² details the known and presumed distribution in the Koloa district, including portions of the Hawaii Dairy Farm project and adjacent lands.

² USFWS 2006. Recovery Plan for the Kauai Cave Arthropods: the Kauai Cave Wolf Spider (*Adelocosa anops*) and the Kauai Cave Amphipod (*Speleorchestia koloana*). U.S. Fish and Wildlife Service, Portland, Oregon. 64 pp.



Paddocks 301-309 appear to overlie the presumed and known distribution area detailed of the endangered cave species, as mapped in the 2006 Recovery Plan, not 0.75 miles as claimed by HDF above.

B. DEIS fails to consider recommendations of FWS as stated in the 2006 Recovery Plan³

- 1. to protect known populations of the Kauai Cave Wolf Spider and Cave Amphipod and their Subterranean Habitats from Human-Caused Destruction and Degradation.**

The DEIS lacks considerations to:

- 1.2 Protect/enhance plant communities over caves, subterranean cracks, and mesocaverns.**

Overlying perennial native plant communities should be protected from loss and degradation, and enhanced. Overlying plant communities primarily made up of non-natives should be removed and native plant communities restored using plants known to serve as food sources (e.g., *Capparis sandwicensis*, *Myoporum sandwicensis*, and *Erythrina sandwicensis*) for the cave arthropods. Partnerships should be formed with private land owners and State and other Federal agencies such as the Hawaii Department of Land and Natural Resources and the U.S. Department of Agriculture Natural Resources Conservation Service to promote habitat restoration over caves.

In addition, these overlying habitats should be protected from wildfire that kills perennial vegetation and often results in the invasion of alien grasses and loss of plants with roots that penetrate caves and provide food.

The 2006 USFWS Recovery Plan recommends re-establishing a native plant community, with long roots, to benefit cave-dwelling species, not alien grasses like kikuyu and guinea, as selected by HDF.

³ 2006 Recovery Plan Op Ch. p. 50

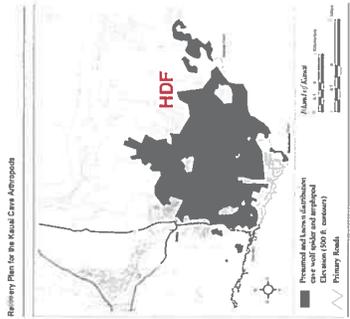


Figure 2. Presumed and known distribution of the Kauai cave wolf spider and amphipod.

In 4.11.1 Existing Conditions – Invertebrate Species and Pest Insects, the 2016-06-08-KA-5E-DEIS-Hawaii-Dairy Farms⁴ erroneously states:

Kōloa Lava Tube System. There are no known caves or lava tubes found on or adjacent to the dairy farm property. The known caves in the vicinity are approximately 0.75 mile from the closest point to the dairy farm.

Figure 6, Page 10) of the May 25, 2016 Waste Management Plan - Update⁴, as submitted by Hawaii Dairy Farms to the Department of Health June 1, 2016, details cattle concentrations on an updated Paddock Map on the southern project boundary, contiguous to Maunalepu Road and the existing taro lo'i. See excerpt below.

Updates to Waste Management Plan (May 25) Farm

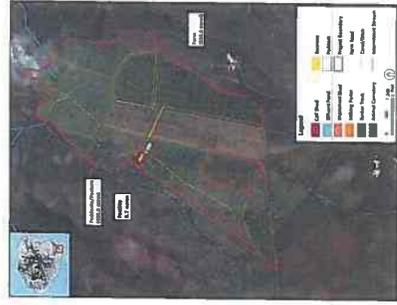


Figure 6 - Paddock Map

³ 2016 DEIS Op Ch. p. 135.

⁴ 2016 Updates to Waste Management Plan, Hawaii Dairy Farms, Mahāulepū, Kauai, Hawaii. Group 70 International. Red Barn Consulting transmitted to DOH June 1, 2016, 16 pages.

Page 30 of the **2006 Recovery Plan** states:

Europeans also introduced alien plants and converted vast areas into grasslands to support ranching operations, resulting in the destruction of cave food chains since grasses and many of the dominant, non-native perennials do not provide adequate root systems for herbivorous cave-dwelling species such as the amphipod.

The **2006 Recovery Plan** continues:

- **1.3 Prevent new introductions of non-native predators and competitors and carry out management actions that eliminate or reduce existing non-native predators and competitors.**

Yet, page 131 of the HDF DEIS⁶ states:

Forage Productivity. Kikuyu and Guinea grasses brought in as cattle forage decades ago will be sown to transform the former sugar cane fields into pasture. As the cows excrete on the Kikuyu thatch, nutrients are incorporated into what is effectively an organic net.

The **2006 Recovery Plan** furthers:

- **1.4 Prevent the introduction of harmful bio-control organisms and bio-pesticides throughout the State of Hawaii⁷.**

HDF plans to utilize dung beetles as a predator for their projected stable-fly infestation. The DEIS fails to consider impacts to sensitive troglobites from stable-flies or dung beetles.

Recommendations by FWS in the **2006 Recovery Plan** continue:

- **1.5 Prevent contamination of the cave from human-associated activities such as urban and agricultural runoff and soil percolation of pollutants or other harmful chemicals including harmful pesticides.** Inappropriate and/or overuse of chemical herbicides, insecticides, and fungicides can have devastating effects on species living in subterranean habitats (soils, caves, and mesocaverns). Heavy use of such chemicals should be avoided above and adjacent to caves or mesocavern-containing habitats. Pesticides that pose the least possible hazard should be used sparingly in areas known to support cave arthropods or their habitat.

⁶ 2015 DEIS Op Ch. p 131.

⁷ 2006 Recovery Plan Op Ch.

HDF details the chemical fertilizers they will be applying on their pastures in the **May 25, 2016 Updated Waste Management Plan⁸** submitted to DOH:

21) Section 6.2 – **Future Based Data:** Grass yields in the original WMP were projected for 20 tons of dry matter (DM) per acre per year and were the basis for all nutrient application rates and nutrient management planning.

HDF has approximately 18 months of grass trial data, for grass growth on over 70 acres of pasture on the project site. The grass trials simulate an expected grazing and 18-day rest period, with a 100% rest period after 18 months of grazing. The current yield (as of 2015) indicates a production of 16.3 tons of DM per acre per year, only after 18 months of trials. Once the pasture is established and has matured, yields of 20 tons of DM per acre per year, or even greater, are anticipated. However, for the purposes of the WMP, HDF has elected to utilize the current grass yield of 16.3 tons of DM per acre per year as the basis of nutrient application. Subsequent trials have proven that the field is at least capable of producing that much forage.

22) Section 6.2.2 – **Nutrient Mass Balance:** With the use of 16.3 tons of DM per acre per year in the nutrient mass balance calculations, the nutrient demand of the grass crop is reduced. In the overall farm ecosystem, less production of grass means that fewer nutrients are required from the crop. However, because the quantity of nutrients supplied by 699 mature dairy cows is not significantly impacted by the reduction in the grass yield to current data, the farm is not significantly impacted by the reduction in the grass yield to current data. Commercial fertilizer is still required to fulfill the grass nutrient need and maintain high productivity and soil health.

Nutrient Application	Year	Substrate Applied (lb/acre)	Final Annual Application (lb/acre)
Manure As-Excised	469.9	129,256	26,946
Liquid Effluent	283.1	11,980.8	2,366.7
Slurry Application	42.0	7,987.2	1,724.4
Total		149,224	31,277
Plant Nutrient Demand		499,299	87,217
Percentage from Animals			30.5%
Required Chemical Fertilizer		340,076	56,940
Percentage Demand from Fertilizer			64.2%

Consideration of the impacts of chemical fertilizer to the underground cave and lava tube system and their sensitive species is not included in the DEIS.

On page 53 of the **2006 Recovery Plan**, FWS further recommends:

- 2. **Improve or Enhance the Habitat of Occupied or Previously Occupied Caves through Landscaping that will Increase Subterranean Food Resources.**

2.1 Plant and maintain surface vegetation that will provide root systems for herbivorous and detritivorous cave dwellers with an abundant and sustainable food resource.

Caves are typically regarded as being food-limited and recent work conducted in one of the Koloa caves supports this. Possibly the most important management activity for the recovery of these species is to manage the overlying habitat to encourage the growth of appropriate plants through weed control and outplanting and landscaping. Irrigation will allow roots to penetrate into the cave and provide a source of fresh vegetation and detritus for the cave amphipods. Increases in the amphipod population or other cave-dwelling detritivores should result in increases in prey for these spiders. To the extent possible, efforts should be made to outplant native and indigenous, nontoxic plants to enhance subterranean habitats for native cave-dwelling species.

The Koloa Karst system is as unique as the endangered species that inhabit the caves and lava tubes. In 1997 the International Union for the Conservation of Nature decided to not include lava caves and other forms of pseudokarst in its publication titled "Guidelines for Cave and Karst Protection", however the unique pseudokarsts in the Koloa Lava Tube System in Hawaii were included as the only

⁸ 2016 Updated WMP Op Ch. p 16.

pseudokarsts in the world included in the Annual Top Ten List of Endangered Karst Ecosystems (Belson 1999)⁹.

The Koloa Lava Tube System in the southeast corner of Kauai near the towns of Koloa and Poipu is one of the most threatened faunal communities in Hawaii. This pseudokarst community contains at least three endemic cave species. Two of these species the no eyed big eyed wolf spider and a terrestrial amphipod are currently being considered for listing under the U S Endangered Species Act. The third endemic species is a recently described terrestrial isopod. Other species that are found within these caves include cockroaches, termites, earwigs and springtails. The system is threatened by agriculture, urbanization, refuse dumps, deforestation and mining. These factors alter the surrounding lands and deteriorate the quality of water entering the cave and inevitably harming the local species as well as affecting the drinking water for humans. Another concern is the invasion of alien species which could potentially extinguish the native species. Local groups interested in the conservation of the Koloa Lava Tube System include the Hawaii Speleological Survey, the Hawaii Conservation Task Force of the National Speleological Society, the Pacific Islands Ecosystem Office of the USFWS, and some local government agencies. Public awareness will encourage both the protection of these caves and the federal listing of the threatened species living within these caves. It will also assist in the establishment of research to monitor the effectiveness of protective management strategies.

The DOH had determined that irrigation water will reach Waiopii Stream and the Pacific Ocean¹⁰. It is not a matter of "if", it is a matter of "when". Their estimates include a less than 2 year Time of Transit unless there are lava tubes!

This groundwater time of travel assessment does not account for fast travel paths associated with karst type geology and lava tubes¹¹.

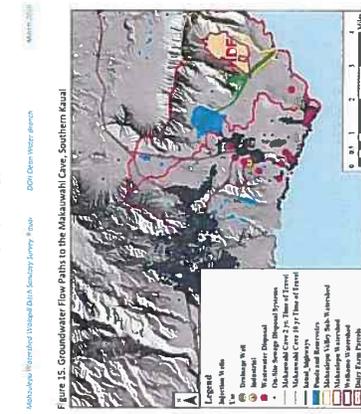


Figure 15. Groundwater Flow Paths to the Makalei Cave, Southern Kaula
 This map of southern Kaula shows the flow paths to the Makalei Cave (located near the end of the dark green line) Groundwater from the up-gradient end of the light green flow path will take about 10 years to reach the cave. Groundwater from the up gradient end of the dark green flow path will take about two years to reach the cave

⁹ 1999. Dr. David C. Culver. Karst Waters Institute, Ten Most Endangered Karst Communities for 1999

¹⁰ 2016 Māhalepū Watershed-Waiopii Ditch Sanitary Survey, Kauai, Part 1 Prepared by Clean Water Branch Hawaii, Department of Health March, 2016. 105 pages.

¹¹ 2016 *ibid.* p. 47.

The Koloa series volcanics is a lace-work of multi-level underground tunnels, caves, sinkholes and pukas. Only those large enough for a person to squeeze into have been surveyed, resulting in an apparent disconnected, blind species throughout it's ~5 square mile range. There is a great probability of underground connectivity throughout the probable habitat, as evidenced by the water transit time mapping above, hopefully with populations of endangered cave fauna.

Waiopii Stream system is connected to the Makauahi cave, which houses the endangered assemblage of trilobites. Manure-laden irrigation water will kill the endangered trilobites in Makauahi Cave. HDF pasture grasses and manure irrigation will not enhance cave habitat. It will destroy the balance necessary for the endangered assemblage of species and eliminate potential habitat from future translocation and population enhancement projects, as outlined in the 2006 Restoration Plan. This proposed dairy will likely cause the extirpation of endangered cave species and the removal of 500 acres with potential for consideration for habitat enhancement for these severely range-restricted cave species

W.T. Haraguchi Taro Farm grows wetland taro on 38 acres, surrounded on three sides by the HDF project. The Discussion in the DEIS includes the following from the Kauai Dairy Farms Biological Surveys:

Four of the five endangered birds recorded during the course of this survey were concentrated in or close to the taro cultivation site located on the southern central part of the property, though not part of the proposed dairy operations, were waterbirds: Hawaiian Duck, Common Gallinule, Black-necked Stilt and Hawaiian Coot (Figure 5). Nēne were also recorded close to the taro loi, but were also encountered at other locations on the property, and could in future be expected to use resources anywhere on the site with fresh grass. The majority of the Hawaiian Ducks recorded were seen either on the Māhalepū Reservoir located outside of the dairy operations area on the northeast corner of the property (Figure 1), or flying over the greater site or within the taro loi¹².

Page 131 of the DEIS continues:

4.10.2 Probable Impacts and Mitigation Measures - Fauna Impacts that would be considered significant related to fauna could include:

- Disturbance or displacement of endangered species habitat during construction; and
- Long-term disruption of fauna on site and nearby as part of on-going dairy operations.

Short-term Impacts and Mitigation – Fauna

There is no critical habitat for endangered species in the upper Māhā‘ūlepū Valley. Four species of endangered waterbirds have been recorded on the site, though the area does not provide critical habitat. Seabirds that nest in upland areas of Kaua‘i may overfly the site; outside lights used at night will utilize shades to protect against uplighting to prevent possible disorientation of the birds.

Short-term impacts for waterbirds and seabirds could be posed by construction activities, such as clearing and grubbing, which have the potential to disturb nesting waterbirds, nests, eggs and young. There also is the potential for interactions between endangered waterbirds and construction equipment, vehicles and construction personnel.

Waterbirds disturbed when nesting may abandon their nest, eggs and to a lesser degree chicks. Nēnē nest in the general Kōloa area and the habitat present on parts of the site is suitable for Nēnē nesting potential impacts to this species are similar to those discussed for waterbirds though Nēnē may utilize areas far from water to nest, if adequate shrubbery exists. Increased vehicular traffic associated with construction activities also increases the risk of birds being run over or hit by vehicles, within the dairy site.

Measures will be adopted to avoid potential seabird and Nēnē goose collisions with fences and structures. Potential measures include lowering construction cranes at night, using conservation fencing to protect specified areas, marking tall structures and fencing with white visibility polytape, limiting nighttime lighting, and shading any outside lights used at night.

Even though the DEIS admits endangered waterbirds are present, there is inadequate consideration for impacts by FWS, the agency tasked with their management.

The DEIS recommends developing an Endangered Species Protection Plan after buildout. Under the Endangered Species Act, impacting actions must be considered antecedent to the impacting actions.

Dairy Operations

Following build-out and the start of Dairy operations we recommend that the following recommendations be implemented:

- Develop an Endangered Species Protection Plan, the plan would include all of the topics outlined above. The material would be presented in more detail and with the rationale for why following those BMP's is necessary to ensure that Dairy operations do not result in deleterious impacts to protected wildlife. The Plan would also include these additional topics:
- Endangered Species Identification with photographs and description of their habitats, and likely areas on the property where they are most likely to occur and/or to nest
- Employee endangered species training, provided both in writing and as a PowerPoint presentation for use in training new personnel and annual updates of training
- Predator control program
- Downed seabird, and injured waterbird response protocols²

Impacts to endangered species, including waterbirds on contiguous properties, must be considered by the Fish and Wildlife Service, not the project developers, after buildout.

Please reject the DEIS prepared for the Hawaii Dairy Farms. LLC at Mahalepu and the Conservation Management Plan prepared by NRCS.

The procedures of the Endangered Species Act have not been followed and alternatives to this project have not been adequately considered. There will be water quality impacts to the groundwater table, Waioipi Stream and the Pacific Ocean. This DEIS, substantially altered since release, should be rejected.

Mahalo,

Hope Kallai



24 July 2016

Hope Kallai
POB 655
Kilauea, HI 96754
lokahipath2@live.com

Virginia Pressler, M.D., Director
Laura McIntyre, Environmental Planning Office
State of Hawaii, Department of Health
1250 Punchbowl Street,
Honolulu, HI 96813
(808) 586-4337
doh.epo@doh.hawaii.gov
HDF@Group70int.com
jim@hawaiidairyfarms.com

RE: Hawaii Dairy Farms, LLC. Draft Environmental Impact Statement
TMK:(4) 2-9-003:001 (portion); 006 (portion); (4) 2-9-001:001 (portion)

Aloha e Department of Health:

Please reject the Draft Environmental Impact Statement¹ as prepared and consider the following 8 comments:

1. This DEIS is not consistent with federal or state Office of Conservation and Coastal Lands management practices. There are significant and irreversible negative environmental impacts to this project that are not discussed in the Draft Environmental Impact Statement, and appropriate agencies have not been contacted for comment and There is no US Army Corps Of Engineers and/or a project-specific DOH Section 401 Water Quality Certification and a Coastal Zone Management (CZM) Federal Consistency determination, nor can there ever be for this flawed project which admits manure-laden water will enter the Pacific Ocean. There are protected species present, not properly considered by Section 7 consultation of the Endangered Species Act which requires Federal agencies to ensure that actions they carry out, fund, or authorize do not destroy or adversely modify critical habitat to the extent that the action appreciably diminishes the value of the critical habitat for the survival and recovery of the species.

¹ 2016-06-08-KA-5E-DEIS-Hawaii-Dairy Farms, LLC, Volume 1, prepared by Group 70 International, May, 2016. 2,607 pages.

2. Māhā'ulepū has unique significant, unique and irreplaceable resources, including wetlands, unique landforms, and endangered species and is part of a connected network of historical, cultural and biological resources. In 2006, at the request of Senator Daniel K. Inouye, the U.S. National Park Service conducted a reconnaissance survey creating a park at Māhā'ulepū and published **Māhā'ulepū, Island of Kauai, Reconnaissance Survey.**²

NPS gave the area a priority ranking of 1, outstanding and/or unique examples of geological and ecosystem features

"the lands of Māhā'ulepū are among the most interesting areas in the State both geologically and biologically."

In accord with established NPS planning criteria, this report³ examines these natural and cultural resources to provide a preliminary evaluation of their significance, and a preliminary evaluation of the suitability and feasibility of helping to protect them within the framework of the national park system. These evaluations are based on limited site visits, research and consultations conducted by staff of the NPS Pacific West Region Honolulu Office in 2007, and are neither final nor definitive. They serve as background material for Senator Inouye as he considers whether to seek Congressional authorization for a full-fledged study of resource protection alternatives for Māhā'ulepū and surrounding areas.

Māhā'ulepū, a focus area for this reconnaissance survey, was evaluated in an NPS Natural Landmarks Survey of the Hawaiian Islands in 1981. That survey concluded that "the lands of Māhā'ulepū are among the most interesting areas in the State both geologically and biologically." It gave the area a priority ranking of 1, applied to areas that "include outstanding and/or unique examples of geological and ecosystem features characteristic of the Hawaiian Islands and which encompass several such features." (NPS 1981).⁴

including, NPS continued in their Reconnaissance Report:

Litified Dunes⁵

The Māhā'ulepū coast features a remarkable array of lithified dune features that lie atop the much older Kōloa and Waimea Canyon lavas. First formed when sea level was about 60 feet lower than today, they accumulated over the last 350,000 years, and are still dynamically changing. Extending from below sea level to as high as 500 feet above it, their layers reflect global cycles of glaciation and sea level change. Transitions between layers are marked by depositional and erosional soils that settled there during glacial periods, when sea level dropped and the shoreline lay as much as a mile farther out than it does today. The dunes contain plant and animal fossils that tell the stories of their time.

² 2008 U.S. Department of the Interior, National Park Service Māhā'ulepū, Island of Kauai, Reconnaissance Survey, 79 pages.

³ 2008 NPS, . . . Ibid. Page 5 of 79.

⁴NPS, Ibid Page 10

⁵ NPS, Ibid Page 19.

The dunes vary in their degree of consolidation and weathering according to age. The oldest and most thoroughly cemented layer, the Punahoa member, occurs near Hā'ūla and Papamō'ī and covers most of Punahoa Point. It is faced by caves and contains fossils of land snails and plant roots. Mid-range layers (Pā'o and Makawehi members) are moderately or well cemented, with fossils of land crab burrows and plant roots. The loosely cemented Pā'ā dunes that run northeast from Makawehi Pt. toward Punahoa comprise the youngest Māhā'ulepū member. Formed 4,000-6,000 years ago, they contain numerous fossils including land crabs, crab burrows, plant roots, land snails and birds. (Blay & Siemens 2004)

Fossils

The Māhā'ulepū formation is an exceptionally rich ground for avian and other fossils. According to Smithsonian Institute researchers, the majority of significant avifauna fossils found in Hawai'i were collected along this coast. Many were documented in the 1970s and 1980s, a period when the dunes were active and shifting, exposing pockets of fossils, including bones from three species of goose, a long-legged owl, and a flightless rail. Though vegetation has since partially stabilized the dunes, portions of loose limestone still sometimes break off to reveal new and startling fossil finds. (James 2007)

An adjacent limestone cave/sinkhole that is part of the lithified dune system lies just inland of Punahoa Point. Paleocologists excavating there have discovered an unparalleled array of plant and animal fossils and human remains from both pre- and post-contact Hawai'i; these are described later in this section (see Makauwahi Cave, below and in Section 4.6) Fossils were also found at a sand quarry site next to the cave.

Makauwahi Cave and Sinkhole⁶

A large limestone cave system, hollowed out by groundwater, permeates the dunes of the Māhā'ulepū Formation. The best known part of this cave system is the Makauwahi cave and sinkhole, located on Grove Farm property just inland of Punahoa Point. It is the state's only solution limestone cave (OSP 1992), and has been described as "the largest limestone cave complex, the richest fossil site and the oldest dated ecological site in the Hawaiian Islands." (Hoopajā 2006). Discoveries at Makauwahi were featured in public television's 2001 NOVA series on worldwide species extinction.

In the early Holocene, the Makauwahi Cave was entirely roofed and had a dry floor. But as sea levels rose the nearby ocean increasingly breached the cave. About 7,000 years ago the roof at the center of the cave collapsed, forming a sinkhole open to the sky, and internal collapses sealed the cave off from the sea. Groundwater filled the cave and created a lake. During the millennia that followed, natural soils, sand, bones, plant remains, shells, and human artifacts and debris from the surrounding area swept into the sinkhole lake, building up thick layers of a peat-like substance that eventually turned the lake into a swamp. (Burney & Kikuchi 2006)

Today the sediments are 10 meters deep at the sinkhole's center, and the sinkhole floor sits 1-2 meters above sea level.

A coating of silty clay—deposited mostly during the 20th century—cloaks the earlier peat-like strata. The water table, fed by underground springs, sits just below the clay surface. The sinkhole's sheer walls range in height from 6 to 25 meters, forming an irregular opening to the sky that measures 30-35 meters across. (Burney et al. 2001)

Cave passages connect to the north and south ends of the sinkhole. The south passage leads to culturally sensitive areas and is protected from public access. The north passage, where researchers

and visitors enter the cave, has a crawl-in entrance through a sheer limestone bluff bordering Wai'ōpili Stream. page 22

Sediment layers in the cave chronicle Hawai'i environment, lifeforms and geological events from 10,000 years ago up to the present. The site is exceptional partly because of its excellent stratification, and also because of its unusual degree of preservation of materials that normally perish. The peat's neutral pH, created by the combination of fresh water and limestone, allows for preservation of minute pollen grains as well as bones and shells; one fossilized but intact yam was even uncovered. "This is like a giant pickling jar. Leaves, whole tree trunks, extinct land snail shells, bird bones, seeds, fish with scales still on — they're all remarkably preserved" (Burney D., quoted in Hoopajā 2006)

To protect this unique resource and make it available for research, the private landowner leases the sinkhole and 17 acres around it to the nonprofit Makauwahi Cave Reserve. Research at the site began in 1992 and first received federal funding in 1996. Sponsors have included National Science Foundation, NOAA, National Tropical Botanical Garden, Fordham University, the Smithsonian Institution, USDA, Kaua'i Community College, and the National Geographic Society.

Researchers have collected cores throughout the site; described ten stratigraphic units based on age, sediment, and the fossils and artifacts found; and excavated in three pits to depths as much as 5 meters below the water table. To date, they have documented findings from over 200 cubic meters of sediment. According to the lead researchers on site, "Nearly 10,000 years of sedimentary record ... has been analyzed for vertebrate bones, invertebrate shells, plant macrofossils, pollen, diatoms, sedimentology, and in the upper layers, human artifacts." Their finds, often cited in journals and featured in public media, are documented in Burney and Kikuchi (2001) and Burney et al. (2001), and are summarized below. Excavations at Makauwahi have uncovered fossils of 45 species of birds. Fully half of these are extinct, and seven or eight are species not previously documented by science. They include along-legged owl that ate fellow birds; a newly discovered extinct species of bat; flightless grazing birds the size of turkeys; a moa nalo (lost fowl) with a jaw like a turtle; and a tiny duck that fed at night and had eyes set unusually far back on its head. Other finds are nesting boobies, gulls, several forest birds, and the endangered Laysan duck, which still exists elsewhere in the Hawaiian archipelago but was not previously known to inhabit Kaua'i.

Plant fossils uncovered at Makauwahi are equally surprising. The cave strata yield seeds and pollen of many plant species which today are rare and seen only at higher elevations, and which were previously assumed to be suited only to Hawai'i's cooler, wetter upland and mountain areas. Their appearance in significant numbers in core samples from Makauwahi is leading scientists to reconsider these assumptions, and to examine the possibility for extensive native plant restoration efforts in coastal areas.

Other finds include 14 species of extinct land snails, seen in large numbers in lower cave layers but entirely absent in later strata. Their disappearance correlates with the arrival of the Pacific rat, which is believed to have landed in the islands with the first Polynesians. Earliest evidence of rats in the cave layers is dated at 1039-1241 A.D.

Hawai'i's native species disappear from Makauwahi's successive sediment layers in stages that reveal much about human interaction with the island environment. Arrival of people, rats and pigs corresponds with rapid disappearance of large snails, large flightless birds, and certain plants. A second stage of species loss ensues as Polynesian settlers alter the landscape, eat some native

⁶ NPS, Page 20.

species, and introduce new ones. Extinction proceeds apace when Europeans arrive: they introduce goats and cattle, import new species for agriculture, rapidly use forest resources, and alter the landscape in ways that dramatically contribute to erosion and lowland sedimentation.

Endangered Species: Kauai Cave Wolf Spider and Kauai Cave Amphipod⁷

Even today, a drama of potential extinction is playing out at Mākauwahi and other caves in the Māhā'ulepū Formation. The cave system is designated Critical Habitat for the Kaua'i cave wolf spider (*Adelocosa anops*) and the Kaua'i cave amphipod (*Speleorchestia hanamā'ūlana*). Only a few known populations of these species remain: all are small, and all occur in Mākauwahi or its immediate vicinity. The U.S. Fish and Wildlife Service is helping to fund plant restorations atop the cave area, in order to foster the native plants whose roots extend downward to the cave ceilings, potentially serving as food for the endangered arthropods (Henry 2007).

4.2.1 Coastal Vegetation⁸ & Endemic Plants

Hawai'i's native coastal strand vegetation—an array of plants unique in the world—has been destroyed or seriously degraded on beaches throughout the state's inhabited islands. Along the shoreline of the study area, the fact that public access is relatively limited and adjacent land remains undeveloped provides some protection for this plant community. A wide variety of native coastal flora still grows here, despite the extensive presence of non-natives such as ironwood and koa haole. NPS staff noted, U.S. Fish and Wildlife Service has designated Critical Habitat along the entire Māhā'ulepū shoreline for the endangered 'ohai (*Sesbania tomentosa*).

Three rare plants are found at Mahaulepu: Pua pilo or maiapilo, *Capparis sandwichiana*; 'ānaunau, *Lepidium orbiculare*; and . Nama, *Nama sandwicensis*. Nama and puapilo were used medicinally by Native Hawaiians.

Other endemics (species found only in Hawai'i) include Hawaiian cotton (*Gossypium tomentosum*); beach spurge (*Chamaesyce degeneri*); pa'uohi'iaka (*Jacquemontia ovalifolia*); koki'o (*Kokia kaua'iensis*); nehe (*Lipochaeta integrifolia*); ma'oli'oli (*Schiedea* sp.); noni tree (*Morinda citrifolia*); the tree *Munroidendron racemosum*; two species of loulou (*Pritchardia* cf. *minor*, *Pritchardia elmerroic-demibinsoni*); and the Hawaiian ceper (*Capparis sandwichiana*) and hinahina kahakāi (*Nama sandwicensis*), both designated as USFWS Species of Concern.

Native plants gathered from the Māhā'ulepū Ahupua'a, for traditional uses include: 'aweoweo, maile, mokihana, 'ohi'a 'ai, matapilo, hinahina, hinahina kahakāi, limu kohu, mokihana, maile oli, pa'uohi'iaka, and various native fruits and limu. Non-native plants collected from Māhā'ulepū Ahupua'a for traditional use include the seeds of black eyes susans, cat's claw, and Java plum. These plants are used as medicines, in lei making, in ceremonies, traditional dance, and as food resources

Native Birds⁹ NPS staff recorded nine native bird species while on the reconnaissance and documented another seven via research or by interviews with local biologists. Of the total, seven are endemic at the species or sub specific level, five are indigenous, and the remaining four are migratory birds that winter in Hawai'i. Five of the seven endemic species are designated by USFWS as Endangered, and one as Threatened.

The endemic Endangered birds known in the study area are the Hawaiian coot ('alae ke'oke' o), common moorhen ('alae 'ula), Hawaiian duck (kolou), Hawaiian stilt (ae'o); and Hawaiian goose (nene). All but the coot and the nene were observed by NPS during the site visit.

Large Marine Vertebrates¹⁰ The beaches and nearshore waters of the study area are home to three important large marine vertebrates: the endangered Hawaiian monk seal, known in Hawaiian as 'ilio holo i ka uaua (*Monachus schauinslandi*); the endangered humpback whale or kohala (*Megaptera novaeangliae*); and the threatened green sea turtle or honu (*Chelonia mydas*). All three were sighted during NPS's March 2007 visit.

Hawaiian Monk Seal Endangered Hawaiian monk seals regularly haul out on the beaches of the study area to bask. During the brief NPS field reconnaissance we observed adult seals resting onshore at Kawaihoa Beach and at Kīpū Kai. Successful monk seal puppings occurred at Māhā'ulepū in 2000 and 2007, at nearby Po'ipu Beach in 2000 and 2001, and at Kīpū Kai in 2006. The Hawaiian monk seal is one of only two mammals endemic to Hawai'i, and the most endangered marine mammal unique to U.S. waters (KMSWP 2007). In 1976 it was declared depleted under the Marine Mammal Protection Act, and endangered under the Endangered Species Act. Despite these protections, seal populations plummeted. An estimated 1200 Hawaiian monk seals remain alive today; experts predict there will be fewer than 1000 within five years (NOAA 2007b).

4.4.2 Fishes¹¹ Kaua'i residents describe the nearshore waters of the study area as a "prime fishing area." Telltale pipes for holding fishing poles are embedded at favored sites along the shoreline. Fish abundance is also implied by the presence of monk seals—the seals feed on reef fish as well as octopus, lobster, and eel.

Fish fauna offshore of the study area appear similar to those seen at other shallow water sites throughout the Hawaiian archipelago. Snorkel fish surveys by trained volunteers for the Reef Environmental Education Foundation recorded 24 species of fish at Kawaihoa Bay (Māhā'ulepū), and 43 species at Kīpū Kai. During the site visit NPS noted eight marine species, and an additional eight appeared in records kept by proprietors at Kīpū Kai.

4.4.3. Algae¹² NPS observed and identified 23 algal taxa from shore and at wading depth during our brief site visit. Based on the locations we saw, algal and benthic invertebrate cover appear to be in equilibrium throughout the study area. We saw no invasive or alien algae. A 2007 limu inventory along the Māhā'ulepū coast by a local biologist reportedly noted small amounts of invasive hypnea but an otherwise diverse and healthy array of species.

⁹ NPS. *Ibid.* Page 26

¹⁰ NPS. *Ibid.* Page 30.

¹¹ NPS. *Ibid.* Page 33.

¹² NPS. *Ibid.* Page 33.

⁷ NPS. *Ibid.* Page 23.

⁸ NPS. *Ibid.* Page 23.

The only indication of algal overgrowth observed by NPS is on shallow, gently sloping rocky intertidal benches, where cover is dominated by limu kala (*Sargassum echino- carpum*) or a diverse assemblage of foliose and turf algae. Where limu kala dominates, other algal species present include *Asparagopsis taxiformis*, *Dicyota sandvicensis*, *Dicryosphaeria cavernosa*, *Laurencia* sp., *Padina* sp., *Turbinaria ornata*, *Almofeltopsis coccinea*, and *Wrangelia elegantissima*. On large boulders exposed to strong waves, crustose coralline red algae are particularly abundant.

Limu is a valued food source in Hawai'i. Caretakers of Kīpū Kai report that during low tides Kaua'i residents arrive by boat to glean for limu kōhu (*Asparagopsis taxiformis*) and other edible algae. Evidence of excessive harvesting and poor harvesting of limu kōhu is reported along the Māhā'ulepū coast.

A species list of algae sighted by NPS during the survey appears below in Appendix 6.2.5. The list reflects the survey's limited scope and should not be considered comprehensive.

3. Wetlands and protected wetland species will be negatively impacted by this HDF commercial cattle project. Commercial cattle concentrations are not compatible with waterbirds, cave dwelling species and endangered plants.

Hydrological Resources¹³ The study area lands encompass portions of five Kaua'i watersheds: Hulē'ia, Puali, and Nawiliwili in the area north of the Hā'upu ridge; Kīpū Kai at the ridge's east end; and Māhā'ulepū from the ridgeline southeast to the coast. Collectively these watersheds feature one perennial stream at Hulē'ia; intermittent streams at Māhā'ulepū, Kīpū Kai, and Niūmalu; a mosaic of varied wetland habitats; and two major freshwater aquifers. Māhā'ulepū

The portion of Māhā'ulepū watershed that lies within the study area stretches from the Hā'upu ridgeline southward through Māhā'ulepū valley and eastward to the coast.

Agricultural operations began in the mid-1800s in Māhā'ulepū valley; its intermittent streams and wetlands were long ago modified for irrigation purposes. The landowner Grove Farm operates a water system that includes wells, ditches, tunnels and reservoirs. Māhā'ulepū Reservoir, at the back of the valley, is part of that system. Both it and the County-owned Pu'u Hi reservoir (at the very southern end of the study area) serve as important attractors for Hawai'i waterfowl. Irrigated taro lo'i in the valley provide additional waterbird habitat. A broad natural depression in the valley also fills with water after heavy rains and temporarily draws waterbirds in large numbers.

This "broad depression", mapped as a swamp on the Monsarrat map of August 8, 1896, near a concentration of Mahaulepu kuleana and lo'i, is shown excerpted below, right in the middle of the proposed HDF paddocks.



Figure 6, from the HDF Updated Waste management Plan shows the concentration of commercial cattle paddocks in the middle of the swamp/wetland.¹⁴

U.S. Dairy Water Management Plan, Hawai'i Dairy Farms
May 25, 2016
Page 8 of 14

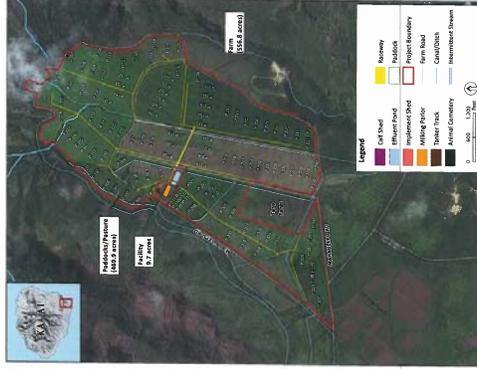


Figure 6 – Paddock Map

Group 20 International • 752 Kaula Street, 9th Floor • Honolulu, HI 96813-4207 • Tel: 808.523.5864 • Fax: 808.523.5864 • www.groupp20.com

¹³NPS, Ibid Page 35

¹⁴ 2016 June Hawaii Dairy Farms Updated Waste Management Plan, Page 24 of 109.

Wai'ōpili Stream remains, even though subsumed by the ditch system.

Though Māhā'ulepū valley's streams and wetlands were modified, their remnants remain; these expand and become especially visible during wetter periods. The former Wai'ōpili stream—largely subsumed by the ditch system within the cultivated area at Māhā'ulepū—emerges in more natural form near Makauwahi Cave at the south end of the study area, where it joins forces with a natural spring and a remnant of the once much larger Kapunakea Pond. This wetland juncture attracts waterbirds and serves as nursery habitat for native fish. It is linked hydrologically to the important Makauwahi Cave complex, a critical habitat for endangered arthropods that rely on seepage of nutrient-rich water.¹⁵

4. Underground hydrologic links have the potential to extirpate the endangered cave troglobites with manure laden ground water. The updated waste management plan estimates the time of transit of water to be 2 years, unless the geology contains lava tubes, in which case it will be quicker. The “wetland juncture” is where the subsumed Waiopili Stream hits the Pacific Ocean.

Research and restoration have been ongoing in Wai'ōpili Stream/Kapunakea Pond area since 1992¹⁶. On fifteen acres leased from Grove Farm, volunteers are restoring native grassland and riparian areas. A statewide wetland strategy calls for continuation of these efforts, and protection of “this unique area in perpetuity through conservation easements, cooperative agreements with the landowner, and/or direct acquisition.” (PCIV 2005).

Along the Māhā'ulepū watershed coastline, other small wetland ecosystems fed by rain and groundwater lie just inland of the dunes. These, too, attract native waterfowl; biologists believe they once supported larger populations, and have excellent restoration potential.

Resource specialists told NPS that Māhā'ulepū and Kipu Kai, in combination with Hui'ē'ia, provide a much-needed mosaic of varied wetland habitats that should be protected and restored to be reliably available for endangered Hawaiian waterbirds.

Groundwater

Rain is Kaua'i's sole source of water. Rainfall not lost to runoff or evaporation seeps into the lava flows that make up the island, forming freshwater aquifers. In the study area this seepage is generally slow, since the types of lava found here are relatively impermeable overall. However, they do contain some spaces where water collects to form underground aquifers. Large amounts of fresh water perch in the Kōloa volcanics atop denser layers of soil, ash or lava. Fresh basal groundwater occurs in the basalt lavas that comprise most of Hā'upu ridge, and scattered springs emerge around the base of the mountain range. County of Kaua'i and major landowners, including Grove Farm, collect and distribute fresh water from area streams and basal sources through ditches, wells, tunnels and reservoirs. Two separate aquifers—Kōloa and Hanama'ulu—supply the water system in the study area.

Because of the limited permeability of lavas in the study area, few freshwater springs discharge into the ocean. In the permeable limestone dunes along the coast, the basal water is brackish.

Volume 2 of the HDF DEIS, considers briefly water quality.¹⁷

2.2.1 Receiving Water Body State Water Quality

The drainage ways within Maha'ulepū Valley and within the project site are classified by the DOH Clean Water Branch (CWB) to be Class 2 inland waters as defined in Hawaii Administrative Rules (HAR) Title 11, Chapter 54 (~11-54). These canals and ditches flow in the makai direction beyond the project site cross Maha'ulepū Road and into the agricultural lands on the opposite side of the road. The unnamed drainage ways from the valley all converge near Pu'u Keke and are discharged into Class A marine waters along the Maha'ulepū coastline between Kamala Point and Punahoa Point. The Maha'ulepū coastline is classified as Class 1 critical habitat by the State.

2.2.2 Wetlands

According to the United States Fish and Wildlife Service (FWS), the agricultural canals, ditches and ponds within the valley are listed in the National Wetlands Inventory (NWI). There is also a fresh water wetland on the makai side of Maha'ulepū Road outside the project site.

5. Māhā'ulepū has unique significant, unique and irreplaceable paleological resources. Preservation of this unique concentration of fossils and severely range restricted species has been dependent upon precise conditions. Nutrient laden, manure tainted groundwater will change the pH and balance of cave waters. There is great potential for the fossil record, as well as the living “cave fossil species” to be eliminated by tainted water

6. There is no exercise of the precautionary principal. HDF plans to create an “Endangered Species Protection Plan” after the project is underway.

*Dairy Operations*¹⁸

Following build-out and the start of Dairy operations we recommend that the following recommendations be implemented:

- Develop an Endangered Species Protection Plan, the plan would include all of the topics outlined above. The material would be presented in more detail and with the rationale for why following those BMP's is necessary to ensure that Dairy operations do not result in deleterious impacts to protected wildlife. The Plan would also include these additional topics:
 - Endangered Species Identification with photographs and description of their habitats, and likely areas on the property where they are most likely to occur and/or to nest
 - Employee endangered species training, provided both in writing and as a PowerPoint presentation for use in training new personnel and annual updates of training

¹⁵ NPS, *Ibid.* Page 36.

¹⁶ NPS, *Ibid.* Page 36.

¹⁷ 2016 HDF DEIS, Volume 2, Op. cit. Page 129 of 732.

¹⁸ 2016 HDF DEIS, Volume 1, Page 338 of 2,607.

Urban and agricultural development as well as quarrying operations within the area threaten the habitat of these cave arthropods, and non-native species likely prey upon or compete with them for limited food resources.²¹

8. There was inadequate consideration of other alternative habitat or operational plan to this project. Kīpu Kai is similar habitat to Mahaulēpu, with most of the same resource concerns, yet only Kīpu Kai was considered as an alternative dairy site. No other operational plan, location or business was considered in the DEIS. This is inadequate consideration of viable project alternatives.

Please reject this DEIS, as presented. The environmental impacts are irreversible and too great to be considered. Mahalo in advance for rejecting this DEIS.

Hope Kallai

- Predator control program
- Downed seabird, and injured waterbird response protocols

7. HDF DEIS erroneously states there is no Critical Habitat present on or adjacent to the project area and erroneously states no impact.

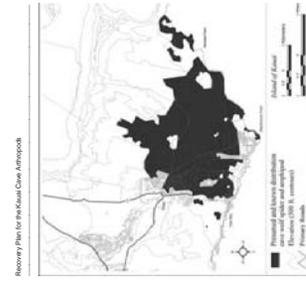
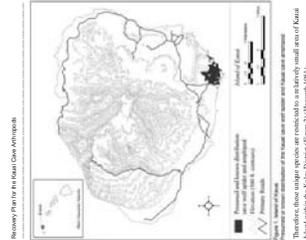
Critical Habitat

There is no federally delineated Critical Habitat for any species present on or adjacent to the project area. Thus the development and operation of the proposed project will not result in impacts to federally designated Critical Habitat. There is no equivalent statute under State law.

On page 23, the NPS states¹⁹:

Even today, a drama of potential extinction is playing out at Mākauwahi and other caves in the Māhā'ulepū Formation. The cave system is designated Critical Habitat for the Kaua'i cave wolf spider (*Adelocosa anops*) and the Kaua'i cave amphipod (*Speleorchestia Hananama'ulumā*). Only a few known populations of these species remain; all are small, and all occur in Mākauwahi or its immediate vicinity. The U.S. Fish and Wildlife Service is helping to fund plant restorations atop the cave area, in order to foster the native plants whose roots extend downward to the cave ceilings, potentially serving as food for the endangered arthropods (Henry 2007).

On April 28, 2006, the US Fish and Wildlife Service created a RECOVERY PLAN FOR THE KAUI CAVE ARTHROPODS: The Kauai Cave Wolf Spider (*Adelocosa anops*) and the Kauai Cave Amphipod (*Speleorchestia koloana*)²⁰ including maps of Critical Habitat on the HDF project site. .



¹⁹ 2008 U.S. Department of the Interior, National Park Service Māhā'ulepū, Island of Kauai, Reconnaissance Survey, Page 23 of 79

²⁰ 2006, April 28. US Fish and Wildlife Service, Region 1, Portland, Oregon. RECOVERY PLAN FOR THE KAUI CAVE ARTHROPODS: The Kauai Cave Wolf Spider (*Adelocosa anops*) and the Kauai Cave Amphipod (*Speleorchestia koloana*). Available at <http://pacific.fws.gov/ecoservices/endangered/recovery/default.htm> and <http://endangered.fws.gov/recovery/index.html> 76 Pages.

²¹ USFWS Ibid, Page 6 of 76.

24 July 2016

Hope Kallai
POB 655
Kilauea, HI 96754
lokahipath2@live.com

Virginia Pressler, M.D., Director
Laura McIntyre, Environmental Planning Office
State of Hawaii, Department of Health
1250 Punchbowl Street,
Honolulu, HI 96813
(808) 586-4337
doh.epo@doh.hawaii.gov
HDF@Group70int.com
jim@hawaiidairyfarms.com

RE: Hawaii Dairy Farms, LLC. Draft Environmental Impact Statement
TMK:(4) 2-9-003:001 (portion); 006 (portion); (4) 2-9-001:001 (portion)

Aloha e Department of Health:

Please reject the Draft Environmental Impact Statement¹ as prepared and consider the following 8 comments:

1. This DEIS is not consistent with federal or state Office of Conservation and Coastal Lands management practices. There are significant and irreversible negative environmental impacts to this project that are not discussed in the Draft Environmental Impact Statement, and appropriate agencies have not been contacted for comment and There is no US Army Corps Of Engineers and/or a project-specific DOH Section 401 Water Quality Certification and a Coastal Zone Management (CZM) Federal Consistency determination, nor can there ever be for this flawed project which admits manure-laden water will enter the Pacific Ocean. There are protected species present, not properly considered by Section 7 consultation of the Endangered Species Act which requires Federal agencies to ensure that actions they carry out, fund, or authorize do not destroy or adversely modify critical habitat to the extent that the action appreciably diminishes the value of the critical habitat for the survival and recovery of the species.

¹ 2016-06-08-KA-5E-DEIS-Hawaii-Dairy Farms, LLC, Volume 1, prepared by Group 70 International, May, 2016. 2,607 pages.

2. Māhā'ulepū has unique significant, unique and irreplaceable resources, including wetlands, unique landforms, and endangered species and is part of a connected network of historical, cultural and biological resources. In 2006, at the request of Senator Daniel K. Inouye, the U.S. National Park Service conducted a reconnaissance survey creating a park at Māhā'ulepū and published **Māhā'ulepū, Island of Kauai, Reconnaissance Survey.**²

NPS gave the area a priority ranking of 1, outstanding and/or unique examples of geological and ecosystem features

"the lands of Māhā'ulepū are among the most interesting areas in the State both geologically and biologically."

In accord with established NPS planning criteria, this report³ examines these natural and cultural resources to provide a preliminary evaluation of their significance, and a preliminary evaluation of the suitability and feasibility of helping to protect them within the framework of the national park system. These evaluations are based on limited site visits, research and consultations conducted by staff of the NPS Pacific West Region Honolulu Office in 2007, and are neither final nor definitive. They serve as background material for Senator Inouye as he considers whether to seek Congressional authorization for a full-fledged study of resource protection alternatives for Māhā'ulepū and surrounding areas.

Māhā'ulepū, a focus area for this reconnaissance survey, was evaluated in an NPS Natural Landmarks Survey of the Hawaiian Islands in 1981. That survey concluded that "the lands of Māhā'ulepū are among the most interesting areas in the State both geologically and biologically." It gave the area a priority ranking of 1, applied to areas that "include outstanding and/or unique examples of geological and ecosystem features characteristic of the Hawaiian Islands and which encompass several such features." (NPS 1981).⁴

including, NPS continued in their Reconnaissance Report:

Litified Dunes⁵

The Māhā'ulepū coast features a remarkable array of lithified dune features that lie atop the much older Kōloa and Waimea Canyon lavas. First formed when sea level was about 60 feet lower than today, they accumulated over the last 350,000 years, and are still dynamically changing. Extending from below sea level to as high as 500 feet above it, their layers reflect global cycles of glaciation and sea level change. Transitions between layers are marked by depositional and erosional soils that settled there during glacial periods, when sea level dropped and the shoreline lay as much as a mile farther out than it does today. The dunes contain plant and animal fossils that tell the stories of their time.

² 2008 U.S. Department of the Interior, National Park Service Māhā'ulepū, Island of Kauai, Reconnaissance Survey, 79 pages.

³ 2008 NPS, .Ibid. Page 5 of 79.

⁴NPS. Ibid Page 10

⁵ NPS. Ibid Page 19.

The dunes vary in their degree of consolidation and weathering according to age. The oldest and most thoroughly cemented layer, the Punahoa member, occurs near Hā'ūla and Papamō'i and covers most of Punahoa Point. It is faced by caves and contains fossils of land snails and plant roots. Mid-range layers (Pā'o and Makawehi members) are moderately or well cemented, with fossils of land crab burrows and plant roots. The loosely cemented Pā'a dunes that run northeast from Makawehi Pt. toward Punahoa comprise the youngest Māhā'ulepū member. Formed 4,000-6,000 years ago, they contain numerous fossils including land crabs, crab burrows, plant roots, land snails and birds. (Blay & Siemens 2004)

Fossils

The Māhā'ulepū formation is an exceptionally rich ground for avian and other fossils. According to Smithsonian Institute researchers, the majority of significant avifauna fossils found in Hawai'i were collected along this coast. Many were documented in the 1970s and 1980s, a period when the dunes were active and shifting, exposing pockets of fossils, including bones from three species of goose, a long-legged owl, and a flightless rail. Though vegetation has since partially stabilized the dunes, portions of loose limestone still sometimes break off to reveal new and startling fossil finds. (James 2007)

An adjacent limestone cave/sinkhole that is part of the lithified dune system lies just inland of Punahoa Point. Paleocologists excavating there have discovered an unparalleled array of plant and animal fossils and human remains from both pre- and post-contact Hawai'i; these are described later in this section (see Makauwahi Cave, below and in Section 4.6) Fossils were also found at a sand quarry site next to the cave.

Makauwahi Cave and Sinkhole⁶

A large limestone cave system, hollowed out by groundwater, permeates the dunes of the Māhā'ulepū Formation. The best known part of this cave system is the Makauwahi cave and sinkhole, located on Grove Farm property just inland of Punahoa Point. It is the state's only solution limestone cave (OSP 1992), and has been described as "the largest limestone cave complex, the richest fossil site and the oldest dated ecological site in the Hawaiian Islands." (Hoopaja 2006). Discoveries at Makauwahi were featured in public television's 2001 NOVA series on worldwide species extinction.

In the early Holocene, the Makauwahi Cave was entirely roofed and had a dry floor. But as sea levels rose the nearby ocean increasingly breached the cave. About 7,000 years ago the roof at the center of the cave collapsed, forming a sinkhole open to the sky, and internal collapses sealed the cave off from the sea. Groundwater filled the cave and created a lake. During the millennia that followed, natural soils, sand, bones, plant remains, shells, and human artifacts and debris from the surrounding area swept into the sinkhole lake, building up thick layers of a peat-like substance that eventually turned the lake into a swamp. (Burney & Kikuchi 2006)

Today the sediments are 10 meters deep at the sinkhole's center, and the sinkhole floor sits 1-2 meters above sea level.

A coating of silty clay—deposited mostly during the 20th century—cloaks the earlier peat-like strata. The water table, fed by underground springs, sits just below the clay surface. The sinkhole's sheer walls range in height from 6 to 25 meters, forming an irregular opening to the sky that measures 30-35 meters across. (Burney et al. 2001)

Cave passages connect to the north and south ends of the sinkhole. The south passage leads to culturally sensitive areas and is protected from public access. The north passage, where researchers

and visitors enter the cave, has a crawl-in entrance through a sheer limestone bluff bordering Wai'ōpili Stream. page 22

Sediment layers in the cave chronicle Hawai'i environment, lifeforms and geological events from 10,000 years ago up to the present. The site is exceptional partly because of its excellent stratification, and also because of its unusual degree of preservation of materials that normally perish. The peat's neutral pH, created by the combination of fresh water and limestone, allows for preservation of minute pollen grains as well as bones and shells; one fossilized but intact yam was even uncovered. "This is like a giant pickling jar. Leaves, whole tree trunks, extinct land snail shells, bird bones, seeds, fish with scales still on — they're all remarkably preserved" (Burney D., quoted in Hoopaja 2006)

To protect this unique resource and make it available for research, the private landowner leases the sinkhole and 17 acres around it to the nonprofit Makauwahi Cave Reserve. Research at the site began in 1992 and first received federal funding in 1996. Sponsors have included National Science Foundation, NOAA, National Tropical Botanical Garden, Fordham University, the Smithsonian Institution, USDA, Kaua'i Community College, and the National Geographic Society.

Researchers have collected cores throughout the site; described ten stratigraphic units based on age, sediment, and the fossils and artifacts found; and excavated in three pits to depths as much as 5 meters below the water table. To date, they have documented findings from over 200 cubic meters of sediment. According to the lead researchers on site, "Nearly 10,000 years of sedimentary record ... has been analyzed for vertebrate bones, invertebrate shells, plant macrofossils, pollen, diatoms, sedimentology, and in the upper layers, human artifacts." Their finds, often cited in journals and featured in public media, are documented in Burney and Kikuchi (2001) and Burney et al. (2001), and are summarized below. Excavations at Makauwahi have uncovered fossils of 45 species of birds. Fully half of these are extinct, and seven or eight are species not previously documented by science. They include along-legged owl that ate fellow birds; a newly discovered extinct species of bat; flightless grazing birds the size of turkeys; a moa nalo (lost fowl) with a jaw like a turtle; and a tiny duck that fed at night and had eyes set unusually far back on its head. Other finds are nesting boobies, gulls, several forest birds, and the endangered Laysan duck, which still exists elsewhere in the Hawaiian archipelago but was not previously known to inhabit Kaua'i.

Plant fossils uncovered at Makauwahi are equally surprising. The cave strata yield seeds and pollen of many plant species which today are rare and seen only at higher elevations, and which were previously assumed to be suited only to Hawai'i's cooler, wetter upland and mountain areas. Their appearance in significant numbers in core samples from Makauwahi is leading scientists to reconsider these assumptions, and to examine the possibility for extensive native plant restoration efforts in coastal areas.

Other finds include 14 species of extinct land snails, seen in large numbers in lower cave layers but entirely absent in later strata. Their disappearance correlates with the arrival of the Pacific rat, which is believed to have landed in the islands with the first Polynesians. Earliest evidence of rats in the cave layers is dated at 1039-1241 A.D.

Hawai'i's native species disappear from Makauwahi's successive sediment layers in stages that reveal much about human interaction with the island environment. Arrival of people, rats and pigs corresponds with rapid disappearance of large snails, large flightless birds, and certain plants. A second stage of species loss ensues as Polynesian settlers alter the landscape, eat some native

⁶ NPS, Page 20.

species, and introduce new ones. Extinction proceeds apace when Europeans arrive: they introduce goats and cattle, import new species for agriculture, rapidly use forest resources, and alter the landscape in ways that dramatically contribute to erosion and lowland sedimentation.

Endangered Species: Kauai Cave Wolf Spider and Kauai Cave Amphipod⁷

Even today, a drama of potential extinction is playing out at Mākauwahi and other caves in the Māhā'ulepū Formation. The cave system is designated Critical Habitat for the Kaua'i cave wolf spider (*Adelocosa anops*) and the Kaua'i cave amphipod (*Speleorchestia hanamā'ūlana*). Only a few known populations of these species remain: all are small, and all occur in Mākauwahi or its immediate vicinity. The U.S. Fish and Wildlife Service is helping to fund plant restorations atop the cave area, in order to foster the native plants whose roots extend downward to the cave ceilings, potentially serving as food for the endangered arthropods (Henry 2007).

4.2.1 Coastal Vegetation⁸ & Endemic Plants

Hawai'i's native coastal strand vegetation—an array of plants unique in the world—has been destroyed or seriously degraded on beaches throughout the state's inhabited islands. Along the shoreline of the study area, the fact that public access is relatively limited and adjacent land remains undeveloped provides some protection for this plant community. A wide variety of native coastal flora still grows here, despite the extensive presence of non-natives such as ironwood and koa haole. NPS staff noted, U.S. Fish and Wildlife Service has designated Critical Habitat along the entire Māhā'ulepū shoreline for the endangered 'ohai (*Sesbania tomentosa*).

Three rare plants are found at Mahaulepu: Pua pilo or maiapilo, *Capparis sandwichiana*; 'ānaunau, *Lepidium orbiculare*; and . Nama, *Nama sandwicensis*. Nama and puapilo were used medicinally by Native Hawaiians.

Other endemics (species found only in Hawai'i) include Hawaiian cotton (*Gossypium tomentosum*); beach spurge (*Chamaesyce degeneri*); pa'uohi'iaka (*Jacquemontia ovalifolia*); koki'o (*Kokia kaua'iensis*); nehe (*Lipochaeta integrifolia*); ma'oli'oli (*Schiedea* sp.); noni tree (*Morinda citrifolia*); the tree *Munroidendron racemosum*; two species of loulou (*Pritchardia* cf. *minor*, *Pritchardia elmerroic-demibinsoni*); and the Hawaiian ceper (*Capparis sandwichiana*) and hinahina kahakāi (*Nama sandwicensis*), both designated as USFWS Species of Concern.

Native plants gathered from the Māhā'ulepū Ahupua'a, for traditional uses include: 'aweoweo, maile, mokihana, 'ohi'a 'ai, matapilo, hinahina, hinahina kahakāi, limu kohu, mokihana, maile oli, pa'uohi'iaka, and various native fruits and limu. Non-native plants collected from Māhā'ulepū Ahupua'a for traditional use include the seeds of black eyes susans, cat's claw, and Java plum. These plants are used as medicines, in lei making, in ceremonies, traditional dance, and as food resources

Native Birds⁹ NPS staff recorded nine native bird species while on the reconnaissance and documented another seven via research or by interviews with local biologists. Of the total, seven are endemic at the species or sub specific level, five are indigenous, and the remaining four are migratory birds that winter in Hawai'i. Five of the seven endemic species are designated by USFWS as Endangered, and one as Threatened.

The endemic Endangered birds known in the study area are the Hawaiian coot ('ālae ke'oke'ō), common moorhen ('ālae 'ūla), Hawaiian duck (kolōa), Hawaiian stilt (ae'ō); and Hawaiian goose (nēnē). All but the coot and the nēnē were observed by NPS during the site visit.

Large Marine Vertebrates¹⁰ The beaches and nearshore waters of the study area are home to three important large marine vertebrates: the endangered Hawaiian monk seal, known in Hawaiiana as 'īlio holo i ka uaua (*Monachus schauinslandi*); the endangered humpback whale or kohala (*Megaptera novaeangliae*); and the threatened green sea turtle or honu (*Chelonia mydas*). All three were sighted during NPS's March 2007 visit.

Hawaiian Monk Seal Endangered Hawaiian monk seals regularly haul out on the beaches of the study area to bask. During the brief NPS field reconnaissance we observed adult seals resting onshore at Kawaihoa Beach and at Kīpū Kai. Successful monk seal puppings occurred at Māhā'ulepū in 2000 and 2007, at nearby Po'ipu Beach in 2000 and 2001, and at Kīpū Kai in 2006. The Hawaiian monk seal is one of only two mammals endemic to Hawai'i, and the most endangered marine mammal unique to U.S. waters (KMSWP 2007). In 1976 it was declared depleted under the Marine Mammal Protection Act, and endangered under the Endangered Species Act. Despite these protections, seal populations plummeted. An estimated 1200 Hawaiian monk seals remain alive today; experts predict there will be fewer than 1000 within five years (NOAA 2007b).

4.4.2 Fishes¹¹ Kaua'i residents describe the nearshore waters of the study area as a "prime fishing area." Telltale pipes for holding fishing poles are embedded at favored sites along the shoreline. Fish abundance is also implied by the presence of monk seals—the seals feed on reef fish as well as octopus, lobster, and eel.

Fish fauna offshore of the study area appear similar to those seen at other shallow water sites throughout the Hawaiian archipelago. Snorkel fish surveys by trained volunteers for the Reef Environmental Education Foundation recorded 24 species of fish at Kawaihoa Bay (Māhā'ulepū), and 43 species at Kīpū Kai. During the site visit NPS noted eight marine species, and an additional eight appeared in records kept by proprietors at Kīpū Kai.

4.4.3. Algae¹² NPS observed and identified 23 algal taxa from shore and at wading depth during our brief site visit. Based on the locations we saw, algal and benthic invertebrate cover appear to be in equilibrium throughout the study area. We saw no invasive or alien algae. A 2007 limu inventory along the Māhā'ulepū coast by a local biologist reportedly noted small amounts of invasive hypnea but an otherwise diverse and healthy array of species.

⁹ NPS. Ibid. Page 26

¹⁰ NPS. Ibid. Page 30.

¹¹ NPS. Ibid. Page 33.

¹² NPS. Ibid. Page 33.

⁷ NPS. Ibid. Page 23.

⁸ NPS. Ibid. Page 23.

The only indication of algal overgrowth observed by NPS is on shallow, gently sloping rocky intertidal benches, where cover is dominated by limu kala (*Sargassum echino- carpum*) or a diverse assemblage of foliose and turf algae. Where limu kala dominates, other algal species present include *Asparagopsis taxiformis*, *Dictyota sandvicensis*, *Dicryosphaeria cavernosa*, *Laurencia* sp., *Padina* sp., *Turbinaria ornata*, *Almofitopsis coccinea*, and *Wrangelia elegantissima*. On large boulders exposed to strong waves, crustose coralline red algae are particularly abundant.

Limu is a valued food source in Hawai'i. Caretakers of Kīpū Kai report that during low tides Kaua'i residents arrive by boat to glean for limu kōhu (*Asparagopsis taxiformis*) and other edible algae. Evidence of excessive harvesting and poor harvesting of limu kōhu is reported along the Māhā'ulepū coast.

A species list of algae sighted by NPS during the survey appears below in Appendix 6.2.5. The list reflects the survey's limited scope and should not be considered comprehensive.

3. Wetlands and protected wetland species will be negatively impacted by this HDF commercial cattle project. Commercial cattle concentrations are not compatible with waterbirds, cave dwelling species and endangered plants.

Hydrological Resources¹³ The study area lands encompass portions of five Kaua'i watersheds: Hulē'ia, Puali, and Nawiliwili in the area north of the Hā'upu ridge; Kīpū Kai at the ridge's east end; and Māhā'ulepū from the ridgeline southeast to the coast. Collectively these watersheds feature one perennial stream at Hulē'ia; intermittent streams at Māhā'ulepū, Kīpū Kai, and Niūmalu; a mosaic of varied wetland habitats; and two major freshwater aquifers. Māhā'ulepū

The portion of Māhā'ulepū watershed that lies within the study area stretches from the Hā'upu ridgeline southward through Māhā'ulepū valley and eastward to the coast.

Agricultural operations began in the mid-1800s in Māhā'ulepū valley; its intermittent streams and wetlands were long ago modified for irrigation purposes. The landowner Grove Farm operates a water system that includes wells, ditches, tunnels and reservoirs. Māhā'ulepū Reservoir, at the back of the valley, is part of that system. Both it and the County-owned Pu'u Hi reservoir (at the very southern end of the study area) serve as important attractors for Hawai'i waterfowl. Irrigated taro lo'i in the valley provide additional waterbird habitat. A broad natural depression in the valley also fills with water after heavy rains and temporarily draws waterbirds in large numbers.

This "broad depression", mapped as a swamp on the Monsarrat map of August 8, 1896, near a concentration of Mahaulepu kuleana and lo'i, is shown excerpted below, right in the middle of the proposed HDF paddocks.



Figure 6, from the HDF Updated Waste management Plan shows the concentration of commercial cattle paddocks in the middle of the swamp/wetland.¹⁴

13Hydrological Resources Management Plan, Hawai'i Dairy Farms
May 25, 2016
Page 8 of 14

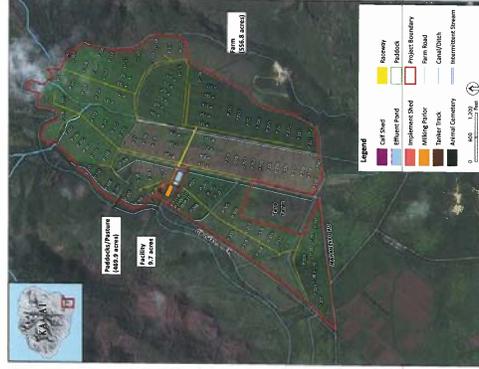


Figure 6 – Paddock Map

Group 20 International • 752 Kaula Street, 9th Floor • Honolulu, HI 96813-4207 • Tel: 808.523.5864 • Fax: 808.523.5864 • www.groupp20.com

¹³NPS, Ibid Page 35

¹⁴ 2016 June Hawaii Dairy Farms Updated Waste Management Plan, Page 24 of 109.

Wai'ōpili Stream remains, even though subsumed by the ditch system.

Though Māhā'ulepū valley's streams and wetlands were modified, their remnants remain; these expand and become especially visible during wetter periods. The former Wai'ōpili stream—largely subsumed by the ditch system within the cultivated area at Māhā'ulepū—emerges in more natural form near Makauwahi Cave at the south end of the study area, where it joins forces with a natural spring and a remnant of the once much larger Kapunakea Pond. This wetland juncture attracts waterbirds and serves as nursery habitat for native fish. It is linked hydrologically to the important Makauwahi Cave complex, a critical habitat for endangered arthropods that rely on seepage of nutrient-rich water.¹⁵

4. Underground hydrologic links have the potential to extirpate the endangered cave troglobites with manure laden ground water. The updated waste management plan estimates the time of transit of water to be 2 years, unless the geology contains lava tubes, in which case it will be quicker. The “wetland juncture” is where the subsumed Waiopili Stream hits the Pacific Ocean.

Research and restoration have been ongoing in Wai'ōpili Stream/Kapunakea Pond area since 1992¹⁶. On fifteen acres leased from Grove Farm, volunteers are restoring native grassland and riparian areas. A statewide wetland strategy calls for continuation of these efforts, and protection of “this unique area in perpetuity through conservation easements, cooperative agreements with the landowner, and/or direct acquisition.” (PCIV 2005).

Along the Māhā'ulepū watershed coastline, other small wetland ecosystems fed by rain and groundwater lie just inland of the dunes. These, too, attract native waterfowl; biologists believe they once supported larger populations, and have excellent restoration potential.

Resource specialists told NPS that Māhā'ulepū and Kipu Kai, in combination with Hui'ē'ia, provide a much-needed mosaic of varied wetland habitats that should be protected and restored to be reliably available for endangered Hawaiian waterbirds.

Groundwater

Rain is Kaua'i's sole source of water. Rainfall not lost to runoff or evaporation seeps into the lava flows that make up the island, forming freshwater aquifers. In the study area this seepage is generally slow, since the types of lava found here are relatively impermeable overall. However, they do contain some spaces where water collects to form underground aquifers. Large amounts of fresh water perch in the Kōloa volcanics atop denser layers of soil, ash or lava. Fresh basal groundwater occurs in the basalt lavas that comprise most of Hā'upu ridge, and scattered springs emerge around the base of the mountain range. County of Kaua'i and major landowners, including Grove Farm, collect and distribute fresh water from area streams and basal sources through ditches, wells, tunnels and reservoirs. Two separate aquifers—Kōloa and Hanamā'ulu—supply the water system in the study area.

Because of the limited permeability of lavas in the study area, few freshwater springs discharge into the ocean. In the permeable limestone dunes along the coast, the basal water is brackish.

Volume 2 of the HDF DEIS, considers briefly water quality.¹⁷

2.2.1ReceivingWaterBody State WaterQuality

The drainage ways within Maha'ulepū Valley and within the project site are classified by the DOH CleanWaterBranch(CWB) to be Class2 inland waters as defined in Hawaii Administrative Rules (HAR) Title11, Chapter54(~11-54). These canals and ditches flow in the makai direction beyond the project site cross Maha'ulepū Road and into the agricultural lands on the opposite side of the road. The unnamed drainage ways from the valley all converge near Pu'u Keke and are discharged into Class A marine waters along the Mahā'ulepū coastline between Kamala Point and Punahoa Point. The Mahā'ulepū coastline is classified as Class 1 critical habitat by the State.

2.2.2Wetlands

According to the United States Fish and Wildlife Service (FWS), the agricultural canals, ditches and ponds within the valley are listed in the National Wetlands Inventory (NWI). There is also a fresh water wetland on the makai side of Maha'ulepū Road outside the project site.

5. Māhā'ulepū has unique significant, unique and irreplaceable paleological resources. Preservation of this unique concentration of fossils and severely range restricted species has been dependent upon precise conditions. Nutrient laden, manure tainted groundwater will change the pH and balance of cave waters. There is great potential for the fossil record, as well as the living “cave fossil species” to be eliminated by tainted water

6. There is no exercise of the precautionary principal. HDF plans to create an “Endangered Species Protection Plan” after the project is underway.

Dairy Operations¹⁸

Following build-out and the start of Dairy operations we recommend that the following recommendations be implemented:

- Develop an Endangered Species Protection Plan, the plan would include all of the topics outlined above. The material would be presented in more detail and with the rationale for why following those BMP's is necessary to ensure that Dairy operations do not result in deleterious impacts to protected wildlife. The Plan would also include these additional topics:
- Endangered Species Identification with photographs and description of their habitats, and likely areas on the property where they are most likely to occur and/or to nest
- Employee endangered species training, provided both in writing and as a PowerPoint presentation for use in training new personnel and annual updates of training

¹⁷ 2016 HDF DEIS, Volume 2, Op cit. Page 129 of 732.

¹⁸ 2016 HDF DEIS, Volume 1. Page 338 of 2,607.

¹⁵ NPS, Irid. Page 36.

¹⁶ NPS, Irid Page 36.

Urban and agricultural development as well as quarrying operations within the area threaten the habitat of these cave arthropods, and non-native species likely prey upon or compete with them for limited food resources.²¹

8. There was inadequate consideration of other alternative habitat or operational plan to this project. Kīpu Kai is similar habitat to Mahaulēpu, with most of the same resource concerns, yet only Kīpu Kai was considered as an alternative dairy site. No other operational plan, location or business was considered in the DEIS. This is inadequate consideration of viable project alternatives.

Please reject this DEIS, as presented. The environmental impacts are irreversible and too great to be considered. Mahalo in advance for rejecting this DEIS.

Hope Kallai

- Predator control program
- Downed seabird, and injured waterbird response protocols

7. HDF DEIS erroneously states there is no Critical Habitat present on or adjacent to the project area and erroneously states no impact.

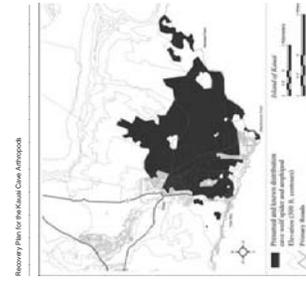
Critical Habitat

There is no federally delineated Critical Habitat for any species present on or adjacent to the project area. Thus the development and operation of the proposed project will not result in impacts to federally designated Critical Habitat. There is no equivalent statute under State law.

On page 23, the NPS states¹⁹:

Even today, a drama of potential extinction is playing out at Mākauwahi and other caves in the Māhā'ulepū Formation. The cave system is designated Critical Habitat for the Kaua'i cave wolf spider (*Adelocosa anops*) and the Kaua'i cave amphipod (*Speleorchestia Hananama'ulumā*). Only a few known populations of these species remain; all are small, and all occur in Mākauwahi or its immediate vicinity. The U.S. Fish and Wildlife Service is helping to fund plant restorations atop the cave area, in order to foster the native plants whose roots extend downward to the cave ceilings, potentially serving as food for the endangered arthropods (Henry 2007).

On April 28, 2006, the US Fish and Wildlife Service created a RECOVERY PLAN FOR THE KAUI CAVE ARTHROPODS: The Kauai Cave Wolf Spider (*Adelocosa anops*) and the Kauai Cave Amphipod (*Speleorchestia koloana*)²⁰ including maps of Critical Habitat on the HDF project site. .



¹⁹ 2008 U.S. Department of the Interior, National Park Service Māhā'ulepū, Island of Kauai, Reconnaissance Survey, Page 23 of 79

²⁰ 2006, April 28. US Fish and Wildlife Service, Region 1, Portland, Oregon. RECOVERY PLAN FOR THE KAUI CAVE ARTHROPODS: The Kauai Cave Wolf Spider (*Adelocosa anops*) and the Kauai Cave Amphipod (*Speleorchestia koloana*). Available at <http://pacific.fws.gov/ecoservices/endangered/recovery/default.htm> and <http://endangered.fws.gov/recovery/index.html> 76 Pages.

²¹ USFWS Ibid, Page 6 of 76.

Marine Environment

The EIS documents the existing conditions of the nearshore marine environment, including a characterization of the biotic environment where water flows to the ocean through Waioipili Ditch. Comparing the characterization of nutrients and biological constituents from surface water samples to those water samples taken in the nearshore marine area reveal that indicator bacteria were substantially lower in the ocean than in the ditch. The rapid decrease is a result of physical mixing of water masses. Water sampling results show that elevated levels of indicator bacteria do not extend beyond the shoreline. See EIS Section 4.17.3 *Nearshore Marine Waters*, and Appendix F.

A large body of scientific literature documents that, contrary to popular belief, reef corals do not necessarily require low nutrient water. In Hawaii, Atkinson et al. 1994 showed that a multitude of corals from around the Pacific Basin growing at the Waikiki Aquarium in high nutrient marine groundwater have higher linear growth rates than corals in the wild. There is no reason to expect that a short-term exposure of a very limited community to elevated nutrients will result in any negative impacts to corals in the mixing zone of Waioipili Ditch and the ocean.

Long-term ocean water quality monitoring has been initiated to provide a baseline for the nearshore ocean waters. HDF will regularly sample and analyze nutrient and chemical constituent levels in the near-shore marine environment. Data from the nearshore water monitoring program will be made available to the DOH CWB, dairy neighbors and the local Kauai community, and will allow for evaluation of possible contamination sources.

Your comment, along with this response, will become part of the public record and will be published in the Final EIS. When published, the Final EIS will be available on the OEQC website which you can access using the following URL, and search "Hawai'i Dairy Farms": <http://tinyurl.com/OEQCKAUAJ>.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.



Jeffrey H. Overton, AICP, LEED AP
Principal Planner