

# ***Phase I Environmental Site Assessment***

The Galbraith Estate Property  
Wahiawa, Oahu, Hawaii

December 6, 2012  
Project No. 17012-012185.00

*Prepared for:*

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## Executive Summary

The Trust for Public Land retained Bureau Veritas North America, Inc. (Bureau Veritas) to conduct an updated Phase I Environmental Site Assessment (ESA) of the Galbraith Estate property located in Wahiawa, Oahu, Hawaii (the “subject property”). This assessment is an update to Bureau Veritas’ (formerly Clayton Group Services, Inc.) previous Phase I ESAs of the subject property, which were conducted for Bank of Hawaii, Trustee of the George Galbraith Trust.

The previous Phase I ESAs were conducted in January of 2007 (Project No. 17006-006510.00), July of 2007 (Project No. 17007-007162.00), January of 2008 (Project No. 17008-008009.00), October of 2008 (Project No. 17008-008193.00), May of 2009 (Project No. 17009-009082.00), April of 2010 (Project No. 17010-010066.00), January of 2011 (Project No. 17011-011002.00), and September of 2011 (Project No. 17011-011113.00). It should be noted that 14 of the land parcels previously included in the Galbraith Estate have been sold since the May 2009 Phase I ESA was conducted, and are not included in this updated Phase I ESA. The ten remaining parcels that comprise the current subject property include Tax Map Key (TMK) Numbers: (1) 6-5-002: Parcels 10 and 25, and (1) 7-1-001: Parcels 2, 3, 5, 8, 12, 25, 26, and 28.

The objective of the assessment was to provide an independent, professional opinion regarding *recognized environmental conditions* (RECs), as defined by ASTM International (ASTM), associated with the subject property. This assessment was requested in association with an acquisition.

This assessment was performed under the conditions of, and in accordance with Bureau Veritas’ Proposal Number 1709.12.328, dated October 9, 2012, in accordance with ASTM E1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Any exceptions to, additions to, or deletions from the ASTM guidelines are described in the report. Details of the work performed, sources of information, and findings are presented in the report. Limitations of the assessment are described in Sections 1.2 and 1.3.

The subject property, currently owned by the George Galbraith Trust Estate, consists of approximately 1,743.3195 acres of agricultural lands (ten adjoining land parcels) that were historically planted in pineapple crops. These agricultural lands were fallow and covered with weeds, grasses and other vegetation at the time of Bureau Veritas’ October 16, 2012 site visit. Portions of the south-southeastern boundaries of the subject property include heavily vegetated embankments that slope down steeply to Kaukonahua Stream Gulch and Wahiawa Reservoir (Lake Wilson). Much of the subject property’s northern boundary is comprised of the heavily vegetated embankment that slopes down into Poamoho Stream Gulch.

One permanent structure on the subject property, the Del Monte Corporation (DMC) Well #5/Bott Well (also known as the Del Monte Pump 5 well), is located in the former pineapple fields near the Kaukonahua Road and Wilikina Drive intersection, in the central-western portion of the subject property. The well system includes a pavilion structure that houses the well pump system, diesel engine, reservoir holding tanks with ancillary piping, a small storage shed for maintenance products, and an associated 10,000-gallon diesel AST within secondary containment. According to Wai Engineering, this AST is not currently in use.

The former DMC Turner Station facility is a cleared area located along the northeast side of Kamehameha Highway, between Kamananui Road and Whitmore Avenue. The Turner Station was formerly used as a pineapple loading and staging area. According to Ms. Denise Hearn, Vice President and Real Estate Commercial Team Leader of Bank of Hawaii, the U.S. Navy has widened this portion of Kamehameha Highway as part of a requirement by the State of Hawaii.



The historical research presented in this report has established the use of the subject property since 1909, when the earliest available topographic map (dated 1909-1913) showed the subject and surrounding properties as undeveloped and/or agricultural lands, with railroad (RR) tracks labeled “*Oahu Railway and Land Company*” traversing the east/northeast portion of the subject property. In the next available map, from 1927, the subject and adjoining properties were depicted as a portion of cultivated agricultural lands, with a network of unimproved plantation roads bordering and accessing the agricultural fields. Since at least the 1920s, the subject property has been utilized as cultivated agricultural lands, with various associated farming structures added and/or removed. Agricultural activities ceased sometime after 2004, and the subject property was planted in common oats for approximately two years. It is currently fallow and covered with weeds, grasses, and other vegetation.

Past ownership and lease records indicate similar histories for all of the parcels that comprise the subject property. The earliest records, from 1944 and 1950, indicate the George Galbraith Trust Estate (the current owner) as the property owner, with California Packing Corporation listed as a lessee. California Packing Corporation changed its name to Del Monte Corporation in 1967. In the early 1960s, three of the subject parcels (TMKs: [1] 6-5-002: Parcel 10, and [1] 7-1-001: Parcels 3 and 12) included leases to Hawaiian Pineapple Company, Dole Corporation, and Castle & Cooke, Inc.

Past environmental work conducted at the subject property includes investigations of: (1) a fumigant mixing area near the Karsten Warehouse (no longer part of subject property); and (2) a Rag Disposal Area near the southern end of Field 202A. Following these investigations, the EPA determined that the subject property is not a source of release that poses a potential threat to human health or the environment. Therefore, the EPA proposed to remove the subject property from the National Priorities List (NPL). The State of Hawaii, through its Department of Health, concurred with the EPA’s decision. The property was subsequently delisted from the NPL.

Other environmental work conducted at the subject property includes investigations and cleanup of: (1) a computer debris dump site on the northeast portion of the subject property; (2) an automobile (lead-acid) battery dump site along the southeast-central boundary of the subject property; and (3) an oil release at the DMC Well #5/DMC Bott Well (Well 3-3103-01) on the western portion of the subject property. These issues are considered historical RECs, as defined by ASTM, but they are not considered current RECs.

This assessment has revealed no evidence of RECs, as defined by ASTM, in connection with the subject property, except for the following:

- During one of Bureau Veritas’ previous Phase I assessments, conducted in April of 2008, a new road for the United States Navy was under construction along the northeastern boundary, and extending through the northeast corner of the subject property. Initial construction of a bridge was underway at the nearby Poamoho Stream Gulch, and a road cutaway had been excavated for installation of the bridge. Small pieces of garbage were observed mixed in with the soil of the road cutaway along the edge of the subject property. According to personnel with the onsite construction contractor, Dick Pacific Construction Company, Ltd., a significant amount of garbage and debris were encountered during the excavation, including household-type garbage, wrecked cars, and car parts. Although the Navy roadway bridge is not part of the subject property, this discovery indicates the potential for additional garbage, cars, and car parts to be buried along the edges of the subject property immediately adjacent to the area excavated by the Navy.

This finding is considered a REC because there is evidence of buried cars and car parts, with a potential for releases of petroleum hydrocarbons to the subject property. Future excavation activities in the northeast portion of the subject property should be monitored for buried waste and associated releases.



The following environmental conditions, which are not considered to be *RECs*, as defined by ASTM, were revealed during this assessment:

- The majority of the subject property was formerly used as agricultural land. Agricultural chemicals such as pesticides and herbicides used on pineapple and sugar cane crops may be an environmental concern. However, no evidence of chemical mixing or storage areas, or excessive use of pesticides and herbicides from past agricultural use was identified at the subject property.

The DOH *Technical Guidance Manual for the Implementation of the State Contingency Plan Interim Final*, dated June 21, 2009, recommends that sites with known pesticide-related contamination, and sites where pesticides were regularly applied, be evaluated for residual contamination prior to re-development.

This finding is not considered to be a *REC* because there was no evidence of storage, mixing or excessive use of agricultural chemicals at the subject property. However, there is a potential that agricultural chemicals exist in the soil at concentrations above the DOH action levels. If future plans for the subject property include commercial or residential development, the soil should be tested for agricultural chemicals following the DOH guidelines. In addition, if any soil is to be removed from the subject property for reuse elsewhere, it should be tested for pesticides/herbicides.

- The DMC Well #5/Bott Well site on the western portion of the subject property includes a small storage shed that formerly contained herbicide and motor oil containers stored on a spill pallet. Staining was observed on the floor of the shed, but no staining was observed on the soil around the shed. Although there is a potential for impacts to the soil around the shed, it is unlikely to be significant because no staining was observed.

This finding is not considered a *REC* because there is no evidence of releases outside of the shed. However, due to the length of time that chemicals were stored in the shed, there is a potential for impacts to the underlying soil. If the shed is removed in the future, confirmation soil samples should be collected and analyzed for chemical constituents of concern.

- Abandoned vehicles, vehicle parts, and other waste items were observed on the northern portion of the subject property near or within Poamoho Gulch, including: (1) an abandoned boat (with motor) on the dirt road just west of Poamoho Camp (21 31' 8.6" N/158 2' 41.2" W); (2) two wrecked cars and car parts on the embankment along the winding dirt road that extends down into Poamoho Gulch (21 31' 15.1" N/158 2' 55.2" W); and (3) a rusted 55-gallon drum and two garbage cans on the embankment along the winding dirt road that extends down into Poamoho Gulch (21 31' 15.5" N/158 2' 57.0" W).

This finding is not considered a *REC* because there is no evidence of significant releases from the abandoned vehicles and other waste items. However, because these items are a nuisance attraction, Bureau Veritas recommends that they be removed and properly disposed. The ground beneath these items should then be assessed for staining or other evidence of releases.



## 1.0 INTRODUCTION

The Trust for Public Land retained Bureau Veritas North America, Inc. (Bureau Veritas) to conduct an updated Phase I Environmental Site Assessment (ESA) of the Galbraith Estate property located in Wahiawa, Oahu, Hawaii (the “subject property”). This assessment is an update to Bureau Veritas’ (formerly Clayton Group Services, Inc.) previous Phase I ESAs of the subject property, which were conducted for Bank of Hawaii, Trustee of the George Galbraith Trust.

The previous Phase I ESAs were conducted in January of 2007 (Project No. 17006-006510.00), July of 2007 (Project No. 17007-007162.00), January of 2008 (Project No. 17008-008009.00), October of 2008 (Project No. 17008-008193.00), May of 2009 (Project No. 17009-009082.00), April of 2010 (Project No. 17010-010066.00), January of 2011 (Project No. 17011-011002.00), and September of 2011 (Project No. 17011-011113.00). It should be noted that 14 of the land parcels previously included in the Galbraith Estate have been sold since the May 2009 Phase I ESA was conducted, and are not included in this updated Phase I ESA. The ten remaining parcels that comprise the current subject property include Tax Map Key (TMK) Numbers: (1) 6-5-002: Parcels 10 and 25, and (1) 7-1-001: Parcels 2, 3, 5, 8, 12, 25, 26, and 28.

The objective of the assessment was to provide an independent, professional opinion regarding *recognized environmental conditions (RECs)*, as defined by ASTM International (ASTM), associated with the subject property. This assessment was requested in association with an acquisition.

## 1.1 METHODOLOGY AND EXCEPTIONS

Good commercial and customary practice for conducting ESA has the goal of providing an independent, professional opinion regarding *RECs*, as defined by ASTM, associated with the subject property. The term *recognized environmental conditions* is defined as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not *RECs*.

This assessment was performed under the conditions of, and in accordance with Bureau Veritas’ Proposal Number 1709.12.328, dated October 9, 2012, using ASTM E1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* as a guideline.

The assessment included the following components:

- A site walkthrough of the property on September 8, 2011 for visual evidence of potential environmental concerns including existing or potential soil and groundwater contamination, as evidenced by soil or pavement staining or discoloration, stressed vegetation; indications of waste dumping or burial, pits, ponds, or lagoons; containers of hazardous substances or petroleum products; electrical and hydraulic equipment that may contain polychlorinated biphenyls (PCBs), such as electrical transformers and hydraulic hoists; and underground and aboveground storage tanks (USTs/ASTs).



- An investigation of historical use of the subject property through reasonably ascertainable historical information (e.g., aerial photographs, fire insurance maps, city directories) for evidence of prior land use that could have led to *RECs*.
- A review of information available on general geology and topography of the subject property, local groundwater conditions, sources of water, power, and sewer, and proximity to ecologically sensitive receptors, such as streams, that might be impacted by *RECs* and environmental issues.
- A review of environmental records available from the property owner or site contact including regulatory agency reports, permits, registrations, and consultants' reports for evidence of *RECs* and activity and use limitations (AULs). This review was conducted in September of 2011.
- A site property line visual assessment of adjacent properties on September 8, 2011 for evidence of potential offsite environmental conditions that may affect the subject property.
- A review of a commercial database summary of federal, state and tribal regulatory agency records, dated September 1, 2011, pertinent to the subject property and offsite facilities located within ASTM-specified search distances from the subject property.
- Review of reasonably ascertainable Federal, State and Local environmental agency case files for the subject property. This will also include interviewing agency project managers (if available) regarding the status of the subject property (e.g. LUST incident closure, etc.). This review was conducted in September of 2011.
- Interviews with the subject property owner, key site personnel, and others, regarding current and previous uses of the property, particularly activities involving hazardous substances and petroleum products. The interviews were conducted in September of 2011, and some information was provided from User Questionnaires completed in September of 2011.
- Evaluation of information gathered during the assessment to reach conclusions concerning *RECs*, and development of this report.

This assessment also included the following non-ASTM items:

- Asbestos-Containing Materials (ACM)
- Lead-Based Paint (LBP)
- Radon
- Wetlands

This assessment did not include sampling or analysis of suspect ACM, LBP, soil, groundwater or other materials.

Mr. Tim Swartz, Senior Project Manager, and Mr. Andrew Roed, Staff Geologist from Bureau Veritas' Honolulu Regional Office, conducted the site reconnaissance for this assessment on October 16, 2011, unaccompanied. Mr. Swartz is an Environmental Professional as defined in Section 312.10 of 40 CFR 312.





See table of contents for a list of appendices. Resumes for environmental professionals involved in this assessment are included in the appendices. Photographs taken at the time of the assessment are included behind the *Photographs* Tab. Mr. Keith Yamashita of Bank of Hawaii provided access to a portion of the subject property with a locked gate.

## **1.2 LIMITING CONDITIONS OF ASSESSMENT**

Information for the assessment was obtained from sources listed in the appendices. This information, to the extent it was relied on to form our opinion, is assumed to be correct and complete. Bureau Veritas is not responsible for the quality or content of information from these sources.

### **1.2.1 Unavailable Documentation**

At the time of this assessment, documents requested regarding the subject property were made available for review.

### **1.2.2 Data Gaps**

The ASTM Standard requires that the report identify the following: 1) obvious uses of the subject property since 1940 or first development, whichever is earlier; and 2) significant “data gaps” which affect the ability of the Environmental Professional to identify recognized environmental conditions. The report is also to include information on the sources consulted to address the data gaps.

Historical subject property ownership and/or use information was obtained for the time period 1909 to present. Based on this information, Bureau Veritas has established the history of obvious uses of the subject property since 1940 or first development, whichever is earlier. No significant data gaps (or other data gaps warranting discussion) were encountered during this Assessment.

## **1.3 RELIANCE**

The information and opinions rendered in this report are exclusively for use by the Trust for Public Land. Bureau Veritas will not distribute or publish this report without consent except as required by law or court order. The information and opinions expressed in this report are given in response to a limited assignment and should be considered and implemented only in light of that assignment. The services provided by Bureau Veritas in completing this project were consistent with normal standards of the profession. No other warranty, expressed or implied, is made.

## **2.0 USER PROVIDED INFORMATION**

ASTM E 1527 defines *User* as the party seeking to use Practice E 1527 to complete an environmental site assessment of the subject property, and in this case, the user is the Trust for Public Land, represented by Lea Hong, Esq., Hawaiian Islands Program Director. ASTM E 1527 specifies that certain tasks associated with identifying potential RECs at the subject property should be performed by the user and provided to the environmental professional.

The Trust for Public Land indicated that it has no specialized knowledge or experience of environmental issues of concern associated with the subject property, other than those identified in the previous Phase I ESAs conducted by Bureau Veritas.



Based on information provided by the *User*, no readily apparent evidence of potential RECs at the subject property was noted. Bureau Veritas' understands that the User intends to purchase the subject property.

### **3.0 SUBJECT PROPERTY DESCRIPTION**

#### **3.1 LOCATION AND LEGAL DESCRIPTION**

The subject property, the Galbraith Estate Property, consists of approximately 1,743.3195 acres of land area primarily comprised of former agricultural (pineapple) lands (ten adjoining land parcels) located to the north of Schofield Barracks military reservation and to the northwest of Wahiawa town, in an agricultural setting (Figures 1 and 2, *Figures* tab).

Roadways transecting the subject property include Kamehameha Highway and Kaukonahua Road in an east-west orientation, and Kamananui Road (Schofield-Wahiawa Cutoff Road) in a southwest-northeast orientation. The subject property is bordered by Poamoho Camp and Poamoho Stream Gulch to the north; Whitmore Village to the east; Wahiawa Reservoir (Lake Wilson) to the southeast; Wilikina Drive, Kaukonahua Stream Gulch, and former pineapple fields to the southwest; and Dole Corporation agricultural land (currently fallow) to the west.

The subject property is further described by the City and County of Honolulu Real Property Tax Office as TMK Numbers: (1) 6-5-002: Parcels 10 and 25, and (1) 7-1-001: Parcels 2, 3, 5, 8, 12, 25, 26, and 28.

According to the City and County of Honolulu Planning and Permitting Department, the subject property is zoned "Ag-1, Restricted Agriculture" and the State Land Use designation is "Agricultural District."

A revised Preliminary Report (title report) for the subject property, dated July 12, 2012, was provided by the Trust for Public Land and prepared by Title Guaranty of Hawaii, Inc. Based on our review of the report, no environmental liens or AULs were found regarding the subject property.

#### **3.2 CURRENT USE OF SUBJECT PROPERTY**

The subject property, currently owned by the George Galbraith Trust Estate, consists of approximately 1,743.3195 acres of agricultural lands (ten adjoining land parcels) that were historically planted in pineapple crops. These agricultural lands were fallow and covered with weeds, grasses and other vegetation at the time of Bureau Veritas' October 16, 2012 site visit. Portions of the south-southeastern boundaries of the subject property include heavily vegetated embankments that slope down steeply to Kaukonahua Stream Gulch and Wahiawa Reservoir (Lake Wilson). Much of the subject property's northern boundary is comprised of the heavily vegetated embankment that slopes down into Poamoho Stream Gulch.

One permanent structure on the subject property, the Del Monte Corporation (DMC) Well #5/Bott Well (also known as the "Del Monte Pump 5" well), is located in the former pineapple fields near the Kaukonahua Road and Wilikina Drive intersection, in the central-western portion of the subject property. The well system includes a pavilion structure that houses the well pump system, diesel engine, reservoir holding tanks with ancillary piping, a small storage shed for maintenance products, and an associated 10,000-gallon diesel AST within secondary containment. According to Wai Engineering, this AST is not currently in use.



The former DMC Turner Station facility is a cleared area located along the northeast side of Kamehameha Highway, between Kamananui Road and Whitmore Avenue. The Turner Station was formerly used as a pineapple loading and staging area. According to Ms. Denise Hearn, Vice President and Real Estate Commercial Team Leader of Bank of Hawaii, the U.S. Navy has widened this portion of Kamehameha Highway as part of a requirement by the State of Hawaii.

Additional information about the subject property includes the following:

- Utilities are not currently provided to the subject property.
- Stormwater runoff from the subject site flows via sheet flow to the adjoining gulches and waterways, including Poamoho Stream Gulch to the north, Wahiawa Reservoir (Lake Wilson) to the southeast, and Kaukonahua Stream Gulch to the southwest.
- Evidence of discharge sources was not observed at the subject or adjoining properties.
- The planned use for the subject property is unknown at this time.

It should be noted that the Kukaniloko Birthstones State Monument, a rectangular grassy area with a group of large stones surrounded by trees, is located off of Kamehameha Highway at the southwest end of Whitmore Avenue, within the western portion of the subject property. Although it is located within the subject property boundaries, this ancient Hawaiian historical site is not part of the subject property.

### 3.3 CURRENT USES OF ADJOINING/NEARBY PROPERTIES

The area surrounding the subject property is a mixture of commercial, agricultural, and residential land. Adjoining properties were observed (from the subject property or from public access areas) for signs of recognized environmental conditions and their potential to pose an environmental concern to the subject property (Figure 2, *Figures* tab). The uses and features of adjoining properties are described below.

- North:** Poamoho Camp (residential area), two Crate Yard warehouses, and Poamoho Stream Gulch, followed by the Dole Corp. pineapple fields (currently fallow)
- East:** U.S. Navy access road, followed by former pineapple fields, Whitmore Village (off of Whitmore Avenue), which includes residential neighborhoods and the Dole Corporation facilities, with Kaukonahua Stream Gulch to the east-southeast
- South:** Wahiawa Reservoir (Lake Wilson), followed by the town of Wahiawa to the southeast (including Wahiawa Terrace apartments and Wahiawa Industrial Center), with former pineapple fields and Kaukonahua Stream Gulch to the southwest, followed by Schofield Barracks military reservation and residential neighborhoods
- West:** Dole Corporation pineapple fields (fallow) and Kaukonahua Road

Adjoining properties do not appear to present an environmental concern to the subject property, based on visual observations and information obtained during the assessment, except as noted below.

- The adjoining properties include agricultural lands, which are of potential environmental concern because agricultural operations typically utilize chemicals, such as pesticides and herbicides, which have a potential to impact the subject property. However, based on Bureau Veritas' onsite inspection and historical research, there is no evidence of storage, mixing, or excessive use of agricultural chemicals on the adjoining properties with the potential to impact the subject property.



- The Poamoho Crate Yard facility, located on a north adjacent property, was identified in the Department of Health (DOH), UST database as the location of two registered USTs that are listed as “*Permanently-Out-of-Use*” as of March 1987. Two 6,000-gallon USTs were removed from the Crate Yard in 1987, and a subsurface investigation was conducted at the site in 1995. This investigation revealed no total petroleum hydrocarbons (TPH) as gasoline, diesel, and oil in any of the soil samples collected from the UST site. Based on these results, this adjoining property has a low potential to impact the subject property.

### 3.4 PHYSICAL SETTING

The subject property lies within the Schofield Saddle physiographic region on the central-northern plain of the island of Oahu, Hawaii. The western portion of the subject property lies within the District of Waialua, and the eastern portion lies within the District of Wahiawa. According to the United States Geological Studies (USGS) 7.5-minute Haleiwa, Hawaii topographic quadrangle map (1999), elevations across the subject property range from approximately 600 feet above mean sea level (amsl) in the lowest gulches forming the subject property boundaries, to approximately 1,000 feet amsl in the upper northeast portions, between Poamoho Camp and Whitmore Village.

#### Soil

According to the U.S. Department of Agriculture Soil and Conservation Service, the predominant soil type found throughout the subject property is Wahiawa silty clay (mapping units WaA and WaB). This well-drained soil is found on uplands on the island of Oahu and is derived from residuum and old alluvium from basic igneous rock. In representative profile, Wahiawa silty clay has a 12-inch thick surface layer of very dusky red and dusky red silty clay. The subsoil is approximately 48 inches thick and consists of dark reddish-brown silty clay with subangular blocky structure. The underlying material is weathered basic igneous rock. Permeability is moderately rapid and runoff is slow. On areas with 0 to 3 percent slopes (WaA), the erosion hazard is no more than slight. On areas with 3 to 8 percent slopes (WaB), the erosion hazard is slight.

Other soil types found on the subject property include: Kolekole silty clay loam, Kunia silty clay, Manana silty clay loam, Helemano silty clay, and Fill land, mixed. These soil types are described in the following paragraphs:

Kolekole silty clay loam (mapping units KuB, KuC, and KuD) is a well-drained soil on uplands on the island of Oahu that developed in old gravelly alluvium mixed with volcanic ash. In a representative profile, the surface layer is dark reddish-brown silty clay loam about 12 inches thick. The subsoil is approximately 48 inches thick and consists of dark reddish-brown silty clay loam and silty clay with subangular and angular blocky structure. The substratum is old gravelly alluvium. A pan-like layer usually occurs at a depth of 24 to 40 inches. Permeability is moderate throughout. On 1 to 6 percent slopes (KuB), runoff is slow and the erosion hazard is slight. On 6 to 12 percent slopes (KuC), runoff is medium and the erosion hazard is moderate. On 12 to 25 percent slopes (KuD), runoff is medium to rapid and the erosion hazard is moderate to severe.

Kunia silty clay (mapping unit KyA) is a well-drained soil on upland terraces and fans on the island of Oahu that developed in old alluvium. In a representative profile, the surface layer is dark reddish-brown silty clay about 22 inches thick. The subsoil is 40 to 71 inches thick and consists of dark reddish-brown silty clay and silty clay loam with subangular blocky structure. The substratum is dark reddish-brown gravelly silty clay. Permeability is moderate. On 0 to 3 percent slopes, the runoff is slow and the erosion hazard is no more than slight.



Manana silty clay loam (mapping unit MoB) is a well-drained soil on uplands on the island of Oahu that developed in material weathered from basic igneous rock. In a representative profile, the surface layer is dark reddish-brown silty clay loam about 8 inches thick. The subsoil is approximately 42 inches thick and consists of dusky-red, dark reddish-gray, and dark reddish-brown silty clay with subangular blocky structure. A nonporous, pan-like sheet about 1/8 to 1/4 inch thick occurs in the subsoil at 15 to 50 inches depth. The substratum is soft, weathered basic igneous rock. Permeability is moderately rapid above the pan and moderate below. On 2 to 6 percent slopes, runoff is slow and the erosion hazard is slight.

Helemano silty clay (mapping unit HLMG) is a well-drained soil on alluvial fans and colluvial slopes on the sides of gulches that developed in alluvium and colluvium derived from basic igneous rock. In a representative profile, the surface layer is dark reddish-brown silty clay about 10 inches thick. The subsoil is approximately 50 inches thick and consists of dark reddish-brown and dark-red silty clay with subangular blocky structure. The substratum is soft, highly weathered, basic igneous rock. Permeability is moderate. On 30 to 90 percent slopes, runoff is medium to very rapid, and the erosion hazard is severe to very severe.

Fill land, mixed (mapping unit FL) consists of areas filled with material dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources.

## **Groundwater**

According to the Aquifer Identification and Classification Technical Report No. 179, published by the Water Resources Research Center at the University of Hawaii for the Island of Oahu, the aquifer below the subject property is part of the Wahiawa aquifer system of the Central aquifer sector on the island of Oahu.

This aquifer is an unconfined high-level aquifer (fresh water not in contact with seawater) of the dike type, occurring in dike compartments. Its status is described as an irreplaceable fresh drinking water supply that is currently used. This aquifer has a high vulnerability to contamination.

The estimated depth to first groundwater across the subject property ranges from approximately 580 feet below ground surface (bgs) in the lowest gulch regions, to approximately 965 feet amsl in the upper northeastern portions.

The inferred groundwater flow direction is expected to follow surface topography and flow in a south/southwesterly direction toward Kaukonahua Stream Gulch, in a south/southeasterly direction towards Wahiawa Reservoir (Lake Wilson) and the North Fork of Kaukonahua Stream, and in a northerly direction toward Poamoho Stream Gulch (USGS, 1992, 1998 and 1999).

However, this is not always a reliable method of predicting groundwater flow direction. The local gradient and flow direction under the subject property may be influenced naturally by zones of higher or lower permeability, or artificially by nearby pumping or recharge, and may deviate from the regional trend.

## **4.0 HISTORICAL REVIEW**

### **4.1 SUMMARY OF HISTORICAL REVIEW**

The historical research presented in this section has established the use of the subject property since 1909.



The earliest available topographic map, from 1909-1913, showed the subject and surrounding properties as undeveloped and/or agricultural lands, with railroad tracks labeled “*Oahu Railway and Land Company*” traversing the east/northeast portion of the subject property. In the next available map, from 1927, the subject and adjoining properties were depicted as a portion of cultivated agricultural lands, with a network of unimproved plantation roads bordering and accessing the agricultural fields. Since at least the 1920s, the subject property has been utilized as cultivated agricultural lands, with various associated farming structures added and/or removed. Agricultural activities ceased sometime after 2004, and the subject property was planted in common oats for approximately two years. It is currently fallow and covered with weeds, grasses, and other vegetation.

Past ownership and lease records indicate similar histories for all of the parcels that comprise the subject property. The earliest records, from 1944 and 1950, indicate the George Galbraith Trust Estate (the current owner) as the property owner, with California Packing Corporation listed as a lessee. California Packing Corporation changed its name to Del Monte Corporation in 1967. In the early 1960s, three of the subject parcels (TMKs: [1] 6-5-002: Parcel 10, and [1] 7-1-001: Parcels 3 and 12) included leases to Hawaiian Pineapple Company, Dole Corporation, and Castle & Cooke, Inc.

Past environmental work conducted at the subject property includes investigations of: (1) a fumigant mixing area near the Karsten Warehouse (no longer part of subject property); and (2) a Rag Disposal Area near the southern end of Field 202A. Following these investigations, the EPA determined that the subject property is not a source of release that poses a potential threat to human health or the environment. Therefore, the EPA proposed to remove the subject property from the National Priorities List (NPL). The State of Hawaii, through its Department of Health, concurred with the EPA’s decision. The property was subsequently delisted from the NPL.

Other environmental work conducted at the subject property includes investigations and cleanup of: (1) a computer debris dump site on the northeast portion of the subject property; (2) an automobile (lead-acid) battery dump site along the southeast-central boundary of the subject property; and (3) an oil release at the DMC Well #5/DMC Bott Well (Well 3-3103-01) on the western portion of the subject property.

#### 4.2 AERIAL PHOTOGRAPHS

Aerial photographs, which include the subject and adjoining properties, were reviewed at Hamilton Library at the University of Hawaii at Manoa, Honolulu, Hawaii, and Google Earth.™ Photographs reviewed are summarized as follows:

Date: 5-14-51                      Aerial Photograph No.                      GSMF (Oahu)

The high altitude of this aerial photograph made specific details difficult to discern. However, the subject property was covered with plots of pineapple and sugar cane crops, divided by unpaved access roads. Poamoho Camp was observed at its present location, on the north adjoining area before Poamoho Stream Gulch.

The west adjacent area and the area to the north, across Poamoho Stream Gulch, appeared as agricultural land. The areas to the south, across Kaukonahua Stream Gulch, appeared densely developed as Schofield Barracks and Wahiawa town.

Date: 1958                              Aerial Photograph No.                      USGS Orthophotoquad, Oahu Island

The high altitude of this aerial photograph made specific details difficult to discern. However, the subject property appeared much as it did in the 1951 aerial photograph.





### 4.3 USGS TOPOGRAPHIC MAPS

Historic topographic maps for the subject property and vicinity were obtained from the Map Collection at Hamilton Library, University of Hawaii at Manoa, Honolulu, Hawaii for the period 1909-13 to 1998. The maps depicted the following:

#### **Quadrangle: Haleiwa, Hawaii Scale: 1:24,000 Series: 7.5 Minute**

- **1909-13:** The entire area of the subject property was depicted as undeveloped and/or agricultural land, with railroad tracks labeled "*Oahu Railway & Land Company*" traversing the east/northeast portion of the subject property. Some cultivated fields and plantation roads were also depicted in the east-northeast portion of the subject property, between the railroad tracks and Poamoho Stream Gulch. The current Wilikina Drive and Kaukonahua Road were shown as unlabeled, paved roadways. The current Schofield Barracks area to the south/southwest was labeled "*Military Reservation*," and Wahiawa town was depicted to the south/southeast. The areas to the west and to the north, across Poamoho Stream Gulch, were depicted as undeveloped agricultural land.
- **1927-30:** The subject property was depicted as agricultural land with segmented field plots, bordered by unimproved plantation roads. The current Wilikina Drive was labeled "*Kamehameha Highway*." The current Kaukonahua Road was labeled "*Kemoo Spur*." These two roadways converged at the west end of the subject property, at an area with several small structures labeled "*Kemoo Farm*." A cluster of several small structures labeled "*Kemoo Camp*" was depicted at the northeast boundary of the subject property, at the edge of Poamoho Stream Gulch. A small structure labeled "*Tank*" was indicated along Kamehameha Highway at the south/central edge of the subject property, next to Kaukonahua Stream Gulch.

The Karsten Warehouse was indicated immediately adjacent to the subject property where Kamehameha Highway intersects with Kaukonahua Road, with several small structures labeled "*Camp 7*" on the east adjacent area. The Oahu Railway & Land Company railroad was still depicted in the east/northeast area, with the added label, "*Helemano Extension*." Also, the southeast area of the subject property was labeled "*Galbraith*," and the east/central area was labeled "*Kukaniloko*."

The current Poamoho Camp site on the north adjoining area was labeled "*Camp 8*" and appeared smaller than its current size. No other significant changes were noted on the surrounding areas, except the area to the south/southwest was labeled "*Schofield Barracks*." Additional development was depicted in this area and in Wahiawa town. Also, a cluster of small structures labeled "*Kaukonahua Camp*" was depicted approximately one mile east/northeast of the subject property.

- **1943:** The agricultural field plots depicted on the 1927-30 topographic map were no longer shown on this map. However, a few unimproved plantation roads remained on the subject property. All of the current paved roads, including Kamehameha Highway, Wilikina Drive, Kamananui Road, and Kaukonahua Road, were indicated at their present locations. Kemoo Farm, located at the west end of the subject property, was renamed "*Kemoo Junction*," and the associated structures were no longer depicted. Kemoo Camp was still shown at the northeast boundary, and the "*Tank*" structure was still shown along Kamehameha Highway at the south/central edge of the subject property.





The current road called “Whitmore Avenue” was indicated along the east boundary of the subject property, but was labeled “Galbraith Road.” Three rectangular-shaped structures and a railroad track were depicted along the southeast side of this road, adjacent to the subject property. The railroad track was connected to the Oahu Railway & Land Company/Helemano Extension railroad, which was depicted alongside Kamehameha Highway in the east/northeast portion of the subject property. The Karsten Warehouse was still indicated immediately adjacent to the subject property, but the nearby Camp 7 was no longer depicted.

Camp 8 (currently Poamoho Camp) on the north adjoining area was renamed “Camp 9” on this map. The other adjoining properties showed no significant changes on this map.

- 1953: No significant changes were noted on the 1953 topographic map, except Camp 9 on the north adjoining area was renamed “Poamoho Camp” and was depicted with most of the current roads and structures.
- 1960: Kemoo Junction and Kemoo Camp were no longer shown, and the “Tank” structure at the south/central edge of the subject property was labeled “Water.” Another water tank was indicated alongside Kaukonahua Road in the west/central area. Wilikina Drive, Kaukonahua Road, and a portion of Kamehameha Highway were depicted as medium-duty roads. Kamananui Road and the northern portion of Kamehameha Highway were depicted as heavy-duty roads. The Karsten Warehouse was no longer depicted on the adjoining property. The three adjacent structures alongside Whitmore Avenue were no longer shown, but two similar structures were indicated to the northeast of these former structures. The railroads were no longer depicted in the east/northeast portion of the subject property. The surrounding properties showed no significant changes on this map, except Whitmore Village was depicted approximately ¼ mile east of the subject property.
- 1983: No significant changes were noted on the 1983 topographic map, except the two water tanks were no longer depicted on the subject property.
- 1998: No significant changes were noted on the 1998 topographic map, except the adjacent Karsten Warehouse was depicted and the Kukaniloko Birthstones State Monument was indicated at the southwest end of Whitmore Avenue.

No readily apparent evidence of *RECs* at the subject property was noted on the topographic maps reviewed, except for its past and current use as agricultural land. Agricultural operations typically utilize chemicals, such as pesticides and herbicides, which have a potential to impact the subject property.

#### **4.4 FIRE INSURANCE MAPS**

Fire insurance maps typically depict either the locations of manufacturing and industrial facilities within the city limits or potential hazards existing within individual building structures. In many cases, evidence of environmental concern, such as locations of USTs, can be found by reviewing fire insurance maps.

Bureau Veritas attempted to review Sanborn Fire Insurance Maps covering the subject property and adjoining properties at Hamilton Library located at the University of Hawaii, Manoa Campus. However, fire insurance maps covering the subject or adjoining properties were not available for review.



## 4.5 PRIOR OWNERSHIP

A Title Search Report for the subject property, dated August 23, 2011, was provided by Bank of Hawaii and prepared by Title Guaranty of Hawaii, Inc. Based on our review of the report, no environmental liens or AULs were found regarding the subject property.

Readily available records at the City and County of Honolulu Tax Assessor's Office were reviewed to assess past ownership of the subject property. According to the records, the subject property is currently comprised of nine adjoining land parcels designated as TMK Numbers: (1) 6-5-002: Parcels 10 and 25, and (1) 7-1-001: Parcels 2, 3, 5, 8, 12, 25, 26, and 28.

Past ownership and lease records indicate similar histories for all of the parcels that comprise the subject property. The earliest records, from 1944 and 1950, indicated the George Galbraith Trust Estate (the current owner) as the property owner, with California Packing Corporation listed as a lessee. California Packing Corporation changed its name to Del Monte Corporation in 1967. In the early 1960s, three of the subject parcels (TMKs: [1] 6-5-002: Parcel 10, and [1] 7-1-001: Parcels 3 and 12) included leases to Hawaiian Pineapple Company, Dole Corporation, and Castle & Cooke, Inc.

No readily apparent evidence of recognized environmental conditions at the subject property was noted in the ownership records reviewed, except for past and current leases to agricultural companies, including: California Packing Corporation, Del Monte Corporation, Hawaiian Pineapple Company, and Dole Corporation. Agricultural activities are of potential environmental concern because agricultural companies typically utilize chemicals, such as pesticides and herbicides, in their operations.

## 4.6 AGENCY CONTACTS

### 4.6.1 Building, Planning, and/or Zoning Departments

According to the City and County of Honolulu Planning and Permitting Department, the subject property includes the zoning designations, "Ag-1, Restricted Agriculture" and "P-1, Restricted Preservation." The State Land Use designation is "Agricultural District."

The City and County of Honolulu Department of Planning and Permitting database was reviewed to obtain historical use information on the subject property. Permits were listed in the database for some of the land parcels that comprise the subject property, as follows:

- **TMK Number: (1) 7-1-001: Parcel 003** - One permit, dated June 24, 1978, was issued for electrical work.
- **TMK Number: (1) 7-1-001: Parcel 005** - One permit, dated July 13, 2004, was issued for electrical work (replacement of meter only).
- **TMK Number: (1) 7-1-001: Parcel 008** - One permit, dated August 30, 2004, was issued for a new cattle gate.
- **TMK Number: (1) 6-5-002: Parcel 025** - One permit, dated August 22, 1973, was issued for electrical work; two permits, dated November 28, 1988, were issued for fencing and "other" work; and one permit, dated August 30, 2004, was issued for a new cattle gate.



- **TMK Number: (1) 6-5-002: Parcel 026** - One permit, dated August 30, 2004, was issued for a new cattle gate; and one permit, dated January 28, 2005, was issued for the demolition of a one-story warehouse.

No evidence of *RECs* at the subject property was noted in the building permit records reviewed.

#### **4.6.2 Fire Department**

The Honolulu Fire Department (HFD) Planning and Development Branch was contacted on October 29, 2012 to obtain information regarding any fires, complaints, permits, or violations involving hazardous material use, USTs, or ASTs on record for the subject and/or adjoining properties.

Bureau Veritas has not received a response from the HFD as of this writing. During the previous Phase I ESA conducted in September of 2011, Fire Battalion Chief Socrates Bratakos contacted Bureau Veritas and stated that there have been a total of 13 reports of fires occurring on or near the subject property since 1990. However, there have been no reported complaints, permits, or violations involving hazardous material use, USTs, or ASTs on record for the subject and/or adjoining properties.

#### **4.6.3 Department of Health/Solid and Hazardous Waste Branch**

The State of Hawaii, DOH, Solid and Hazardous Waste Branch, UST and Leaking Underground Storage Tank (LUST) databases were reviewed on September 9, 2011 to obtain information regarding environmental concerns or violations at the subject property.

The subject property was not identified in the UST or LUST databases.

However, the Poamoho Crate Yard facility (DOH Facility ID #9-201817), which is located adjacent to the subject property on the north side, was identified in the UST database as the location of three registered USTs that are currently listed as "*Permanently-Out-of-Use*" as of March of 1987. The tanks identified include: one 6,000-gallon gasoline UST, one 6,000-gallon diesel UST, and one 2,000-gallon diesel UST, each of which are listed as "*Permanently Out of Use.*" The locations of these USTs are listed as "*Poamoho Crate Yard/Field 9.*"

Based on further investigation, it was discovered that the two 6,000-gallon USTs were located at the Poamoho Camp Crate Yard facility, but the 2,000-gallon diesel UST was located in Field 9, more than two miles south/southwest of the subject property.

The two 6,000-gallon USTs were removed from the Crate Yard in 1987 and Woodward-Clyde Consultants conducted a subsurface investigation at the site in 1995. Two soil samples were collected from each of the UST pits at depths of 10 to 11 feet below ground surface, and were analyzed for TPH as gasoline, diesel, and oil. Based on the laboratory results, TPH was not detected in any of the soil samples collected from the Crate Yard UST sites.

#### **4.6.4 Department of Health/Hazard Evaluation and Emergency Response Branch**

Bureau Veritas performed a database review of the DOH, Hazard Evaluation and Emergency Response (HEER) records on September 9, 2011 regarding environmental concerns or violations at the subject property.

The subject property and adjoining properties were not listed in the HEER database reviewed.



#### 4.7 PREVIOUS ENVIRONMENTAL REPORTS OR OTHER DOCUMENTS

Phase I ESAs of the subject property were conducted by Bureau Veritas for Bank of Hawaii in January and July of 2007, January and October of 2008, May of 2009, April of 2010, and January and September of 2011. The previous Phase I assessments conducted prior to 2009 included areas that are no longer part of the subject property, including the former Karsten Warehouse, the warehouse foundations located along Whitmore Avenue, and gulch embankments at the edges of the subject property. These areas have been sold and are not included in this current Phase I ESA.

Findings in the previous Phase I ESA reports were similar and are summarized as follows:

***Phase I Environmental Site Assessment of the Galbraith Estate Property, Located in Wahiawa, Oahu, Hawaii, prepared by Bureau Veritas, dated February 1, 2007; September 27, 2007; April 15, 2008; December 8, 2008; July 10, 2009; June 10, 2010; February 1, 2011; and September 11, 2011***

These seven assessments, including the original Phase I ESA in 2007 and six updates, revealed the following evidence of *RECs*, as defined by ASTM, in connection with the subject property:

- Karsten Warehouse Area – During a previous Phase I ESA of the subject property, conducted by Bureau Veritas (formerly Clayton Group Services) for Goodwill Anderson Quinn & Stifel, LLP in 2004 (summarized below), the concrete slab floor of the warehouse included numerous surface stains and small piles of powdered chemicals. The concrete floor included seams and was observed with some abrasions and a few hairline cracks. The Karsten Warehouse has since been removed from the subject property; however, no soil sampling and analyses were conducted following the removal of the building, as recommended in Clayton's 2004 Phase I ESA report.

This finding was considered a recognized environmental condition because there was evidence of past releases at the Karsten Warehouse, with the potential to impact the underlying ground. It should be noted that the Karsten Warehouse area was not included in the three most recent Phase I ESA reports, dated July 10, 2009, June 10, 2010, and February 1, 2011. Because potential impacts are expected to be localized with a low potential for offsite migration, the Karsten Warehouse area is no longer considered a recognized environmental condition associated with the subject property.

- "DMC Well #5/Bott Well" – The DMC Well #5/Bott Well irrigation-well system includes a 10,000-gallon diesel AST within a concrete masonry unit (CMU) secondary containment structure. Diesel fuel from the AST is transported through aboveground piping to the diesel engine that drives the well pump. A significant amount of surface staining was observed on the concrete slab below the pump and motor. The diesel AST is reportedly no longer in use.

This finding was considered a recognized environmental condition because there was evidence of releases at the DMC Well #5/Bott Well irrigation-well system.

- Buried Dumpsites – During the previous Phase I ESAs conducted prior to 2009, a pile of 15 to 20 automobile (lead-acid) batteries, some partially buried, was observed along the southeast-central property boundary, near Lake Wilson/Kaukonahua Stream. Bureau Veritas plotted the coordinates (longitude/latitude) of this battery pile using a portable global positioning system (GPS) device.



In addition, during Bureau Veritas' previous site visit in April 2008, a new road for the United States Navy was under construction along the northeastern boundary, and extending through the northeast corner of the subject property. Initial construction of a bridge was underway at the nearby Poamoho Stream Gulch, and a road cutaway had been excavated for installation of the bridge. Small pieces of garbage were observed mixed in with the soil of the road cutaway along the edge of the subject property. According to personnel with the onsite construction contractor, Dick Pacific Construction Company, Ltd., a significant amount of garbage and debris was encountered during the excavation, including household-type garbage, wrecked cars, and car parts. Although the Navy roadway bridge is not part of the subject property, this discovery indicates the potential for additional garbage, cars, and car parts to be buried along the edges of the subject property immediately adjacent to the area excavated by the Navy.

This finding was considered a *REC* because there was evidence of partially buried batteries and buried cars and car parts, with a potential for releases to the subject property.

The following environmental conditions, which are not considered to be *RECs*, as defined by ASTM, were also revealed during the assessment:

- The majority of the subject property was formerly used as agricultural land. Agricultural chemicals such as pesticides and herbicides used on pineapple and sugar cane crops may have the potential to impact the subject property.

This finding was not considered to be a *REC* because, except for the Karsten Warehouse and former warehouse on Whitmore Avenue (both of which are no longer part of the subject property), there was no evidence of storage, mixing or excessive use of agricultural chemicals at the subject parcel/property. Moreover, according to Hawaii Revised Statutes (HRS) Chapter 128D Environmental Response Law, the presence of agricultural chemicals does not constitute a release of a hazardous substance. Section 128D-1 of the HRS excludes "any release resulting from the legal application of a pesticide product registered under the Federal Insecticide, Fungicide, and Rodenticide Act." However, if the subject property is ever developed for residential or commercial use, there are State of Hawaii, Department of Health guidelines for soil testing on former agricultural lands.

- Several small dumpsites, including abandoned vehicles, scrap metal, miscellaneous debris, and general garbage, were observed at various locations throughout the subject property. Bureau Veritas plotted the coordinates (longitude/latitude) of each dump site using a portable GPS device. No significant staining or other evidence of releases was observed at the dumpsites.

This finding was not considered a *REC* because there was no evidence of significant releases from the dumpsites. In addition, most of the dumpsites have been cleaned up.

Based on Bureau Veritas' five most recent site inspections in October 2008, May 2009, April 2010, January 2011, and September 2011, the previously identified abandoned vehicles, scrap metal, and other debris were not observed on the subject property because Bank of Hawaii hired a waste disposal contractor to remove these items. However, a few wrecked, abandoned vehicles, vehicle parts, an abandoned boat, and other items were found along dirt roads near and within Poamoho Gulch that were not observed prior to Bank of Hawaii's cleanup activities. In addition, some of the previously identified garbage along Kaukonahua Stream at the southeast end of the subject property



was still present during the most recent site visits. The previously identified squatters' encampments were no longer present along Kaukonahua Stream during the site visits on April 16, 2010, January 7, 2011, and September 8, 2011. The squatters were reportedly removed from the subject property on April 15, 2010. However, a few squatters' encampments were observed at the southeast end of the subject property during the most recent site visit on October 16, 2012.

A summary of other previous environmental reports and documents associated with the subject property is presented as follows:

***Phase I Environmental Site Assessment Report for the Del Monte Corp. Poamoho Site Plantation Lands, Wahiawa, Oahu, Hawaii, prepared by Clayton Group Services, Inc. (Clayton), dated July 26, 2004***

This Phase I ESA was conducted for the law firm, Goodsell Anderson Quinn & Stifel, LLP, and covered a large majority of the current subject property, plus several more land parcels that include the Poamoho Camp and Crate Yard Warehouses (TMK Number: [1] 7-1-001: Parcels 11, 30 and 31), which are not included in the current Phase I ESA.

The following *RECs* were identified in Clayton's 2004 Phase I ESA:

- Karsten Warehouse – Numerous surface stains and small piles of powdered chemicals were observed throughout the concrete slab floor of the warehouse. The concrete floor included seams and was observed with some abrasions, but only a few hairline cracks. Soil sampling with laboratory analyses for various contaminants was recommended.

This finding is no longer considered a *REC* for the subject property because the Karsten Warehouse is no longer part of the subject property, and there is a low potential for contaminants to migrate offsite and onto the subject property. The Karsten Warehouse has been removed; however, it is still considered a *REC* for the property it existed on because no soil testing was conducted following the removal of the building.

- Crate Yard Warehouses (located on east adjacent parcel from TMK Number: (1) 7-1-001: Parcel 3 on the north-central portion of the current subject property) – Numerous surface stains and small piles of powdered chemicals were observed across the concrete slab floor inside the south warehouse (Warehouse 1), and on the dirt floor of the north warehouse (Warehouse 2). Also, approximately ten 5-gallon buckets of waste oil and one 300-gallon AST labeled "For Petroleum Products" were observed to the south of Warehouse 1. These containers were not located within secondary containment. A total of approximately 130 square feet of heavy surface staining was observed on the soil below these containers and on the surrounding area.

In addition, a 10,000-gallon diesel AST (without secondary containment) was observed outside the fence line of the Crate Yard, on the south side. Approximately 100 square feet of heavy surface staining was observed on the soil below this AST.

This finding is no longer considered a *REC* for the subject property because the Crate Yard Warehouse area is no longer part of the subject property, and there is a low potential for contaminants to migrate offsite and onto the subject property. However, it is still considered a recognized environmental condition for the Crate Yard Warehouse area.



- “DMC Well #5/Bott Well” – The DMC Well #5/Bott Well irrigation-well system included a 10,000-gallon diesel AST within a CMU secondary containment structure. Diesel fuel from the AST is transported through aboveground piping to the diesel engine that drives the well pump. Surface staining was observed on the concrete slab below the pump and motor, and soil staining was observed at the fence-line around a 55-gallon oil drum stored directly on the bare soil.

This finding is still considered a *REC* because evidence of releases is still present at the DMC Well #5/Bott Well irrigation-well system, and no soil testing has been conducted.

- Turner Station & Warehouse Foundations by Dole Corp., Whitmore Avenue – The former uses of the DMC Turner Station and the concrete warehouse foundations located along Whitmore Avenue were not determined during this assessment. Turner Station was reportedly a truck stop/loading area, but it was unknown whether agricultural chemicals were loaded, stored or mixed at this site. In addition, the former warehouses may have been used to store or mix chemicals such as herbicides and pesticides.

This finding is no longer considered a *REC* because, based on a subsequent interview with Mr. John McHugh (Land Manager of the subject property), no pesticides, herbicides, or other chemicals were stored, mixed, or used in the vicinity of the Turner Station and former warehouse on Whitmore Avenue.

- Unauthorized dumping (fields, gulches, embankments, and roadsides) – Several dumpsites, including scrap metal from vehicles, heavy equipment and other various sources were observed throughout the subject property. These dumpsites are primarily located on the embankments at the edges of the fields that descend into gulches, mainly along the Poamoho Gulch and Kaukonahua Gulch borders of the subject property. Based on Bureau Veritas’ 2007 survey using a global positioning system (GPS) device, the dumpsites along the edges of Kaukonahua Gulch were determined to not be on Galbraith lands.
- Abandoned Vehicles and Heavy Equipment – Abandoned vehicles and heavy equipment were observed along borders of agricultural fields and outside the Karsten and Crate Yard Warehouses. Abandoned vehicles were also observed in the field above Poamoho Camp on the east side of Kamehameha Highway, on the lower embankment by the bridge overpass above the North Fork of Kuakonahua Stream/Wahiawa Reservoir, and in the public fishing access to Lake Wilson, to the south of Kamehameha Highway and Whitmore Avenue.

Based on Bureau Veritas’ subsequent onsite inspections, the Karsten Warehouse and most of the abandoned vehicles and heavy equipment had been removed from the subject property. The heavy equipment was formerly observed near the Crate Yard Warehouses (Poamoho Camp parcel) in 2004, and because this area had been sold and is no longer part of the Galbraith property, it is no longer an issue for the subject property. During the more recent site visits, no significant staining or other evidence of releases was observed in the vicinity of the formerly abandoned vehicles. However, some of the small dumpsites still existed on the subject property. No other significant changes were observed from Clayton’s 2004 Phase I ESA, except the subject property was no longer used for agricultural purposes.



### **DMC Well #5/DMC Bott Well (Well 3-3103-01)**

Bureau Veritas reviewed five reports associated with groundwater well number 3-3103-01 (aka DMC Well #5 or DMC Bott Well), which is located on TMK Number: (1) 6-5-002: Parcel 025 of the subject property. These reports, along with a summary of the findings and conclusions, are listed as follows:

- ***Final Record of Decision for Operable Unit 2, Schofield Army Barracks, Island of Oahu, Hawaii***, prepared for U.S. Army Environmental Center, Installation Restoration Division by Harding Lawson Associates, August 12, 1996
- ***Final Operation and Maintenance and Long-Term Groundwater Monitoring Plan for Operable Unit 2, Schofield Army Barracks, Island of Oahu, Hawaii***, prepared for U.S. Army Environmental Center, Installation Restoration Division by Harding Lawson Associates, September 13, 1996
- ***Public Health Assessment, Schofield Barracks, Wahiawa, Honolulu County, Hawaii***, prepared by the Agency for Toxic Substances and Disease Registry, February 11, 1998
- ***Final First Five-Year Review Report for Operable Unit 2 and Operable Unit 4, Schofield Army Barracks, Island of Oahu, Hawaii***, prepared for the U.S. Department of the Army by Harding ESE, September 4, 2002
- ***Galbraith Estate Well***, Wai Engineering, Inc., May 4, 2004

In 1985, trichloroethylene (TCE) was detected in drinking water supply wells at Schofield Army Barracks. The Army began removing contaminants from the water in 1986 using an air stripping facility. The US Environmental Protection Agency (EPA) placed Schofield Army Barracks on the National Priorities List (NPL) in August 1990. Schofield Army Barracks was subsequently divided into four operable units (OUs) to facilitate orderly investigations of the source(s), nature, and extent of contamination, and to enable the design of necessary and appropriate remedial measures.

Operable Unit 2 (OU2) includes the groundwater beneath Schofield Army Barracks. Groundwater is located 550 to 650 feet below ground surface (bgs). During the remedial investigation of OU2, TCE, carbon tetrachloride (CCl<sub>4</sub>), antimony, and manganese were detected above Maximum Contaminant Levels (MCLs). MCLs are established by the EPA and represent the maximum concentration of a chemical that is allowed in a public drinking water system. Contaminants were detected in two plume areas: (1) beneath the former landfill, and (2) beneath the Schofield Barracks East Range and Wheeler Army Airfield. The detections of antimony and manganese were determined to be anomalous. Therefore, only TCE and CCL<sub>4</sub> were retained as chemicals of concern (COCs) during the Feasibility Study. The landfill was determined to be the source of the CCl<sub>4</sub> in the groundwater. The source of the TCE in the groundwater could not be identified.

A baseline risk assessment was prepared and remedial alternatives were developed during the Feasibility Study. The baseline risk assessment concluded that the principal threat to human health and the environment posed by OU2 could be addressed by minimizing human exposure to contaminated groundwater through treatment prior to its entering the drinking water distribution system. A remedial alternative (air stripping) was selected and presented in the Record of Decision (ROD) for OU2 in 1996. The selected remedial alternative includes the treatment of COCs present in groundwater at only those points where it is extracted for domestic use by air stripping at the wellhead prior to discharge to the distribution system. A long-term groundwater monitoring program and five-year site reviews were also included in the selected remedy. Schofield Army Barracks was delisted from the NPL in August 2000.





Groundwater modeling was performed in the vicinity of Schofield Army Barracks as part of the Remedial investigation to provide estimates of travel times of contaminated groundwater to potential downgradient receptors. Results of the computer modeling indicated that under the most conservative assumptions, TCE concentrations above the MCL could reach downgradient receptors to the south in approximately 100 years. The modeling also indicated that groundwater flow from the former landfill will likely transport TCE very slowly northward.

The first Five-Year Review Report for OU2 was prepared in 2002. The Five-Year Review Report indicated that the results from the monitoring well network show that the plumes have not migrated down-gradient and should not impact additional wells. The EPA agreed with the Army's conclusion that the groundwater remedy was functioning properly and is protective of human health and the environment. In addition, the EPA indicated that a reduction in the frequency of monitoring for the groundwater wells could be considered.

Bureau Veritas reviewed the report entitled, "Second Five-Year Review Report for Operable Units 2 and 4, Schofield Army Barracks, Sites 12 and 19, Oahu, Hawaii," dated July 2007. According to the report, the concentrations and distribution of TCE and CCl<sub>4</sub> had changed very little since 2002. Based on the relative stability of the concentrations over time, the report concluded that the monitoring frequency could be reduced.

The well on the subject property, Well 3-3103-01 (aka DMC Well #5 or DMC Bott Well), is located approximately one mile to the northeast of the contaminant plume beneath the former landfill. Because it is an irrigation well, it would not be considered for remediation under the remedy. The baseline risk assessment performed for OU2 indicated that the maximum TCE and CCl<sub>4</sub> concentrations measured in groundwater beneath Schofield Army Barracks and Wheeler Army Airfield are within acceptable risk ranges for irrigation and industrial use without treatment.

The subject well is part of the long-term groundwater monitoring network, which is part of the selected remedial alternative for OU2. The remedial alternative is described within the ROD for OU2 of Schofield Army Barracks and its Addendum (Final Operation and Maintenance and Long-Term Groundwater Monitoring Plan for Operable Unit 2, Schofield Army Barracks). Sampling of the well is required by the State of Hawaii Department of Health as part of the selected remedial alternative for Schofield Army Barracks OU2.

The subject well lies in an area where the groundwater is described as a zone of mixing/stagnation. Therefore, it is not located down-gradient of the contaminant plumes. While computer modeling of contaminant transport in groundwater indicated a greater potential for migration to the south of Schofield Army Barracks, the modeling also indicated that groundwater flow from the former landfill area will likely transport TCE very slowly northward. In conservative computer modeling efforts, the TCE plume approaches, but does not reach Well 3-3103-01 after 100 years. The results from the first five years of groundwater monitoring indicated that the plumes have not migrated downgradient. Based on the results of the first five years of monitoring, the Army concluded that additional wells should not be impacted.

The subject well has been sampled generally semi-annually since 1998 as part of the long-term groundwater monitoring program. The samples have been analyzed for both TCE and CCl<sub>4</sub>. No measurable concentrations of either contaminant have been detected in any of the samples.



## **Summary of Environmental Issues**

The environmental issues associated with Well 3-3103-01 are summarized below:

- Well 3-3103-01 is part of a long-term groundwater monitoring network for OU2 of the adjacent former NPL site, Schofield Army Barracks.
- Groundwater beneath Schofield Army Barracks is contaminated with TCE and CCl<sub>4</sub>.
- The closest contaminant plume (i.e., the plume under the Former landfill of Schofield Army Barracks) is located approximately one mile to the southwest of the well.
- The subject well is located cross-gradient of the former landfill plume in an area described as a groundwater zone of mixing and stagnation.
- Groundwater modeling performed during the Remedial Investigation of OU2 indicated that groundwater flow from the former landfill area will likely transport TCE very slowly northward. In conservative computer modeling efforts, the TCE plume approaches, but does not reach Well 3-3103-01 after 100 years.
- The subject well has been sampled generally semi-annually since 1998 as part of the long-term groundwater monitoring program. No measurable concentrations of either contaminant (TCE or CCl<sub>4</sub>) have been detected in any of the samples.
- Groundwater monitoring results from the first and second five-year reviews indicate the plumes are not migrating downgradient and should not impact additional wells.

The 2004 report by Wai Engineering Inc. of Mililani, Oahu, Hawaii provided an assessment of the current condition, use and value of the irrigation well located on the Del Monte Corp. (DMC) Poamoho plantation lands, referred to as DMC Well #5/Bott Well and/or State Well ID #3103-01. The report identifies the well location; history; well specifications; well performance; process control components; present value; maintenance requirements; starting, operating and stopping procedures; projected operating and closure costs; and copies of the state well registration form and AST registration form for the associated diesel fuel tank serving the well pump system.

It should be noted that the EPA delisted the Schofield Barracks site from the NPL in 2000 after the Army completed all work necessary to protect human health and the environment.

### ***40 CFR Part 300 National Oil Hazardous Substances Pollution Contingency Plan; National Priorities List, Notice of Intent for Partial Deletion of Del Monte Corp (Oahu Plantation) Superfund Site from the National Priorities List; Oct. 16, 2003; Environmental Protection Agency (EPA)***

On September 28, 1995, Del Monte Fresh Produce (DMFP) entered into an administrative order on consent (AOC) with the EPA. Under the AOC, DMFP prepared and EPA approved the Remedial Investigation and Feasibility Study (RI/FS) Work Plan. The RI/FS Work Plan included plans to investigate two potential sources of concern on the Poamoho Section of the DMFP plantation lands Superfund site, which is comprised of the Kunia Section and Poamaoho Section. The planned investigations of the Poamaoho Section included: (1) a former fumigant drum burial site (drum site), and (2) a closed underground storage tank site (tank site). Both of these sites are located at the Poamoho Crate Yard, which is located offsite, just west of the Poamoho Camp on the north adjoining property.



### **Drum Site**

In the early 1970s, empty soil fumigant drums were buried behind an area known as the Poamoho Crateyard. Soil samples were collected at three locations within the burial area, which measured 25 feet by 65 feet. Samples were collected at varying depths directly beneath the buried material. Soil analyses demonstrated that no EDB, DBCP or other chemicals of potential concern (COPCs) associated with fumigant drum burial were present in the soils.

Heptachlor at 2.3 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ) was detected in one sample at 12 to 14 feet bgs. This level is well below the EPA's residential health-based guideline for heptachlor of 99  $\mu\text{g}/\text{kg}$ . A soil gas sample was also collected from each of the three sampling locations at the base of the buried debris. The compounds detected in soil gas were low and do not represent a risk to human health or the environment. Because soil gas vapors can migrate to ground surface and disperse into the air, an analysis was conducted to estimate the potential health risk from inhalation.

Laboratory analyses showed that the levels of chemicals in the air that people might breathe were far lower than EPA's health-based guidelines. In addition, the soil gas and soil concentrations do not pose a risk to groundwater due to the low concentrations detected and the great depth to the aquifer (600 – 700 feet bgs).

### **Tank Site**

In 1987, DMFP removed two 6,000-gallon steel underground fuel storage tanks ("USTs") from the Poamoho Crate Yard that previously contained either diesel fuel or gasoline. In March 1997, soil in the pits beneath the two former USTs was sampled. The samples were analyzed for petroleum and associated constituents. No petroleum or associated constituents were detected in these samples.

### **Other Potential Source Areas**

In August 2002, DMFP informed the EPA of two "Other Potential Source Areas" recently identified to them by a retired Del Monte Corporation employee. The areas include: (1) the Former Fumigant Mixing Area near the Karsten Warehouse, and (2) the Rag Disposal Area near the southern end of Field 202A. The former fumigant mixing area near the Karsten warehouse was used during the late 1950s and early 1970s for mixing of previously registered soil fumigants with diesel fuel.

The soil fumigants included ethylene dibromide (EDB) and possibly registered soil fumigants with diesel fuel. The soil fumigants included EDB and possibly Shell DD (a mixture of 1,2-dichloropropane, 1,3-dichloropropane, 2,3-dichloropropane, 3,3-dichloropropane and traces of trichloropropane). Occasionally, mixing operations in this area resulted in spills of EDB onto the soil. Rags used to wipe down the fumigant drums were discarded in the Rag Disposal Area, which was a debris disposal and burn area operated by the City and County of Honolulu.

Soil samples were collected in these newly identified areas in September and October of 2002. The boundary of the Former Fumigant Mixing Area measures approximately 30 feet by 45 feet. Soil samples were collected at varying depths within this area and analyzed for volatile organic compounds (VOCs). The only compound detected in any of the samples at a concentration greater than the EPA's residential health-based guideline was 1,2,3-trichloropropane (TCP). TCP was detected at 10 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ) at 15 feet bgs. EPA's residential health-based guideline for TCP is 5  $\mu\text{g}/\text{kg}$ .



Additional sampling at depths below 15 feet was conducted in February 2003 to determine the extent of TCP. The highest level detected was 4.4 µg/kg. Since soils shallower than 5 feet did not contain TCP at concentrations above residential health-based guidelines, risks via skin contact, ingestion, inhalation, dust entrainment or surface runoff should not be present. The limited extent and relatively low concentrations of TCP, and the extensive depth to groundwater (approximately 700 feet) indicate that risks to groundwater from soil leaching are not applicable.

Sixteen test pits were excavated to identify the boundaries of the refuse disposal and burn site where rags used to wipe down fumigant drums were discarded. The test pits identified an oblong area, approximately 100 feet wide by 130 feet long, at the top edge of a natural gulch. The burn debris consisted of broken glass, ash, and traces of burned metal mixed with soil.

The type and construction of the glass bottles found within the burn debris indicated that the debris likely originated during the time frame when the DMC employee indicated rags were discarded in the area. The age of the burn debris, combined with the location, indicated that the burn debris material represents the Rag Disposal Area.

Sampling at the Rag Disposal Area differed from the Former Fumigant Mixing Area, because the depth of the debris was unknown, and most critical samples would be the soil samples beneath the disposal area. The base of the debris would be the most likely area for potential accumulation of chemicals due to their downward migration through the unconsolidated debris.

Soil core samples were collected within the debris until the underlying soil was encountered. Soil samples were collected from the soil immediately beneath the debris and approximately 3 to 5 feet beneath the bottom of the debris.

The drilling indicated that the burn debris was fairly consistent in composition and varied in depth relative to distance from the gulch. The closer to the gulch, the deeper the burn debris observed. Debris was detected as deep as 57 feet in one sample. A total of 19 soil samples were collected in the Rag Disposal Area and analyzed for VOCs. Six of these samples were also analyzed for TPH-diesel and Lindane, Toxaphene and Heptachlor. No compounds were detected at concentrations above EPA's residential health-based guidelines.

Further information regarding the investigations conducted at the Former Fumigant Mixing Area and the Rag Disposal Area can be found in the March 2003 Investigation Results for Additional Other Potential Source Areas.

The EPA has determined that the Poamoho Section is not a source of release that poses a potential threat to human health or the environment. Furthermore, because the deep aquifer beneath the Poamoho Section is upgradient of the Kunia Well, the groundwater contamination in the vicinity of the well has not migrated to it, and is not expected to do so. Therefore, EPA proposed to delete the Poamoho Section of the site from the NPL. The Kunia Section will remain on the NPL and is not the subject of this partial deletion. A Record of Decision (ROD) describing the selected cleanup plan for the Kunia Section was signed on September 25, 2003.

In a letter dated June 19, 2004, the State of Hawaii through its DOH, concurred with EPA's decision to delete the Poamoho Section of the Del Monte Superfund site. The site was subsequently delisted from the NPL.



## **E-mail Correspondence between Clayton Group Services, Inc. and Ms. Grace Simmons of the State of Hawaii, Department of Health (DOH), dated December 13, 2006**

This e-mail correspondence was sent by Clayton to the DOH in response to the cleanup of computer debris reported on the subject property on October 20, 2006. The computer debris was located along an unpaved farm road on the northeast portion of the subject property, approximately 3,000 feet northwest of Whitmore Avenue. The e-mail stated the following:

*“As discussed, the electronic waste (i.e. illegally dumped computer debris) located on the Galbraith Trust property near Whitmore Village, Oahu, Hawaii was removed from the ground surface of the site and placed into 1-cubic yard boxes. This work was completed on November 9, 2006. The material was segregated into two waste streams, which resulted in six 1-cubic yard boxes containing generally undamaged computer related debris, and two 1-cubic yard boxes containing damaged/shattered/broken monitors. On November 9, 2006, the six 1-cubic yard boxes were transported from the site for disposal as a recyclable waste, by Pacific Commercial Services (PCS). The two 1-cubic yard boxes remained on-site pending the results of analytical testing to assess toxicity levels of the potentially hazardous material.*

*Clayton Group Services collected a sample of the waste contained within the two 1-cubic yard boxes. The sample was forwarded to the Test America Laboratory in Aiea, Hawaii for analyses. The sample was analyzed for TCLP RCRA 8 metals, as well as TCLP Copper. A draft copy to the sample results are presented in the attachment below. Analytical testing reported no detectable concentrations with the exception of lead. TCLP lead was reported at a concentration of 0.801 mg/L, which is significantly below the Maximum Concentration of Contaminants for the Toxicity Characteristic as defined in 40 CFR § 261.24. Therefore, the waste is not considered a hazardous waste.*

*By the end of the week, PCS, under the supervision of Clayton Group Services, will transport the remaining two 1-cubic yards boxes from the site for disposal as a recyclable waste.*

*As agreed to in Monday’s conversation, we will prepare a report that documents the activities completed at the site including the sample collection methodology and analytical results.”*

Following the cleanup and packaging of the computer debris, Clayton collected seven soil samples from the ground surface where the debris was found to assess concentrations of metals in the soil. The soil samples were collected from the seven most visibly impacted areas and were analyzed for total RCRA 8 metals and total copper. Based on the laboratory results, no elevated levels of metals were identified, with the exception of cadmium, which was identified at concentrations slightly above the Environmental Action Level (EAL) of 12 parts per million (ppm), which is based on “terrestrial ecological impacts.” However, the concentrations are below the “direct exposure” EAL of 38 mg/kg and the EPA preliminary residential goal of 32 mg/kg.

The two boxes of computer debris waste were left onsite temporarily. Based on the laboratory results, the packaged debris was considered non-hazardous waste. Disposal of the two boxes as non-hazardous waste was conducted, following approval by the DOH, on March 26, 2007. At that time, it was noted that three wrecked, burned, and abandoned cars were present onsite.

During Bureau Veritas’ site visit in July of 2007, three patches of burned debris, broken glass, fiberglass vehicle body parts, and metal scraps were observed in the area of the former computer debris. These patches were remnants of the three abandoned cars observed onsite during removal of the computer debris on March 26, 2007.



During Bureau Veritas' previous site visit on January 15, 2008, a new road for the United States Navy was under construction along the northeastern boundary of the subject property. The area of the former computer debris and car remnants had been excavated as part of the road construction. Initial construction of a bridge was underway at the nearby Poamoho Stream Gulch, and a road cutaway had been excavated for installation of the bridge. Small pieces of garbage were observed mixed in with the soil of the road cutaway. According to personnel with the onsite construction contractor, Dick Pacific Construction Company, Ltd., a significant amount of garbage and debris was encountered during the excavation, including household-type garbage, wrecked cars, and car parts. Although the Navy roadway is not part of the subject property, this discovery indicates the potential for additional garbage, cars, and car parts to be buried along the edges of the subject property immediately adjacent to the area excavated by the Navy for its roadway."

***Debris Disposal Report, Galbraith Trust Property, Portion of Tax Map Key Number: (1) 7-1-001: Parcel 005, Whitmore Village, Hawaii, prepared by Clayton Group Services, Inc., A Bureau Veritas Company, dated January 24, 2007***

Bank of Hawaii as Trustee for the George Galbraith Estate Trust retained Clayton Group Services, Inc. (Clayton), a Bureau Veritas company, to conduct the consolidation, packaging, and disposal of electronic waste from the subject property, located in the vicinity of town of Whitmore Village.

Electronic waste consisting of computer hardware was illegally dumped at the site by unknown persons during October 2006. Reportedly, the Defense Reutilization and Marketing Office (DRMO) informed the DOH of the dumping on October 22, 2006. The electronic waste is believed to be formerly owned by the U.S. Navy and was formerly sold as surplus.

On October 23, 2006, a Bank of Hawaii representative escorted members of the DOH, as well as a Clayton representative, to the area where the illegal dumping occurred. A number of computer monitors, central processing units (CPUs), and keyboards along with a smaller number of printers and copiers were observed discarded along a dirt road on the subject property. The majority of the electronic waste was spread along an approximately 500 meters long section of a dirt road on TMK Numbers (1) 7-1-001: Parcel 005. A very small quantity of electronic waste was present on an adjacent parcel identified as TMK Number: (1) 7-1-002: Parcel 010.

The purpose of this project was to: (1) remove the electronic waste from the ground surface and properly dispose of the material, (2) collect and analyze soil samples for the contaminants of potential concern, (3) compare the soil sample analytical results to the DOH Interim Final EALs; and (4) document disposal and investigation related activities.

On November 9, 2006, Clayton and its subcontractor, Pacific Commercial Services LLC, mobilized to the site to transfer the electronic waste from the ground surface into 1-cubic yard corrugated cardboard boxes. The electronic waste had been dumped along the dirt road at the site. Prior to the removal of electronic waste from the site, wooden stakes were driven into the ground surface at seven locations where broken computer monitors were observed. At the direction of Clayton, Pacific Commercial Services removed electronic waste from the ground surface and segregated the waste into two waste streams, including: (1) computer components that appeared generally undamaged, and (2) broken monitors and small pieces.

This activity generated a total of six 1-cubic yard boxes containing generally undamaged computer equipment and two 1-cubic yard boxes containing broken monitors and small pieces of electronic waste. On November 9, 2006, Pacific Commercial Services, LLC transported the six 1-cubic yard



boxes, containing generally undamaged computer equipment, from the site. The boxes were reportedly consolidated with other electronic waste and were subsequently transported to the Veolia Environmental Services facility, located at 5736 West Jefferson, Phoenix, Arizona 85043, for recycling.

On November 9, 2006, representative samples were collected from two 1-cubic yard boxes, which contained broken monitors and other small pieces of debris. These two boxes contain a mixture of debris, which consisted of the following material in the approximate percentages listed: glass fragments (35 percent), plastic (20 percent), internal components (20 percent), and soil (25 percent). In collecting the samples, field personnel attempted to gather a similar percentage of material in the sample collection jar as was approximately contained within the box. In addition, seven soil samples were collected from the ground surface to assess potential concentrations of contaminants present in the soil. Soil from each of the sampled locations was collected after the debris was removed. The soil samples were collected from the soil present from the surface to a depth of 1 inch bgs.

Following sample collection, the two 1-cubic yard boxes, which contained broken monitors and other small pieces of debris, were covered with plastic sheeting, wrapped with yellow caution tape, and left on site pending the results of the waste characterization analysis.

The samples that were collected for waste characterization analysis of the two 1-cubic yard boxes of broken monitors and debris were composited and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) copper and the eight Resource Conservation and Recovery Act (RCRA-8) metals. The TCLP analysis reported no detectable concentrations of arsenic, barium, cadmium, chromium, copper, mercury, selenium, and silver in the sample. A detectable concentration of lead was reported in the sample. However, lead was detected at a concentration of 0.801 milligrams per liter (mg/L), which is below the regulatory limit of 5.0 mg/L, as defined in 40 Code of Federal Regulation (CFR) § 261.24.

The seven soil samples were analyzed for total RCRA 8 metals and total copper. Arsenic, barium, chromium, copper, lead and mercury were detected in the seven samples at concentrations below the DOH Interim Final EAL. Selenium and silver concentrations were not detected in the seven samples and the method detection limits were below the respective DOH Interim Final EAL.

Cadmium concentrations were detected in the seven samples at concentrations ranging from 2.91 milligrams per kilogram (mg/kg) to 18.5 mg/kg. Four of the seven soil samples reported cadmium concentrations above the DOH Interim Final EAL of 12 mg/kg, which is based on "terrestrial ecological impacts". However, none of the cadmium concentrations exceeded the DOH Interim Final EAL of 39 mg/kg, which is based on "direct exposure" concerns.

For cadmium, Clayton concluded that the direct exposure EAL of 39 mg/kg should be applied to this site for the following reasons:

1. The terrestrial eco-toxicity EALs were taken directly from guidance developed by the Ontario Ministry of Environment and Energy. As stated in Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Volume 2, "Soil action levels for terrestrial ecological concerns can be highly specific to the species of fauna or flora potentially impacted as well as the specific form of the metal present and the geochemistry of the soil." This site is situated in a former agricultural field and is not in area that is considered a sensitive ecological habitat.



2. The direct exposure EAL of 39 mg/kg is comparable to the DOH Tier 1 Soil Action Level of 38 mg/kg and the EPA residential PRG of 37 mg/kg.

Clayton recommended that no further action is necessary regarding the surface soils at the site, since: (1) cadmium concentrations did not exceed the DOH Interim Final EAL of 39 mg/kg, and (2) the remaining metals were either not detectable or were present at concentrations below the DOH Interim Final EAL.

Furthermore, since waste characterization analysis of the sample collected from the two 1-cubic yard boxes reported TCLP concentrations that were either not detectable or were below the regulatory limit, the waste is not a hazardous waste, per 40 CFR § 261.24. Clean Harbors Environmental Services, Inc. (Clean Harbors) has reviewed the Waste Materials Profile Sheet and has accepted the waste for disposal as a non-hazardous waste. Clayton recommended that the two 1-cubic yard boxes that remain onsite be removed and transported to the Clean Harbors Aragonite, LLC facility located in Aragonite, Utah.

Following submission of this report to the DOH, Solid and Hazardous Waste Branch, a letter was sent to Bank of Hawaii from the DOH. The letter, dated March 12, 2007, stated that the DOH reviewed Clayton's Debris Disposal Report and determined that disposal as detailed in the Report is acceptable. Furthermore, the letter stated that the DOH is satisfied that the Bank of Hawaii has met its legal obligations and responsibilities with regards to its stewardship of the subject site. A copy of the DOH letter is included as Appendix E.

**Letter Report for the Disposal of Batteries and Limited Soil Sampling at the George Galbraith Trust Estate Property, Located at Tax Map Key (TMK) Number: [1] 7-1-001: Parcel 021 in Wahiawa, Oahu, Hawaii, prepared by Bureau Veritas North America, Inc., dated March 24, 2008**

During the previous Phase I ESAs conducted by Bureau Veritas prior to 2009, a pile of approximately 15 to 20 automobile (lead-acid) batteries, some partially buried, were observed along the southeast-central boundary of the subject property, near Lake Wilson/Kaukonahua Stream. The latitude/longitude coordinates (Longitude 21°29' 51.9" North, Latitude 158° 2' 50.7" West) were recorded using a portable GPS device. This finding was considered a recognized environmental condition because there was evidence of partially buried batteries with a potential for releases to the subject property.

Bank of Hawaii contracted Bureau Veritas to: (1) remove the batteries from the site and properly dispose of them at an approved disposal facility, (2) collect and analyze soil samples for contaminants of potential concern (lead), (3) compare the analytical results to the DOH EALs, and (4) document disposal and investigation related activities.

On February 26, 2008, the batteries were found and observed to be in various conditions, including those with intact battery cells (battery fluid still contained in the battery) and those with broken housings or missing caps that were empty (did not contain battery fluid). An additional area, approximately 20 feet in radius from the abandoned batteries, was also partially cleared and inspected for additional batteries or hazardous materials. One 5-gallon propane tank was located in the additional area inspected. After the batteries were removed, the ground surface was inspected for indications of contamination. The ground surface did not exhibit any typical signs of contamination, such as soil staining or distressed vegetation. Two surface soil samples were collected from the area immediately below the former battery location.





All of the batteries and the propane tank were removed from the property by a licensed disposal subcontractor, Pacific Commercial Services LLC (PCS). The batteries were properly disposed of at PCS's recycling facility located at 5 Sand Island Access Road, #931, in Honolulu, Hawaii. PCS provided a non-hazardous waste manifest for the disposal of the batteries and propane tank, which was signed by Mr. Kevin Lam, the representative for the Bank of Hawaii as a trustee for the George Galbraith Estate (and not as an individual).

The two soil samples were delivered to TestAmerica analytical laboratory located in Aiea, Hawaii following standard chain-of-custody procedures. Both soil samples were analyzed for total lead using the EPA Method 6010B. The analytical results reported detectable concentrations of total lead at 22.3 mg/kg and 27.8 mg/kg. These results were compared to the DOH EALs for areas where groundwater is considered a current or potential source of drinking water and is less than or equal to 150 meters to a surface water body. The Interim Final EAL of 200 mg/kg is based on ecotoxicity. The analytical results for the surface soil samples indicated that the soil was not impacted with total lead above the DOH Interim Final EAL, based on ecotoxicity.

***Soil Remediation and Environmental Investigation Report, The Galbraith Estate Property, Irrigation Well and Pump System, 65-1155 Kaukonahua Road, 65-1155 Kaukonahua Road, (TMK Number: [1] 6-5-002: Parcel 025), Wahiawa, Hawaii, prepared by Bureau Veritas North America, Inc., dated June 5, 2012***

The Trust for Public Land retained Bureau Veritas to conduct soil remediation to remove petroleum-impacted soil and conduct a limited soil investigation at the DMC Well #5/Bott Well irrigation well located at 65-1155 Kaukonahua Road (portion of TMK: [1] 6-5-002: Parcel 025), Wahiawa, Hawaii. During previous Phase I ESAs that included this site, stained concrete foundation structures and stained soil adjacent to the pump motor and well pump were observed, suggesting a release of petroleum hydrocarbons to the soil from the pump and motor.

The purpose of this project was to remove the oily residue from the concrete foundation structures, excavate to the extent possible the stained soil adjacent to the pump motor and well pump, and to assess the nature and extent of the impacts to the soil from the release.

On March 21, 2012, Bureau Veritas supervised a contractor to pressure wash the oily residue from the concrete foundations and well pump and pump motor, and excavate the visibly stained soil observed at the west end of the pump motor foundation, and the west end of the pump foundation. A contractor excavated the visibly stained surface soil observed at the west end of the pump motor foundation and on the north and west sides of the pump foundation. The excavation was restricted to approximately two feet below ground surface (bgs) to prevent undermining the concrete structure due to the presence of pea gravel sub-grade beneath the pump motor foundation. During the excavation activities, the soil was observed for evidence of staining and petroleum odors. Visible staining appeared to be confined to the top six to eight inches of the soil.

Following the completion of the excavation, two multi-increment confirmation soil samples were collected. Sample Gal Well 01 was collected from the sides and bottom of the excavation adjacent to the pump motor. Sample Gal Well 02 was collected from the bottom of the pump excavation. The two confirmation soil samples were submitted for laboratory analyses of total petroleum hydrocarbons (TPH) as diesel range organics (TPH-DRO), TPH as residual range organics (TPH-RRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), and polynuclear aromatic hydrocarbons (PAHs).



The analytical testing reported that TPH-RRO was detected in confirmation sample Gal Well 01 at a concentration of 4,500 milligram per kilogram (mg/kg) and in sample Gal Well 02 at a concentration of 2,700 mg/kg. These concentrations are above the DOH Tier 1 EALs of 500 mg/kg for TPH-RRO. TPH-DRO, BTEX, and PAHs were not detected in the two confirmation soil samples at concentrations that exceeded the laboratory method reporting limits (MRLs).

Following the analyses of the confirmation samples, the excavations were backfilled and compacted. Due to the presence of TPH-RRO in the two confirmation soil samples at concentrations above the HDOH Tier 1 EAL, four soil borings were installed to provide data on the horizontal and vertical extent of the release. Four soil borings were advanced and sampled to assess the presence of the compounds detected in the confirmation samples. Boring B-1 was located adjacent to the pump foundation, within the backfilled soil excavation. Boreholes B-2, B-3, and B-4 were located around the well pump area.

Soil borings B-1, B-2, and B-3, were advanced to approximately 16 feet. Three multi-increment soil samples were collected from each of the three borings at 5, 10, and 15 feet below ground surface (bgs). Boring B-4 was advanced to approximately 11 feet bgs, when the drill rig encountered a mechanical failure, and the boring was terminated. Soil samples in boring B-4 were collected at 5 and 10 feet bgs. During the sample collection process, a photoionization detector (PID) was used to monitor for volatile organic vapors in the soil headspace. No organic vapor readings were detected in the soil samples subjected to field screening using the PID.

The three soil samples collected from soil boring B-1 were analyzed for TPH-DRO, TPH-RRO, BTEX, and PAHs. One sample, Gal B-1 5', contained detectable concentrations of three PAHs; however, the concentrations were below their respective HDOH Tier 1 EALs. This sample, Gal B-1 5', did not contain detectable concentrations of TPH-DRO, TPH-RRO, or BTEX. TPH-RRO was detected in one sample, Gal B-1 15', at a concentration that was below the HDOH Tier 1 EAL of 500 mg/kg for TPH-RRO. This sample, Gal B-1 15', did not contain detectable concentrations of TPH-DRO, BTEX, or PAHs.

Bureau Veritas concludes that the remedial excavation appears to have removed the most heavily impacted soil from the area surrounding the well pump. Petroleum-impacted soil having TPH-RRO concentrations of 2,700 mg/kg and 4,500 mg/kg remain in the soil at the depth of approximately 18 to 24 inches bgs. The soil samples collected from the boreholes at depths of generally 5, 10 and 15 feet bgs indicated that the extent of the petroleum-impacted soil is limited to shallow soils and the vertical and horizontal extent appears very limited. Even in soil samples that reported TPH-RRO concentrations that exceeded the HDOH Tier 1 EAL, related constituents such as BTEX and PAHs were not detected or were detected at concentrations below the HDOH Tier 1 EAL.

Bureau Veritas recommended that this report be submitted to the HDOH. Because petroleum-impacted soil containing concentrations of TPH-RRO exceeded the Tier 1 EAL, Bureau Veritas recommended that an Environmental Hazard Evaluation (EHE) and an Exposure Hazard Management Plan (EHMP) be prepared to manage environmental hazards over the long-term. Furthermore, to limit the potential for future releases, Bureau Veritas recommended that the pump motor and related system be maintained and operated in a manner to prevent any future release.

***Environmental Hazard Evaluation, The Galbraith Estate Property, Irrigation Well and Pump System, 65-1155 Kaukonahua Road, 65-1155 Kaukonahua Road, (TMK Number: [1] 6-5-002: Parcel 025), Wahiawa, Hawaii, prepared by Bureau Veritas North America, Inc., dated August 30, 2012***



The purpose of this EHE was to evaluate the potential environmental hazards posed by the residual petroleum impacted shallow subsurface soil at the DMC Well #5/Bott Well irrigation well and pump system. The EHE consists of a multi-step process to assess potential environmental hazards at sites impacted with environmental contaminants (HDOH, 2009, 2011). Following this process, several tasks were completed, including identifying Chemicals of Potential Concern (COPCs), identifying potential environmental hazards, and identifying applicable HDOH screening levels for comparison to site data.

Residual shallow subsurface soil concentrations were compared to the HDOH Tier 1 EALs to identify the COPCs. One contaminant, TPH-RRO, was selected as the COPC in site soil.

The following potential environmental hazards may exist at the site (or may be posed by shallow subsurface site soil if excavated and transferred off-site):

- Potential gross contamination hazards may exist for commercial/industrial receptors from subsurface soils. However, it should be noted that the impacted soils do not pose a human health direct exposure hazard and are located in shallow subsurface soils (i.e., soils are not located at the surface and are capped with 18 to 24 inches of clean soil). The HDOH (2011) describes gross contamination as soils having offensive odors, unaesthetic appearance and general resource degradation.
- Potential gross contamination hazards may exist for future residential receptors or future commercial/industrial receptors *if impacted shallow subsurface site soil is excavated and used as surface soil at either residential or commercial/industrial sites.*

Bureau Veritas recommended preparing an EHMP to manage the residual subsurface soil contamination over the long-term. The EHMP is summarized below.

***Environmental Hazard Management Plan, The Galbraith Estate Property, Irrigation Well and Pump System, 65-1155 Kaukonahua Road, 65-1155 Kaukonahua Road, (TMK Number: [1] 6-5-002: Parcel 025), Wahiawa, Hawaii, prepared by Bureau Veritas North America, Inc., dated August 30, 2012***

This EHE was prepared to evaluate the potential environmental hazards posed by the residual petroleum impacted shallow subsurface soil (Bureau Veritas, 2012b). The purpose of this EHMP is to manage the environmental hazards identified in the EHE over the long-term.

This EHMP was prepared following HDOH guidance (HDOH, 2009, 2011). The purpose of this EHMP is to:

- Summarize the site background
- Identify the Chemicals of Potential Concern
- Identify and discuss potential environmental hazards
- Describe requirements for long-term monitoring of contaminants
- Discuss engineering and/or institutional controls needed to address identified environmental hazards to eliminate exposure pathways
- Guide proper handling, reuse, and disposal of contaminated soil that may be encountered during future site activities



- Describe construction worker protections and notifications required
- Describe use restrictions
- Identify measures for repair or replacement of engineering controls

**Letter entitled, *No Further Action with Institutional and Engineering Controls Determination for the Diesel Motor and Pump based on the review of Environmental Hazard Evaluation and Environmental Hazard Management Plan, The Galbraith Estate Property, Irrigation Well and Pump System, 65-1155 Kaukonahua Road, Wahiawa, Hawaii, dated August 30, 2012, and submitted by Bureau Veritas, prepared by the HDOH for the Galbraith Estate***

This letter from the HDOH summarizes the environmental work conducted at the DMC Well #5/Bott Well irrigation well and pump site, as well as the EHE and EHMP. It briefly outlines the institutional and engineering controls to be implemented, and recommends that the irrigation motor and pump system be repaired if it is to be used in the future. It also recommends that a management plan be developed to prevent future releases.

A copy of this letter from the HDOH is included as Appendix F.

## **5.0 INTERVIEWS**

### **5.1 INTERVIEWS WITH OWNERS**

Bank of Hawaii currently represents the owner of the subject property, the Galbraith Estate. Bank of Hawaii representatives with knowledge of the subject property were interviewed, as follows:

- Mr. Keith Yamashita of Bank of Hawaii's Trust Real Estate Department and representative of the Galbraith Estate (owner of the subject property), was interviewed by telephone on October 12, 2012. Mr. Yamashita has been associated with the subject property since December 2009, and was forthcoming with information for which he had knowledge. Mr. Yamashita is aware that the subject property was formerly used as agricultural land for growing pineapple and sugar cane.

Mr. Yamashita is aware of the previous Phase I ESAs of the subject property conducted by Clayton/Bureau Veritas. According to Mr. Yamashita, nothing has changed on the subject property since the last Phase I ESA was conducted in September of 2011.

Mr. Yamashita stated that, to the best of his knowledge, he is unaware of any USTs, sumps, clarifiers, hydraulic lifts, waste/chemical pipelines, or contaminated/waste disposal areas on the subject property, other than those outlined in the previous Phase I ESA reports by Clayton and Bureau Veritas. Also, to his knowledge, no citations have been issued for environmental violations at the subject property.

- Lisa Woods Munger, Esq. with Goodsell Anderson Quinn & Stifel and representative of the Galbraith Estate (owner of the subject property), was interviewed by telephone on October 31, 2012. Ms. Munger has been associated with the subject property for approximately 13 years, and was forthcoming with information for which she had knowledge. Ms. Munger is aware that the subject property was formerly used as agricultural land for growing pineapple and sugar cane.



Ms. Munger was aware of Clayton's original Phase I ESA conducted in 2004 for Goodwill Anderson Quinn & Stifel, LLP, and all of the subsequent Phase I ESAs conducted for Bank of Hawaii. Ms. Munger was unaware of any changes to the subject property since the 2004 assessment, except for the cleanup of computer debris from the northeast portion of the subject property in 2006, and the cleanup of the battery pile along the southeast-central boundary of the subject property in 2008.

Ms. Munger stated that, to the best of her knowledge, she is unaware of any USTs, sumps, clarifiers, hydraulic lifts, waste/chemical pipelines, or contaminated/waste disposal areas on the subject property, other than those outlined in the previous Phase I ESA reports by Clayton and Bureau Veritas. Also, to her knowledge, no citations have been issued for environmental violations at the subject property.

According to Ms. Munger, to her knowledge no changes have occurred at the subject property since the previous Phase I ESA conducted in September of 2011.

Ms. Munger was asked if she was aware of any of the following:

Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property.	Yes _____	No _____ <b>X</b>
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Any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.	Yes _____ <b>X</b>	No _____
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Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.	Yes _____ <b>X</b>	No _____
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Ms. Munger indicated that she is aware of commonly known or reasonably ascertainable information within the local community about the subject property that is material to *RECs* in connection with the subject property, as follows:

- The past use of the subject property was agricultural land for growing pineapple and sugar cane.
- An environmental cleanup was performed to remove computers that were dumped on the subject property in 2006.
- In 2008, an environmental cleanup was performed to remove a pile of batteries that were dumped on the subject property.
- The delisting of the Poamoho Section of the Del Monte Superfund site from the National Priorities List (NPL) as a past administrative matter.



## 5.2 INTERVIEWS WITH SITE MANAGERS

Ms. Lynne Constantinides of Crop Care Hawaii, LLC, current Land Manager of the subject property, was interviewed by telephone on October 31, 2012. Ms. Constantinides has been associated with the subject property for approximately eight years and was forthcoming with information for which she had knowledge.

Ms. Constantinides was aware that the subject property was formerly used as agricultural land for growing pineapple and sugar cane. Ms. Constantinides was also aware of the previous Phase I ESAs of the subject property conducted by Clayton/Bureau Veritas. According to Ms. Constantinides, to the best of her knowledge, nothing has changed on the subject property since the last Phase I ESA was conducted by Bureau Veritas in September of 2011.

Ms. Constantinides was asked if she was aware of any of the following:

Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property. Yes \_\_\_\_\_ No   X  

Any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property. Yes \_\_\_\_\_ No   X  

Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products. Yes \_\_\_\_\_ No   X  

## 5.3 INTERVIEWS WITH OCCUPANTS

At the time of Bureau Veritas' onsite inspection, the subject property was unoccupied. Therefore, no occupants were available for an interview.

## 5.4 INTERVIEWS WITH OTHERS

Other individuals associated with the subject property were interviewed, as follows:

- Bureau Veritas interviewed Ms. Denise Hearn, Vice President and Real Estate Commercial Team Leader of Bank of Hawaii, on October 31, 2012. Ms. Hearn was forthcoming with information for which she had knowledge. Ms. Hearn is aware that the subject property was formerly used as agricultural land for growing pineapple and sugar cane.

Ms. Hearn stated that, to the best of her knowledge, she is unaware of any USTs, sumps, clarifiers, hydraulic lifts, waste/chemical pipelines, or contaminated/waste disposal areas on the subject property, other than those outlined in the previous Phase I ESA reports by Clayton and Bureau Veritas. Also, to her knowledge, no citations have been issued for environmental violations at the subject property.



According to Ms. Hearn, no changes have occurred at the subject property since the previous Phase I ESA conducted in September of 2011.

- During the previous Phase I ESAs conducted at the subject property, Bureau Veritas interviewed Mr. Don MacDonald, owner of Agtech Pacific, who has worked with the Galbraith Estate as an independent contractor since the Fall of 2004. Mr. MacDonald was forthcoming with information for which he had knowledge, and was aware that the subject property was formerly used as agricultural land for growing pineapple and sugar cane.

Mr. MacDonald has worked with the irrigation system on the subject property and recently completed a firebreak project on the subject property. According to Mr. MacDonald, he is aware of the DMC Well #5/Bott Well and associated AST, but he is unaware of any other wells or ASTs on the subject property. In addition, Mr. MacDonald did not recall seeing any areas of illegal dumping or areas used to mix agricultural chemicals on the subject property. According to Mr. MacDonald, some unpaved roadways and firebreaks were constructed on interior portions of the subject property in 2008.

Mr. MacDonald was not available for an interview during the current Phase I ESA.

## **6.0 STANDARD ENVIRONMENTAL RECORD SOURCES, FEDERAL, STATE, AND LOCAL**

Available government database information prepared by Environmental FirstSearch,™ dated October 16, 2012, was reviewed to evaluate both the subject property and any listed sites within ASTM-recommended search distances, expanded by one mile due to the size of the subject property, which could potentially impact the subject property. Federal, state, and local databases reviewed are included in Appendix C.

The subject property was not identified in the databases reviewed.

A total of 47 sites of potential environmental concern were identified within the specified search distances from the subject property. Sites that may have a potential to impact the subject property (generally within ¼ mile radius) include: one Delisted National Priority List (DELNPL) site, six LUST sites, and one RCRA Large Quantity Generator (LQG) site. These sites were evaluated in more detail and are listed in the following table:

<b>Facility</b>	<b>Database</b>	<b>Orientation from Subject Site (miles)</b>	<b>Environmental Concern</b>
Schofield Barracks (U.S. Army Schofield Barracks	DELNPL	0.05 Mile Southwest	No; NPL site is delisted, down-gradient and separated from subject property by Kaukonahua Gulch
Nissan of Wahiawa 1912 Wilikina Drive Schofield Barracks	LUST	0.12 Mile Southwest	No; LUST release (ID No. 080016) listed as "Site Cleanup Completed," down-gradient, and separated from subject property by Kaukonahua Gulch



Facility	Database	Orientation from Subject Site (miles)	Environmental Concern
Hawaii Tofu 322-A Palm Street Schofield Barracks	LUST	0.19 Mile Southeast	No; LUST release (ID No. 920161) listed as "Site Cleanup Completed," down-gradient, and separated from subject property by Kaukonahua Gulch
Ace Transmission 720 Kilani Avenue Schofield Barracks	LUST	0.20 Mile Southeast	No; LUST release (ID No. 990068) listed as "Site Cleanup Completed," down-gradient, and separated from subject property by Kaukonahua Gulch
IMM Wahiawa 150 North Kamehameha Highway Wahiawa	LUST	0.22 Mile Southeast	No; Four LUST sites with two releases (ID Nos. 950028 & 980143) listed as "Site Cleanup Completed," and the other two releases (ID Nos. 050027 & 070016) listed as "Exposure Prevention Management Plan." This facility is located down-gradient and separated from the subject property by Kaukonahua Gulch.
Mahalo Wahiawa 119 N. Kamehameha Hwy. Wahiawa	LUST	0.23 Mile Southeast	No; LUST release (ID No. 000096) listed as "Site Cleanup Completed," down-gradient, and separated from subject property by Kaukonahua Gulch
Wahiawa Industrial Center 401 North Cane Street Wahiawa	RCRA-LQG	0.25 Mile Southeast	No; No reported releases, down-gradient, and separated from subject property by Kaukonahua Gulch
Wahiawa Police Station 330 N. Cane Street Wahiawa	LUST	0.28 Mile Southeast	No; LUST release (ID No. 980252) listed as "Site Cleanup Completed," down-gradient, and separated from subject property by Kaukonahua Gulch

The other listed sites are not expected to present an environmental concern to the subject property because they only hold an operating permit (which does not imply a problem), require no further action, or based upon Bureau Veritas' review, are too distant and/or topographically downgradient or crossgradient relative to the subject property to reasonably affect it.

Three unmapped (non-geocoded) sites of potential environmental concern were also listed in the Environmental FirstSearch™ report. Unmapped sites cannot be plotted with confidence, but can be located by zip code or city name. In general, a site cannot be geocoded due to inaccurate or missing information in the environmental database record provided by its applicable agency. Cross-referencing





addresses and site names, as well as a visual reconnaissance of surrounding properties, has been completed for the unmapped facility sites. The subject and adjacent properties were not identified on the unmapped sites listing in the environmental database report. No unmapped sites were identified with the potential to impact the subject property.

All database reviewed in the Environmental FirstSearch™ report were, in Bureau Veritas' opinion, determined to be sufficiently complete and sufficiently current to serve as the basis for Bureau Veritas' opinions.

## **7.0 SITE RECONNAISSANCE**

### **7.1 METHODOLOGY AND LIMITATIONS**

Bureau Veritas conducted an inspection of the subject property by four-wheel-drive vehicle and on foot on October 16, 2012. At the time of the site visit, Bureau Veritas was provided access to all areas of the subject property, except for those obstructed by overgrowth. Photographs taken at the time of the ESA are included behind the *Photographs* tab.

### **7.2 GENERAL OBSERVATIONS**

During Bureau Veritas' reconnaissance by foot and four-wheel-drive vehicle on October 16, 2012, the former agricultural lands were fallow and covered with weeds, grasses and other vegetation. Several of the unpaved farm roads were overgrown and inaccessible during the site inspection. However, a gravel-covered firebreak road extends through the west-central portion of the subject property in a north-south direction. Several utility manhole covers labeled "U.S.A. Signal Corp." were observed along the edges of this road. In addition, an unpaved roadway extends through the north-central portion of the subject property in an east-west direction, with an attached, winding roadway that extends down into Poamoho Gulch and onto the north adjoining property.

During Bureau Veritas' reconnaissance by foot and four-wheel-drive vehicle on October 16, 2012, the former agricultural lands were fallow and covered with weeds, grasses and other vegetation. Many of the unpaved farm roads were overgrown and inaccessible during the site inspection.

During several of the previous Phase I ESAs, conducted from January 2007 through May 2009, Bureau Veritas observed squatters' encampments located along a trail in the heavily vegetated area at the east-southeast end of the subject property, on the southwest side of Kamehameha Highway near the bridge that spans Kaukonahua Stream. During Bureau Veritas' subsequent Phase I ESAs, from April 2010 through September 2011, the squatters' encampments were not observed. However, during the recent site visit on October 16, 2012, at least two squatters' encampments were observed on the easternmost portion of the subject property, near the end of the trail. In addition, a significant amount of garbage and debris (apparently left by the squatters) was observed on the adjacent embankment along Kaukonahua Stream, including car and bicycle parts, clothing, and general household-type trash.

During the recent site visit, Bureau Veritas inspected the DMC Well #5/Bott Well irrigation system and associated equipment, which are located in the former pineapple fields near the Kaukuahona Road and Wilikina Drive intersection, in the central-western portion of the subject property. This fenced-in facility includes a 1,000-horsepower Detroit Diesel engine connected to a 10,000-gallon diesel fuel AST (no longer in use) within a concrete masonry unit (CMU) secondary containment structure, and a Murphy process control system which regulates fuel speed, engine speed, oil pressure, and coolant temperature. The control system also automatically shuts off the engine in the event of overheating or pressure loss. No staining was observed on the ground around the AST containment structure. The concrete floor



within the containment was wet with rain water and partially covered with black, peeling paint, but appeared in good condition. In addition, a small, concrete-lined containment was observed in the ground on the south side of the AST, where the diesel fill pipe is located. This containment also appeared in good condition.

Diesel fuel from the AST was formerly transported through aboveground piping to the diesel engine, which drives the well pump. The concrete slab below the well pump and engine appeared fairly clean. During Bureau Veritas' previous Phase I ESAs, dark surface staining was observed on this concrete slab; however, the slab was pressure-washed as part of the Soil Remediation and Environmental Investigation conducted by Bureau Veritas in March of 2012 (see Section 4.7).

A small corrugated metal shed was observed next to the well pump, which contained one 45-gallon drum of Roundup™ herbicide and four 5-gallon buckets of motor oil. The drum and oil buckets were stored on a spill pallet; however, staining was observed on the floor around the spill pallet. The unpaved area fronting this shed appeared as a shallow depression. This depression was formerly covered with wooden slats. Although there is a potential for impacts to this area from the herbicide and oils stored in the shed, it is unlikely to be significant because no staining or other evidence of releases were observed in this area.

The area of the former Del Monte Turner Station facility, which was formerly used as a pineapple loading and staging area, was observed on the northeast side of Kamehameha Highway, to the northwest of Whitmore Avenue. At the time of Bureau Veritas' site visit, this unpaved strip of land appeared bare, with no surface staining or other evidence of releases observed.

The area along the north property boundary, between the former Kemoo Camp site and Poamoho Camp, was accessed by unpaved (dirt) roads and inspected for unauthorized dumping. This area was previously identified with various dumped/abandoned items, including wrecked vehicles, a portable vault (containing fire brick), and various types of garbage. The abandoned vehicles and other debris were removed by a waste contractor (hired by Bank of Hawaii) beginning in May of 2008, and were properly disposed offsite. During the two most recent site visits, in September 2011 and October 2012, some additional abandoned items were observed near and within Poamoho Gulch, including the following:

- An abandoned boat (with motor) on the dirt road just west of Poamoho Camp (21 31' 8.6" N/158 2' 41.2" W)
- Two wrecked cars and car parts on the embankment along the winding dirt road that extends down into Poamoho Gulch (21 31' 15.1" N/158 2' 55.2" W)
- One rusted 55-gallon drum and two garbage cans on the embankment along the winding dirt road that extends down into Poamoho Gulch (21 31' 15.5" N/158 2' 57.0" W)

No staining or other evidence of releases was observed around these abandoned items.

### **7.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS**

The subject property was assessed for signs of storage, use, or disposal of hazardous materials. The assessment consisted of noting evidence (e.g., drums, unusual vegetation patterns, staining) indicating that hazardous materials are currently or were previously located on the subject property.



No potentially hazardous materials were observed on the subject property, except for the 10,000-gallon diesel fuel AST located at the DMC Well #5/Bott Well site. This AST is stored within a CMU secondary containment structure with a concrete floor. No staining was observed on the ground around the containment structure. The concrete floor within the containment was wet with rain water and partially covered with black, peeling paint, but appeared in good condition. In addition, a small, concrete-lined containment was observed in the ground on the south side of the AST, where the diesel fill pipe is located. This containment also appeared in good condition. According to Wai Engineering, the diesel AST is not currently in use.

In addition to the potentially hazardous substances observed on the subject property, a list of chemicals and materials used on the Poamoho Site Galbraith Land by DMC during their past farming operations (on Fields 204, 206 and 207) is presented in Appendix D.

## **7.4 STORAGE TANKS**

### **7.4.1 Underground Storage Tanks**

The subject property was inspected for evidence of USTs (e.g., vent piping, dispensing equipment, pavement variations). Evidence of USTs was not observed during the site inspection for this assessment.

The State of Hawaii, DOH, Solid and Hazardous Waste Branch, UST and LUST databases were reviewed to obtain information regarding the historical operation of USTs at and around the subject property. The subject property was not identified in the UST or LUST databases.

However, the Poamoho Crate Yard facility (DOH Facility ID #9-201817), which is located adjacent to the subject property on the north side, was identified in the DOH/UST database as the location of three registered USTs that are currently listed as *"Permanently-Out-of-Use"* as of March of 1987. The tanks identified include: one 6,000-gallon gasoline UST, one 6,000-gallon diesel UST, and one 2,000-gallon diesel UST, each of which are listed as *"Permanently Out of Use."* The locations of these USTs are listed as *"Poamoho Crate Yard/Field 9."*

Based on further investigation, it was discovered that the two 6,000-gallon USTs were located at the Poamoho Camp Crate Yard facility, but the 2,000-gallon diesel UST was located in Field 9, more than two miles south/southwest of the subject property.

The two 6,000-gallon USTs were removed from the Crate Yard in 1987, and Woodward-Clyde Consultants conducted a subsurface investigation at the site in 1995. Two soil samples were collected from each of the UST pits at depths of 10 to 11 feet below ground surface, and were analyzed for TPH as gasoline, diesel, and oil. Based on the laboratory results, TPH was not detected in any of the soil samples collected from the Crate Yard UST sites.

### **7.4.2 Aboveground Storage Tanks**

The subject property was inspected for evidence of ASTs (e.g. concrete foundations or saddles, pedestals or steel support structures).

Bureau Veritas observed an approximately 10,000-gallon diesel AST located within secondary containment at the DMC Well #5/Bott Well site. No staining was observed on the ground around the containment structure. The concrete floor within the containment was wet with rain water and partially covered with black, peeling paint, but it appeared in good condition with no visible cracks or other openings. According to Wai Engineering, the diesel AST is not currently in use.



### 7.4.3 In-Ground Hydraulic Equipment

The subject property was inspected for evidence of in-ground hydraulic equipment (e.g. hydraulic elevators or lifts that have hydraulic fluid-containing reservoirs or jacks below ground surface). Although not regulated as USTs, hydraulic equipment of this type can be of concern due to the potential for oil leaks from the hydraulic cylinders. Hydraulic fluid in equipment installed in 1978 or before may contain PCBs.

Evidence of hydraulic elevators and/or lifts was not observed at the subject property.

### 7.5 WASTES

Currently, nonhazardous solid waste is not generated onsite. However, evidence of unauthorized dumping was observed on the northern portion of the subject property near Poamoho Gulch, including the following:

- An abandoned boat (with motor) on the dirt road just west of Poamoho Camp (21 31' 8.6" N/158 2' 41.2" W)
- Two wrecked cars and car parts on the embankment along the winding dirt road that extends down into Poamoho Gulch (21 31' 15.1" N/158 2' 55.2" W)
- One rusted 55-gallon drum and two garbage cans on the embankment along the winding dirt road that extends down into Poamoho Gulch (21 31' 15.5" N/158 2' 57.0" W)

No staining or other evidence of releases was observed around the abandoned items and other waste. The areas of unauthorized dumping and trash are shown in Figure 2, behind the *Figures* tab.

Most of the abandoned vehicles, scrap metal, and other debris identified on the subject property during the previous Phase I ESAs (see Section 4.7) were not observed during the recent inspection on September 8, 2011 because Bank of Hawaii hired a waste disposal contractor to remove these items in May of 2008.

### 7.6 POLYCHLORINATED BIPHENYLS (PCBS)

The subject property was inspected for the presence of liquid-cooled electrical units (transformers, light ballasts, and capacitors).

Transformers, capacitors, or other potential PCB sources were not observed on or near the subject property, except for two pad-mounted transformer vaults located on utility easements along roadways through the subject property. Both of the vaults are owned and maintained by Hawaiian Electric Company, Inc. (HECO) and are labeled "No PCBs." One of the vaults is located adjacent to the Navy road off of Whitmore Avenue at the eastern end of the subject property (HECO Vault No. 9439), and the other vault is located on the north side of Kaukonahua Road, just east of the intersection with Kamananui Road (HECO Vault No. 9533).

It should be noted that there may be pole-mounted transformers along the gulches at the north and south boundaries of the subject property that were obscured from view by tree cover.



## 7.7 WASTEWATER AND STORM WATER DISCHARGE

The subject property is currently unoccupied and wastewater sources (i.e., sinks and toilets) were not observed.

Stormwater runoff from the subject site infiltrates the unpaved ground surface and flows via sheet flow to the adjoining gulches and waterways, including Poamoho Stream Gulch to the north, Wahiawa Reservoir (Lake Wilson) to the south, and Kaukonahua Stream Gulch to the southeast and southwest.

### 7.7.1 Discharge Sources

Evidence of industrial, process or other discharge sources was not observed on the subject property.

### 7.7.2 Oil/Water Separators, Clarifiers, Sumps, and Trenches

The subject property was inspected for evidence of oil/water separators, clarifiers, sumps and trenches (e.g. hatches, manholes, patches on the floor slabs). Although not regulated as USTs, these features can be of concern due to the potential for leaks into the subsurface.

Evidence of oil/water separators, clarifiers, sumps or trenches was not observed on the subject property.

### 7.7.3 Septic Systems

The subject property was inspected for evidence of current or former septic systems (e.g., clean-out manhole, records, interviews). Evidence of septic systems was not observed during the assessment.

## 7.8 WELLS

The subject property includes the DMC Well #5 (aka Del Monte Pump 5) or Bott Well, which is located in the fields near the Kaukonahua Road and Wilikina Drive intersection, in the central western portion of the subject property. According to the State of Hawaii, Department of Land and Natural Resources, Division of Water Resource Management, *Groundwater and Index Summary*, dated January 9, 2006, this well is designated as Well 3-3103-01 and is an irrigation well drilled in 1988 by DMC. This well is located at an elevation of approximately 965 feet above msl, and has a total depth of approximately 1,066 feet bgs.

During one of the previous Phase I ESAs, conducted in July 2007, Bureau Veritas reviewed data collected from Well 3-3103-01. The following reports were reviewed.

- Final Record of Decision for Operable Unit 2, Schofield Army Barracks, Island of Oahu, Hawaii, prepared for U.S. Army Environmental Center, Installation Restoration Division by Harding Lawson Associates, August 12, 1996.
- Final Operation and Maintenance and Long-Term Groundwater Monitoring Plan for Operable Unit 2, Schofield Army Barracks, Island of Oahu, Hawaii, prepared for U.S. Army Environmental Center, Installation Restoration Division by Harding Lawson Associates, September 13, 1996.
- Public Health Assessment, Schofield Barracks, Wahiawa, Honolulu County, Hawaii, prepared by the Agency for Toxic Substances and Disease Registry, February 11, 1998.



- Final First Five-Year Review Report for Operable Unit 2 and Operable Unit 4, Schofield Army Barracks, Island of Oahu, Hawaii prepared for the U.S. Department of the Army by Harding ESE, September 4, 2002.

A summary of the reports listed above is presented in Section 4.7, *Previous Environmental Reports or Other Documents*.

## **7.9 DRY CLEANING OPERATIONS**

There are currently no dry cleaners on the subject property and research did not reveal that dry cleaning operations have been conducted on the subject property in the past.

## **8.0 NON-ASTM ISSUES**

### **8.1 ASBESTOS-CONTAINING MATERIALS**

During the assessment, the subject property was inspected for the presence of suspect ACM. The inspection consisted of noting observable materials (*i.e.*, materials that are readily accessible and visible without dismantling elements of the structure, such as carpet, wallboard, or ceiling panels) that may contain asbestos.

No evidence of suspect ACM was observed at the subject property during the recent site reconnaissance on October 16, 2012. During the original Phase I ESA in 2004, however, Bureau Veritas (formerly Clayton) observed a pile of roofing material debris (suspect ACM) along the southeast-central property boundary, near Lake Wilson/Kaukonahua Stream. This area was heavily overgrown with vegetation during the subsequent Phase I site visits, and the roofing material debris could not be found.

### **8.2 RADON**

Radon is a naturally occurring radioactive gas formed by the decay of uranium in bedrock and soil. The potential adverse health effects associated with radon gas depend on various factors, such as the concentration of the gas and duration of exposure. The concentration of radon gas in a building depends on subsurface soil conditions, the integrity of the building's foundation, and the building's ventilation system.

Due to the relatively young geological age (less than five million years) of the southernmost islands of the Hawaiian archipelago, radon gas does not occur at elevated levels. Therefore, no further investigation of radon is recommended for the subject property.

### **8.3 LEAD-BASED PAINT**

Lead-based Paint was commonly used for corrosion protection in the 1960s, and in prime, intermediate, and finish coats well into the 1970s. Regulations specifically addressing LBP include HUD (1995) guidelines and the Consumer Product Safety Act (1977). These regulations define LBP as containing 0.5% lead by weight (5,000 ppm), and 0.009% lead by weight (90 ppm), respectively, for housing and consumer products. There is no industrial definition. There are specific testing methods for sampling and analyzing lead in paint.



No painted structures were observed on the subject property, except for portions of the DMC Well #5/Bott Well irrigation-well system. Prior to the disturbance (sanding, scraping or drilling) of painted surfaces, sampling and laboratory analysis should be conducted to determine the presence or absence of LBP.

#### 8.4 WETLANDS

The subject property was inspected for the presence of sensitive ecological areas by noting environmental indicators (e.g., wetlands vegetation, floodplains) located on or immediately adjoining the subject property.

No sensitive ecological areas were observed on the subject property. The USGS 7.5-Minute Topographic Map for the Haleiwa Quadrangle, which includes the subject and adjoining properties, depicts Poamoho Stream along the north side of the subject property and Kaukonahau Stream/Wahiawa Reservoir (Lake Wilson) along the south/southeast side of the subject property. The topographic map does not depict other creeks or delineated wetlands located on the subject property.

The adjacent area to the south of the subject property is covered by a portion of Wahiawa Reservoir/Lake Wilson. According to the United States Fish and Wildlife Service (USFWS) Wetlands Online Mapper database, this area includes two wetlands designations: *L1UBHh* and *PFO1Ah*. These two designations are defined as follows:

**L1UBHh: [L] Lacustrine, [1] Limnetic, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [h] Diked/Impounded**

[L] Lacustrine - The Lacustrine System includes wetlands and deep water habitats with all of the following characteristics: (1.) situated in a topographic depression or a dammed river channel, (2.) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage, and (3.) total area exceeds 8 hectares (20 acres).

[1] Limnetic - Extends outward from Littoral boundary and includes all deep-water habitats within the Lacustrine System.

[UB] Unconsolidated Bottom - Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.

[H] Permanently Flooded - Water covers the land surface throughout the year in all years.

[h] Diked/Impounded - Created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water. Originally, Diked and Impounded are described as separate modifiers (Cowardin et al. 1979). They have been combined here due to photointerpretation limitations.

**PFO1Ah: [P] Palustrine, [FO] Forested, [1] Broad-Leaved Deciduous, [A] Temporarily Flooded, [h] Diked/Impounded**

[P] Palustrine - The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5 ppt. Wetlands lacking such vegetation are also included if they exhibit all of the following characteristics: (1.) are less than 8 hectares (20 acres), (2.) do not have an active wave-formed or bedrock shoreline feature, (3.) have at low water a depth less than 2 meters (6.6 feet) in the deepest part of the basin, and (4.) have a salinity due to ocean-derived salts of less than 0.5 ppt.



[FO] Forested - Characterized by woody vegetation that is 6 m tall or taller.

[1] Broad-leaved Deciduous - Woody angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold or dry season; e.g., black ash (*Fraxinus nigra*).

[A] Temporarily Flooded - Surface water is present for brief periods during growing season, but the water table usually lies well below the soil surface. Plants that grow both in uplands and wetlands may be characteristic of this water regime.

[h] Diked / Impounded - Created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water. Originally, Diked and Impounded are described as separate modifiers (Cowardin et al. 1979). They have been combined here due to photointerpretation limitations.

The Federal Emergency Management Agency Flood Insurance Rate Map (FEMA/FIRM) was reviewed to determine if the subject property was located in a flood hazard area. According to the FEMA/FIRM map Index (Panel No. 150001-0000, Revised September 30, 1995) the subject and adjoining properties lie within FEMA/FIRM Panel No. 150001-0045 B, which is not printed (it is noted that the areas on this panel are located within Flood Zone D, which denotes areas for which flood hazards are undetermined). However, based on the topography of the area, the potential for hazards from flooding appears to be low.

## **9.0 FINDINGS, OPINIONS, AND CONCLUSIONS**

We have performed an updated Phase I ESA in conformance with the scope and limitations of ASTM E 1527-05 of the Galbraith Estate Property located in Wahiawa, Oahu, Hawaii, the subject property. Any exceptions to, or deletions from, this practice are described in Section 1.2 of this report.

This assessment has revealed no evidence of *RECs*, as defined by ASTM, in connection with the subject property, except for the following:

- During one of Bureau Veritas' previous Phase I assessments, conducted in April of 2008, a new road for the United States Navy was under construction along the northeastern boundary, and extending through the northeast corner of the subject property. Initial construction of a bridge was underway at the nearby Poamoho Stream Gulch, and a road cutaway had been excavated for installation of the bridge. Small pieces of garbage were observed mixed in with the soil of the road cutaway along the edge of the subject property. According to personnel with the onsite construction contractor, Dick Pacific Construction Company, Ltd., a significant amount of garbage and debris were encountered during the excavation, including household-type garbage, wrecked cars, and car parts. Although the Navy roadway bridge is not part of the subject property, this discovery indicates the potential for additional garbage, cars, and car parts to be buried along the edges of the subject property immediately adjacent to the area excavated by the Navy.

This finding is considered a *REC* because there is evidence of buried cars and car parts, with a potential for releases of petroleum hydrocarbons to the subject property. Future excavation activities in the northeast portion of the subject property should be monitored for buried waste and associated releases.





The following environmental conditions, which are not considered to be *RECs*, as defined by ASTM, were revealed during this assessment:

- The majority of the subject property was formerly used as agricultural land. Agricultural chemicals such as pesticides and herbicides used on pineapple and sugar cane crops may be an environmental concern. However, no evidence of chemical mixing or storage areas, or excessive use of pesticides and herbicides from past agricultural use was identified at the subject property.

The DOH *Technical Guidance Manual for the Implementation of the State Contingency Plan Interim Final*, dated June 21, 2009, recommends that sites with known pesticide-related contamination, and sites where pesticides were regularly applied, be evaluated for residual contamination prior to re-development.

This finding is not considered to be a *REC* because there was no evidence of storage, mixing or excessive use of agricultural chemicals at the subject property. However, there is a potential that agricultural chemicals exist in the soil at concentrations above the DOH action levels. If future plans for the subject property include commercial or residential development, the soil should be tested for agricultural chemicals following the DOH guidelines. In addition, if any soil is to be removed from the subject property for reuse elsewhere, it should be tested for pesticides/herbicides.

- The DMC Well #5/Bott Well site on the western portion of the subject property includes a small storage shed that formerly contained herbicide and motor oil containers stored on a spill pallet. Staining was observed on the floor of the shed, but no staining was observed on the soil around the shed. Although there is a potential for impacts to the soil around the shed, it is unlikely to be significant because no staining was observed.

This finding is not considered a *REC* because there is no evidence of releases outside of the shed. However, due to the length of time that chemicals were stored in the shed, there is a potential for impacts to the underlying soil. If the shed is removed in the future, confirmation soil samples should be collected and analyzed for chemical constituents of concern.

- Abandoned vehicles, vehicle parts, and other waste items were observed on the northern portion of the subject property near or within Poamoho Gulch, including: (1) an abandoned boat (with motor) on the dirt road just west of Poamoho Camp (21 31' 8.6" N/158 2' 41.2" W); (2) two wrecked cars and car parts on the embankment along the winding dirt road that extends down into Poamoho Gulch (21 31' 15.1" N/158 2' 55.2" W); and (3) a rusted 55-gallon drum and two garbage cans on the embankment along the winding dirt road that extends down into Poamoho Gulch (21 31' 15.5" N/158 2' 57.0" W).

This finding is not considered a *REC* because there is no evidence of significant releases from the abandoned vehicles and other waste items. However, because these items are a nuisance attraction, Bureau Veritas recommends that they be removed and properly disposed. The ground beneath these items should then be assessed for staining or other evidence of releases.



**Certification of both  
Environmental Professionals  
signing below:**

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

This report was prepared by:

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Tim Swartz  
Senior Project Manager  
Health, Safety, and Environmental Services

This report reviewed by:

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Daniel P. Ford, P.G.  
Regional Vice President  
Health, Safety, and Environmental Services

December 6, 2012  
Project No. 17012-012185.00



## FIGURES



## PHOTOGRAPHS



**APPENDIX A**

**RESUMES OF ENVIRONMENTAL PROFESSIONALS**



**APPENDIX B**

**LIST OF SOURCES/REFERENCES**



## LIST OF SOURCES/REFERENCES

### SOURCES

Agency and division/source: Bank of Hawaii, Trust Real Estate Department  
Name/title of representative: Ms. Denise Hearn/Vice President and Real Estate portfolio Manager  
Location of Agency: P.O. Box 3170, Honolulu, Hawaii 96802-3170  
Agency Telephone Number: (808) 694-4563

Agency and division/source: Bank of Hawaii, Trust Real Estate Department  
Name/title of representative: Mr. Keith Yamashita  
Location of Agency: P.O. Box 3170, Honolulu, Hawaii 96802-3170  
Agency Telephone Number: (808) 694-4562

Agency and division/source: Goodsill Anderson Quinn & Stifel  
Name/title of representative: Lisa Woods Munger, Esq.  
Location of Agency: 1099 Alakea Street, Ste 1800, Honolulu, Oahu, Hawaii 96813  
Agency Telephone Number: (808) 547-5600

Agency and division/source: Crop Care Hawaii, LLC  
Name/title of representative: Ms. Lynne Constantinides, current Land Manager  
Location of Agency: Unknown  
Agency Telephone Number: (808) 265-2936

Agency and division/source: AgTech Pacific  
Name/title of representative: Mr. Don MacDonald, Owner  
Location of Agency: Not provided



## LIST OF SOURCES/REFERENCES (Continued)

### REFERENCES

#### Physical Setting

- *Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy for Hawaii. Technical Report No. 179* dated February 1990, prepared by Mink, J.F. and L.S. Lau
- *Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) Map No. 150001-0000*, Revised September 30, 1995, prepared by FEMA
- *Ground Water Well Index* database, dated January 9, 2006, prepared by the State of Hawaii, Department of Land and Natural Resources, Commission on Water Resource Management
- *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, dated August 1972, prepared by Foote, Donald E. et al. US Department of Agriculture, Soil Conservation Service, in cooperation with the University of Hawaii Agricultural Experiment Station

#### State and County Agencies

- *Environmental FirstSearch™ Report*, dated September 1, 2011, prepared by Environmental FirstSearch™ Technology Corporation through Track Info Services, LLC
- *Hazard Evaluation & Emergency Response (HEER) Office Database*, dated 2010, prepared by the State of Hawaii, Department of Health, HEER Office
- Ownership records and Tax Map Key maps, prepared by the City and County of Honolulu Real Property Tax Assessment Office
- *Underground Storage Tank (UST) Database and Leaking Underground Storage Tank (LUST) Database*, dated 2009, prepared by State of Hawaii, Department of Health, Solid and Hazardous Waste Branch

#### Aerial Photographs

**Source: Hamilton Library at the University of Hawaii at Manoa, Honolulu, Hawaii, and Google Earth™**

Date:	5-14-51	Aerial Photograph No.	GSMF (Oahu)
Date:	1958	Aerial Photograph No.	USGS Orthophotoquad, Oahu Island
Date:	12-4-62	Aerial Photograph Nos.	EKM-1CC-98, 99, 119 & 120
Date:	9-24-92	Aerial Photograph No.	NASA 92-162 DE





## LIST OF SOURCES/REFERENCES (Continued)

Date: 2000                      Aerial Photograph Source: Google Earth™  
Date: 2002                      Aerial Photograph Source: Google Earth™  
Date: 2004                      Aerial Photograph Source: Google Earth™  
Date: 2006                      Aerial Photograph Source: Google Earth™  
Date: 2008                      Aerial Photograph Source: Google Earth™

### Topographic Maps

**Source: Hamilton Library at the University of Hawaii at Manoa, Honolulu, Hawaii**

**Quadrangle: Haleiwa, Hawaii                      Scale: 1:24,000                      Series: 7.5 Minute**

Year(s): 1909-13, 1927-30, 1943, 1953, 1960, 1983, 1998

### Previous Environmental Reports/Documents

- *Phase I Environmental Site Assessment of the Galbraith Estate Property, Located in Wahiawa, Oahu, Hawaii*, prepared by Bureau Veritas, dated February 1, 2007; September 27, 2007; April 15, 2008; December 8, 2008; July 10, 2009; and June 10, 2010
- *Phase I Environmental Site Assessment Report for the Del Monte Corp. Poamoho Site Plantation Lands, Wahiawa, Oahu, Hawaii*, prepared by Clayton Group Services, Inc. (Clayton), dated July 26, 2004
- *Final Record of Decision for Operable Unit 2, Schofield Army Barracks, Island of Oahu, Hawaii*, prepared for U.S. Army Environmental Center, Installation Restoration Division by Harding Lawson Associates, August 12, 1996
- *Final Operation and Maintenance and Long-Term Groundwater Monitoring Plan for Operable Unit 2, Schofield Army Barracks, Island of Oahu, Hawaii*, prepared for U.S. Army Environmental Center, Installation Restoration Division by Harding Lawson Associates, September 13, 1996
- *Public Health Assessment, Schofield Barracks, Wahiawa, Honolulu County, Hawaii*, prepared by the Agency for Toxic Substances and Disease Registry, February 11, 1998
- *Final First Five-Year Review Report for Operable Unit 2 and Operable Unit 4, Schofield Army Barracks, Island of Oahu, Hawaii*, prepared for the U.S. Department of the Army by Harding ESE, September 4, 2002
- *Galbraith Estate Well*, Wai Engineering, Inc., May 4, 2004



## LIST OF SOURCES/REFERENCES (Continued)

- *40 CFR Part 300 National Oil Hazardous Substances Pollution Contingency Plan; National Priorities List, Notice of Intent for Partial Deletion of Del Monte Corp (Oahu Plantation) Superfund Site from the National Priorities List*, Oct. 16, 2003; Environmental Protection Agency (EPA)
- E-mail Correspondence between Clayton Group Services, Inc. and Ms. Grace Simmons of the State of Hawaii, Department of Health (DOH), dated December 13, 2006
- Debris Disposal Report, Galbraith Trust Property, Portion of Tax Map Key Number (1) 7-1-001: Parcel 005, Whitmore Village, Hawaii, Clayton Group Services, Inc., A Bureau Veritas Company, January 24, 2007
- *Second Five-Year Review Report for Operable Units 2 and 4, Schofield Army Barracks, Sites 12 and 19, Oahu, Hawaii*, prepared for the U.S. Army Environmental Command by MACTEC Engineering and Consulting, Inc., July 2007
- Letter Report for the Disposal of Batteries and Limited Soil Sampling at the George Galbraith Trust Estate Property, Located at Tax Map Key (TMK): [1] 7-1-001: Parcel 021 in Wahiawa, Oahu, Hawaii, Bureau Veritas North America, Inc., dated March 24, 2008
- *Soil Remediation and Environmental Investigation Report, The Galbraith Estate Property, Irrigation Well and Pump System, 65-1155 Kaukonahua Road, 65-1155 Kaukonahua Road, (TMK Number: [1] 6-5-002: Parcel 025), Wahiawa, Hawaii*, prepared by Bureau Veritas North America, Inc., dated June 5, 2012
- *Environmental Hazard Evaluation, The Galbraith Estate Property, Irrigation Well and Pump System, 65-1155 Kaukonahua Road, 65-1155 Kaukonahua Road, (TMK Number: [1] 6-5-002: Parcel 025), Wahiawa, Hawaii*, prepared by Bureau Veritas North America, Inc., dated August 30, 2012
- *Environmental Hazard Management Plan, The Galbraith Estate Property, Irrigation Well and Pump System, 65-1155 Kaukonahua Road, 65-1155 Kaukonahua Road, (TMK Number: [1] 6-5-002: Parcel 025), Wahiawa, Hawaii*, prepared by Bureau Veritas North America, Inc., dated August 30, 2012
- Letter entitled, *No Further Action with Institutional and Engineering Controls Determination for the Diesel Motor and Pump based on the review of Environmental Hazard Evaluation and Environmental Hazard Management Plan, The Galbraith Estate Property, Irrigation Well and Pump System, 65-1155 Kaukonahua Road, Wahiawa, Hawaii, dated August 30, 2012, and submitted by Bureau Veritas*, prepared by the HDOH for the Galbraith Estate



**APPENDIX C**

**REGULATORY DATABASE REPORT**



## **APPENDIX D**

### **LIST OF CHEMICALS AND MATERIALS USED ON FIELDS BY DEL MONTE CORPORATION**



## **APPENDIX E**

### **DOH LETTER FOR COMPUTER DEBRIS DISPOSAL**



## **APPENDIX F**

**DOH “NO FURTHER ACTION WITH INSTITUTIONAL AND  
ENGINEERING CONTROLS” LETTER FOR DMC WELL #5/BOTT WELL**