

FIVE-YEAR REVIEW REPORT
FOR
DEL MONTE CORPORATION
(OAHU PLANTATION)
SUPERFUND SITE
KUNIA, HAWAII

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Approved by:


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Date:

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Acronyms and Abbreviations

µg/L	micrograms per liter
1,2-DCP	1,2-dichloropropane
1,2,3-TCP	1,2,3-trichloropropane
AOC	Administrative Order of Consent
ARARs	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
COC	constituent of concern
DBCP	1,2-dibromo-3-chloropropane
EDB	ethylene dibromide
EPA	United States Environmental Protection Agency
FS	Feasibility Study
GAC	granular activated carbon
gpm	gallons per minute
HDOH	Hawaii Department of Health
ICs	institutional controls
JCC	James Campbell Co. LLC
kg	kilogram
KVSA	Kunia Village Source Area
KWTS	Kunia Well Treatment System
MCL	maximum contaminant level
mg/L	milligrams per liter
MNA	monitored natural attenuation
NPL	National Priorities List
O&M	operation and maintenance

RAOs	remedial action objectives
RI	Remedial Investigation
ROD	Record of Decision
SVE	soil vapor extraction
TI	Technical Impracticability
VOC	volatile organic compound

Executive Summary

The United States Environmental Protection Agency (EPA) completed the first five-year review of the remedial actions implemented at the Del Monte Corporation (Oahu Plantation) Superfund Site (the Del Monte Site, or the Site) located in Kunia, Hawaii. The purpose of the five-year review is to evaluate whether the remedial measures implemented at the Del Monte Site continue to be protective of human health and the environment.

Del Monte Fresh Produce (Hawaii) Inc. grew and processed pineapple on the plantation from about 1946 to November 2006. During that time a number of pesticides (soil fumigants) were applied to the soil to control nematodes (worms) that attack pineapple roots. These fumigants were stored, mixed, and spilled in an area near the Kunia well, a former drinking water supply well. Fumigants spilled in the area have contaminated shallow (20 feet to 100 feet below ground surface [bgs]) subsurface soil and perched groundwater, as well as deep basal groundwater.

Constituents of concern (COCs) in soil and groundwater are ethylene dibromide (EDB), 1,2-dibromo-3-chloropropane (DBCP), 1,2-dichloropropane (1,2-DCP), and 1,2,3-trichloropropane (1,2,3-TCP).

A Preliminary Assessment/Site Investigation was conducted by EPA at the Site in 1990. EPA subsequently completed a Hazard Ranking Scoring process for the Site in 1992. The Site was added to the National Priorities List on December 16, 1994, and Del Monte Fresh Produce (Hawaii) Inc., EPA and the State of Hawaii signed an administrative order of consent for a Remedial Investigation/Feasibility Study and Engineering Evaluation and cost analysis on September 28, 1995. A Record of Decision (ROD) was signed for the Del Monte Site in September 2003. The selected remedy addressed soil and groundwater contamination at the Site. EPA determined that the pesticides EDB, DBCP, 1,2,3-TCP, and 1,2-DCP have been released into soil and perched groundwater at the Site, and that a substantial threat of release to basal groundwater exists. The objective of the selected remedy was to eliminate potential future exposure to contaminants in the Kunia Village Source Area (KVSA) and to restore drinking water beneficial use to the basal aquifer. EPA's selected cleanup remedy is divided into two parts: 1) the shallow groundwater (perched aquifer) and contaminated soil in the KVSA from approximately 20 feet bgs to 100 feet bgs, and 2) the deep groundwater (basal aquifer). Construction completion for the selected remedies was achieved for the Del Monte Site with the signing of the Preliminary Close Out Report (EPA, 2008) on September 8, 2008.

The assessment of this five-year review found that the remedy was constructed in accordance with the requirements of the ROD. The remedy is functioning as intended by the decision document, except for the one issue stated below and discussed in more detail in the Five-Year Summary Review Form and in Section 8, Issues, and Section 9, Recommendations.

The remedy for the Del Monte Superfund Site is protective of human health and the environment because there is no exposure to untreated perched or basal aquifer groundwater. Furthermore, the Hawaii Department of Health (HDOH) prohibits any use of

the basal groundwater, even for irrigation, without treatment, unless the groundwater meets State of Hawaii maximum contaminant levels (MCLs).

The ultimate objective for the basal aquifer remedy is to restore the basal aquifer to its beneficial use as a drinking water source. Recent groundwater data shows that the groundwater in the basal aquifer has “background” levels of COCs above Hawaii MCLs due to the historical application of pesticides in the area. This means that aside from the contamination resulting from the spill of COCs at the Site, the groundwater in the basal aquifer already has COCs present at levels above Hawaii MCLs. This recent data may make it more difficult to restore the groundwater in the basal aquifer to drinking water levels, which is one of the remedial action objectives of the basal aquifer remedy. At some point in the future, this remedial action objective and cleanup levels of Hawaii MCLs for the basal aquifer may need to be re-evaluated.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name : Del Monte Corporation (Oahu Plantation)		
EPA ID: HID980637631		
Region: 9	State: Hawaii	City/County: Kunia/Honolulu
SITE STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) _____		
Remediation status (choose all that apply): <input checked="" type="checkbox"/> Operating <input type="checkbox"/> Complete		
Multiple OUs? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Construction completion date: September 8, 2008	
Has site been put into reuse? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
REVIEW STATUS		
Reviewing agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
Author name: Judy Huang		
Author title: Remedial Project Manager	Author affiliation: EPA Region 9	
Review period: December 17, 2009 – June 15, 2010		
Date(s) of site inspection: January 27, 2010		
Type of review: <input checked="" type="checkbox"/> Statutory <div style="margin-left: 40px;"> <input type="checkbox"/> Policy <input type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion) </div>		
Review Number: <input checked="" type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify)		
Triggering action:		
<input type="checkbox"/> Actual RA Onsite Construction at OU ___	<input checked="" type="checkbox"/> Actual RA	
<input type="checkbox"/> Construction Completion	<input type="checkbox"/> Previous Five-Year Review Reports	
<input type="checkbox"/> Other (specify)		
Triggering action date: September 27, 2005		
Due date (five years after triggering action date): September 27, 2010		

Five –Year Review Summary Form, cont'd

Issue:

Due to the presence of background concentrations of COCs (EDB, DBCP, 1,2-DCP, and 1,2,3-TCP) in basal groundwater above Hawaii MCLs, even with the elimination of the COCs from the Kunia Village Source Area (KVSA) and the phased monitored natural attenuation (MNA)/pump and treat remedial actions in the basal groundwater, the remedial action objective (RAO) of restoring the basal groundwater to drinking water use may not be achievable in a reasonable time frame.

Recommendations and Follow-up Actions:

Recent groundwater data show that the groundwater in the basal aquifer has “background” levels of COCs above Hawaii MCLs due to the historical application of pesticides in the area. This means that aside from the contamination resulting from the spill of COCs at the Site, the groundwater in the basal aquifer already has COCs present at levels above Hawaii MCLs. This may make it more difficult to restore the groundwater in the basal aquifer to drinking water levels. At some point in the future, this RAO of restoring the basal aquifer to drinking water levels may need to be re-evaluated.

Protectiveness Statement:

The remedy for the Del Monte Superfund Site is protective of human health and the environment because there is no exposure to untreated perched or basal aquifer groundwater. Furthermore, the Hawaii Department of Health (HDOH) prohibits any use of the basal groundwater, even for irrigation, without treatment, unless the groundwater meets State of Hawaii MCLs.

Other Comments:

None

1.0 Introduction

The United States Environmental Protection Agency (EPA) is conducting this five-year review of the remedial actions implemented at the Del Monte Corporation (Oahu Plantation) Superfund Site (the Del Monte Site, or the Site) in Kunia, Hawaii (Figure 1-1).

The five-year review process evaluates whether the remedies for the Del Monte Site, specified in the Record of Decision (ROD) (EPA, 2003), remain protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports. In addition, five-year review reports identify issues found during the review and provide recommendations and proposed follow-up actions.

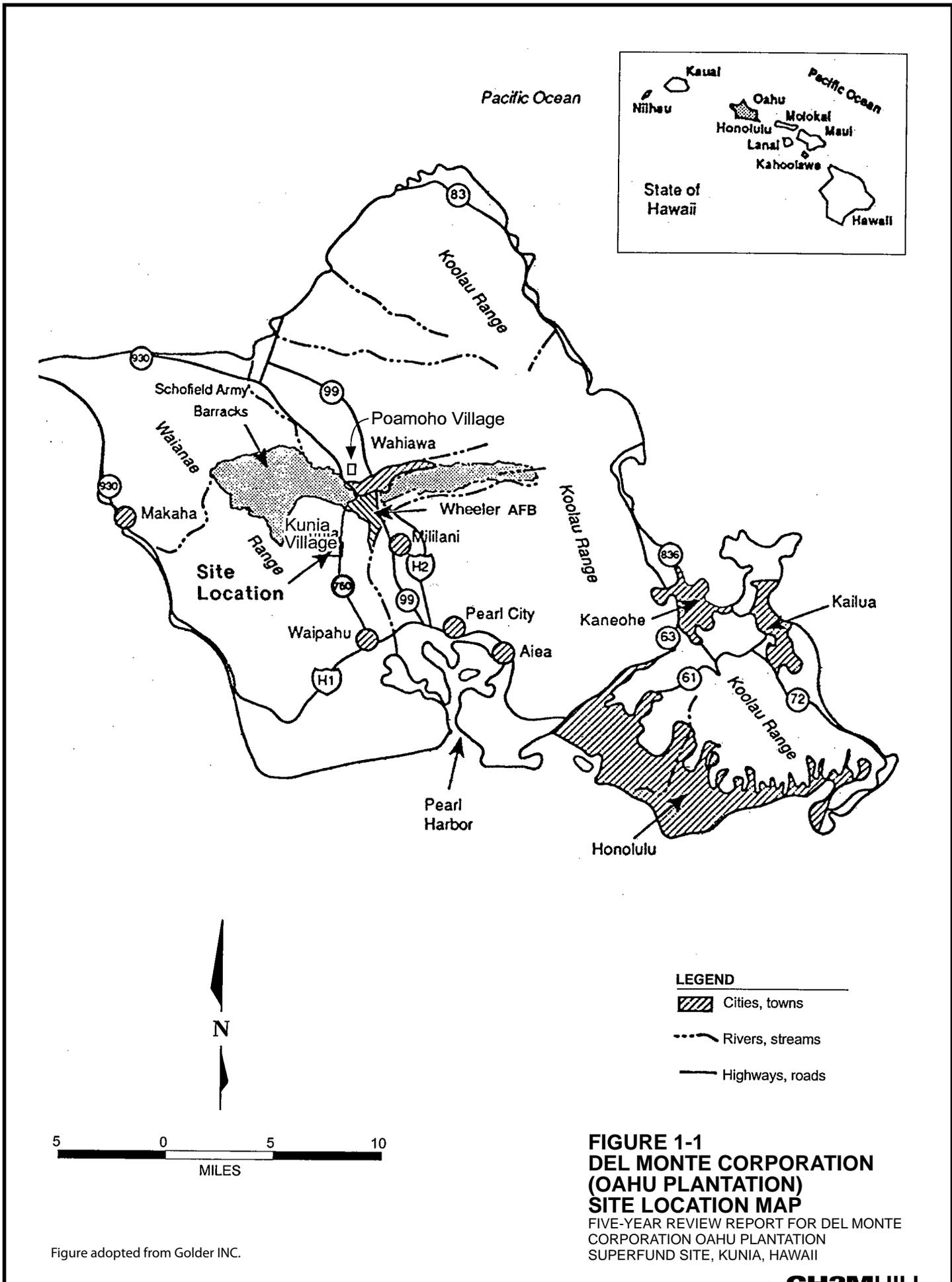
This review is required by federal statute. EPA must implement five-year reviews consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (also known as the National Contingency Plan). CERCLA Section 121(c), as amended, states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the Site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

EPA interpreted this requirement further in the National Contingency Plan; 40 Code of Federal Regulations §300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

This is the first five-year review report for the Del Monte Site, and this five-year review report has been completed because hazardous substances, pollutants, or contaminants remain at the Del Monte Site above levels that allow for unrestricted use and unlimited exposure.



2.0 Site Chronology

Table 2-1 provides a chronology of significant events at the Del Monte Site.

TABLE 2-1
Chronology of Del Monte Site Events
Del Monte Corporation (Oahu Plantation) Superfund Site, Kunia, Hawaii

Event	Date
Del Monte Corporation (Del Monte) raised pineapples on 6,000 acres in central Oahu. Fumigants (pesticides) were stored, mixed, and used to control nematodes (worms) that infest pineapples.	1940s – 2006
The Kunia well produced domestic and agricultural water for about 700 residents of Kunia village.	1946 – April 25, 1980
An accidental spill of about 495 gallons of the soil fumigant ethylene dibromide (EDB), containing about 0.25 percent 1,2-dibromo-3-chloropropane (DBCP), occurred on bare ground about 60 feet away from the Kunia well.	April 7, 1977
The Hawaii Department of Health (HDOH) sampled the Kunia well for EDB to see if the well had been contaminated. Analytical results were non-detect for EDB.	April 15, 1977
DBCP was detected in California drinking water wells near fumigated farmland, so HDOH again sampled the Kunia well, for EDB and DBCP. Analytical results for the Kunia well showed the groundwater was contaminated with EDB (300 micrograms per liter [$\mu\text{g/L}$]) and DBCP (0.5 $\mu\text{g/L}$).	April, 24 1980
Due to confirmed EDB and DBCP contamination, Del Monte disconnected the Kunia well from the Kunia Village drinking water distribution system.	April 25, 1980
Del Monte initiated soil and groundwater investigations and remedial cleanup efforts in the vicinity of the Kunia well. Besides the Kunia well spill site, significant soil and groundwater contamination was identified at the Former Fumigant Mixing and Storage areas located about 50 – 150 ft northwest of the Kunia well. With HDOH approval, approximately 18,000 tons of contaminated soil from the spill site was excavated, spread, and aerated on inactive Del Monte pineapple fields.	1981 - 1983
Shallow groundwater extraction wells were installed and operated in the upper (perched) groundwater aquifer to extract contaminated perched groundwater, and reduce infiltration to the deeper (basal) aquifer. The Kunia well was pumped approximately twice a week for 4-8 hours per day, to limit potential downgradient migration of chemicals in the basal aquifer. The extracted water from these wells was used to control road dust and irrigate non-crop areas. In 1994, EPA requested that land spreading of the contaminated water stop as it may violate the Resource, Conservation, and Recovery Act.	1980 - 1994
Del Monte funded epidemiologic studies, conducted by the University of Hawaii, which indicated no acute effects in the exposed population due to short-term exposures from Kunia well water.	1981
A Preliminary Assessment/Site Inspection (PA/SI) and Hazard Ranking Scoring process was conducted by EPA.	1990
The Del Monte Site was proposed for listing on the National Priorities List (NPL).	May 10, 1993
EPA signed a memorandum of action with the State of Hawaii, whereby EPA agreed to assume the role of lead agency with respect to enforcement activities at the Del Monte Site.	November 25, 1994

TABLE 2-1
Chronology of Del Monte Site Events
Del Monte Corporation (Oahu Plantation) Superfund Site, Kunia, Hawaii

Event	Date
The Del Monte (Oahu Plantation) Site is placed on the final NPL.	December 16, 1994
The Agency for Toxic Substances and Disease Registry (ATSDR) evaluated health effects from the pre-1980 domestic use of Kunia well water, and the effects of contaminated water use for dust control and non-crop irrigation. The ATSDR concluded that Kunia Village residents had not been exposed to significant levels of EDB and DBCP.	February 7, 1995
Administrative Order of Consent (AOC) signed by Del Monte, State of Hawaii, and EPA requiring completion of the Remedial Investigation and Feasibility Study (RI/FS).	September 25, 1995
Del Monte conducted a Superfund Treatability Study of phytoremediation using plants (koa haole) to treat contaminated groundwater. Closed-loop phytoremediation treatment cells were constructed and are being successfully used to treat extracted groundwater.	1998 – Present
The RI was conducted during 1997 and 1998 and the Final RI report was approved by EPA.	February 4, 1999
A baseline risk assessment (BRA) was performed to evaluate potential risks to human health for current Kunia Village residents and maintenance workers, downgradient Hawaii Country Club (HCC) workers, and downgradient hypothetical future residents. The BRA concluded that the groundwater contamination posed no unacceptable risks to current Kunia Village residents and maintenance workers or to HCC maintenance workers, and did not present elevated risks for future residents and maintenance workers exposed to untreated irrigation water from the Kunia well. The final BRA was approved by EPA.	December 14, 2000
The final FS, evaluating various remedial alternatives, was completed and approved by EPA.	April 22, 2003
The Record of Decision (ROD) was issued by EPA.	September 25, 2003
The First Amendment to the 1995 AOC was signed requiring Del Monte to install three deep basal aquifer monitoring wells and begin extracting and treating groundwater from the Kunia well. The AOC also specified that additional basal aquifer monitoring wells would be installed as part of Remedial Design/Remedial Action (RD/RA).	January 12, 2004
EPA deleted the Poamoho section of the Del Monte Site from the NPL, because they had determined, with concurrence from the HDOH, that the site presents no significant threat to human health or the environment.	January 13, 2004
The design for the Kunia Well Treatment System (KWTS) was completed and approved by EPA.	May 10, 2004
Quarterly basal groundwater monitoring and reporting is conducted.	2004 – Present
Consent Decree signed between EPA and Del Monte requiring Del Monte to complete remaining RD/RA work, as specified in the ROD.	September 27, 2005
EPA issued a letter to Del Monte directing that an investigation be undertaken to develop background concentrations of EDB and DBCP in the basal aquifer, and indicating that a Technical Impracticability (TI) waiver for cleanup to Hawaii MCLs may be appropriate for the Site.	February 2, 2006
EPA conducted an inspection of the KWTS and determined it was operational and functional as specified in the ROD.	May 17, 2006

TABLE 2-1
 Chronology of Del Monte Site Events
Del Monte Corporation (Oahu Plantation) Superfund Site, Kunia, Hawaii

Event	Date
EPA notified the landowner of the Oahu Plantation, James Campbell Co. LLC (JCC), that they are considered potentially responsible for costs incurred in implementing the institutional controls portion of the remedial action.	August 31, 2005
A Consent Decree was signed by the Department of Justice, EPA, and JCC, and lodged in US District Court, requiring JCC to implement institutional controls.	June 8, 2007
Final RA documents were completed including the RA Work Plan, Operations and Maintenance Manuals for the KWTS and Perched Aquifer System, Compliance Monitoring Plan, Evaluation of Background Concentrations of Chemicals of Concern, and a Three-Year Cumulative Basal Groundwater Monitoring Report.	2008 - 2009
The perched aquifer remediation system, vegetated cover, and additional monitoring and extraction wells were designed, constructed, and underwent startup and shakedown operations.	2006 to 2008
EPA conducted an inspection of the perched aquifer remedy and determined it was operational and functional as specified in the ROD, and the system became fully operational.	August 2008
A Preliminary Close Out Report documenting that all construction activities are complete at the Del Monte Site was signed by EPA.	September 8, 2008
Quarterly Perched Aquifer Remediation System monitoring and reporting are conducted.	October 2008 - Present
Del Monte announces they will cease production, harvesting, and shipment of pineapples at the Del Monte Site.	November 2006
The Del Monte lease with JCC expires and all plantation workers were laid off. Del Monte maintains responsibility for site cleanup and contractors will operate the remediation systems until cleanup goals are achieved.	December 2008
The property owner, JCC, sells all parcels of the former Del Monte Site but will complete annual inspections of the parcels and well restriction area to determine that the institutional controls are kept in force, as required by the Consent Decree.	2008 – present
First Five-Year Review initiated and Site Inspection and Interviews conducted.	December 2009/ January 2010

3.0 Site Background

The Del Monte Corporation (Oahu Plantation) Superfund Site is a former pineapple plantation located near Kunia Village, Honolulu County, Hawaii. Del Monte Fresh Produce (Hawaii) Inc. (Del Monte) grew and processed pineapple on the plantation from about 1946 to November 2006. During that time a number of pesticides (soil fumigants) were applied to the soil to control nematodes (worms) that attack pineapple roots. These fumigants were stored, mixed, and spilled in an area near the Kunia well, a former drinking water supply well. Fumigants spilled in the area have contaminated shallow (20 feet to 100 feet below ground surface [bgs]) subsurface soil and perched groundwater, as well as deep basal groundwater. Constituents of concern (COCs) in soil and groundwater are ethylene dibromide (EDB), 1,2-dibromo-3-chloropropane (DBCP), 1,2-dichloropropane (1,2-DCP), and 1,2,3-trichloropropane (1,2,3-TCP).

3.1 Physical Characteristics

Del Monte's Oahu Plantation was formerly a 6,000-acre pineapple plantation located on the north-central plateau of the Island of Oahu. Oahu's central plateau is bounded on the east by the Koolau Mountain Range and on the west by the Waianae Mountain Range (Figure 1-1).

The Island of Oahu is characterized by moderate temperatures that remain relatively constant throughout the year. Annual average rainfall on Oahu ranges from as little as 20 inches on the extreme leeward (or western) coast to as much as 300 inches at the crest of the Koolau Range. Rainfall in the Waianae Range is considerably less than in the Koolau Range. The occurrence of groundwater resources on Oahu is the direct result of rainfall infiltration. Due to the higher amounts of rainfall in the Koolau Range as compared to the Waianae Range, most of the recharge to basal groundwater is associated with the Koolau Range.

3.2 Geology

The Island of Oahu is comprised of the remnants of two late Tertiary shield volcanoes and their associated rift zones. The western part of the island is the older, eroded Waianae volcano; the eastern part of the island consists of the younger, eroded dome of the Koolau volcano. Piling up of lavas from the Koolau volcano occurred on top of the older, eroded slopes of the Waianae dome and produced the broad gently sloping plateau in the central area of Oahu.

Near-surface materials in the vicinity of the Site consist primarily of the weathered remnants of the original basaltic surface. In situ decomposition of basaltic bedrock has progressed to depths of approximately 100 to 200 feet bgs. Near-surface soils consist of several feet of a deep-red soil having a loose, and generally porous structure. Underlying the surface soil is the subsoil, which extends to depths of about 10 to 30 feet. The subsoil is similar to the surface soil in texture and mineralogy, but has larger and more distinct

structural units. The subsoil grades with depth to saprolite, which is a highly weathered basalt that retains some textural and structural features of the parent rock, such as vesicles, fractures and relict minerals. Saprolite is a clay-rich thoroughly decomposed rock formed by in-situ weathering of the basalt. Beneath the saprolite lies basalt. In places, the basalt immediately beneath the saprolite exhibits some moderate weathering. This zone of weathered basalt is a transitional zone between the highly weathered saprolite and fresh basalt.

As basalt weathers to saprolite, its pore structure is altered and, generally, permeability is decreased as secondary clay minerals fill in pore spaces. In the Kunia Village Source Area (KVSA), the permeabilities are low enough to create locally perched water tables (the perched aquifer) within the saprolite zone. The saprolite generally has a thickness of about 50 to 150 feet.

Groundwater occurs within two distinct zones in the KVSA: the perched (shallow) aquifer and the basal (deep) aquifer. Perched groundwater is not used for any purpose, but water from the perched aquifer infiltrates down to the basal aquifer. Basal groundwater is used for drinking water and irrigation; generally it flows in a southerly direction. The perched zone is a localized aquifer that exists in the vicinity of the Kunia well. It extends to approximately 100 feet bgs. The basal groundwater begins at approximately 850 feet bgs.

Two basal aquifers are present in the Kunia area. The Kunia Village area is located above the Pearl Harbor Basal Water Body near the contact between the Ewa-Kunia and Waiawa-Waipahu Aquifer portions of the basal aquifer. The estimated location of the contact between the Koolau (Waiawa-Waipahu) and Waianae (Ewa-Kunia) basalts at the basal aquifer water table elevation is about 1,000 to 2,000 feet west of the Kunia well, as shown on Figure 3-1 at the end of this section. The contact is comprised of a weathered zone and accumulations of alluvium separating the lower, older Waianae lavas from the younger Koolau lavas. Hydraulic head drop across the contact is about 2 to 3 feet, with heads in the Koolau basalts being higher. Therefore, flow across the contact is always from the Koolau to the Waianae sections. To date, no COCs have been detected in basal monitoring or production wells completed in the Ewa-Kunia (Waianae) aquifer sections.

As a result of historical, uncontrolled releases of fumigants in the vicinity of the Kunia well, both soil and perched groundwater in this area contain high levels of fumigants. The basal aquifer contains lower levels of contaminants; however, the concentrations are above Hawaii maximum contaminant levels (MCLs).

3.3 Land and Resource Use

The Oahu Plantation was operated by Del Monte until November 2006 when Del Monte ceased pineapple operations. Del Monte leased the land from the owner, James Campbell Company LLC (JCC), until the lease expired in December 2008. While comprised primarily of agricultural areas, the plantation also contained two company-operated housing areas (Kunia Village and Poamoho Village), equipment maintenance areas, chemical storage areas, warehouses, and administrative buildings. The Kunia Village housing complex is in close proximity to the primary source areas located around the Kunia well and the surrounding historical chemical storage, mixing, and handling areas.

The plantation property has now been sold by JCC for use by other agricultural operations and military housing. A Consent Decree (EPA, 2007) requires JCC to implement institutional controls (ICs) to ensure that the new owners do not engage in activities that may interfere with the operation of the remedial systems, and to complete annual inspections of the parcels and well restriction area (see Figure 3-1) to document that the ICs are being maintained. ICs also prevent unauthorized installation of production wells in the well restriction area.

3.4 History of Contamination

In April 1977, an accidental spill involving about 495 gallons of the soil fumigant EDB containing 0.25 percent DBCP occurred on bare ground within approximately 60 feet of the Kunia well. The spill resulted from the failure of a hose connector on a bulk transport container during transfer operations to an aboveground storage tank. EDB contamination was not detected above the detection limit of 0.5 milligrams per liter (mg/L) in the Kunia well based on analytical results of samples taken by the Hawaii Department of Health (HDOH) within one week of the spill. However, subsequent sampling conducted in April 1980 indicated the presence of EDB and DBCP which resulted in disconnection of the Kunia well from the Kunia Village drinking water system.

In response to the detection of the compounds in the Kunia well, Del Monte initiated soils and groundwater investigations to determine the extent of contamination in the spill area and adjacent areas where pesticides had been stored and mixed. In addition to the Kunia well spill area, other areas impacted with fumigants near the well were identified, including the Former Soil Fumigant Mixing Area and Former Soil Fumigant Storage Area (Figure 3-2). These areas are located within about 50 to 150 feet northwest of the Kunia well. The nature of accidental spillage near the former mixing and storage areas may have been intermittent over a span of years, and the cumulative quantity of accidental spillage in these areas is unknown.

3.5 Initial Response

Based on the initial investigations, 2,000 tons of contaminated soil were removed from the EDB spill area in 1981, and 16,000 tons of contaminated soil were removed from the former pesticide mixing and storage areas in 1983 (Figure 3-2). These soil removal activities resulted in the creation of a 60-foot-deep by 75-foot-wide by 75-foot-long excavation pit. With HDOH approval, the excavated soil was spread on a nearby field. Immediately after the completion of excavation activities, a fence was constructed around the excavation area and the Former Soil Fumigant Storage Area to restrict access. The entire fenced area around the pit drained generally towards the excavation, which collected water during periods of heavy rainfall (EPA, 2003).

In addition, three groundwater extraction wells were installed into the shallow, perched aquifer and pumped periodically from 1980 to 1994. The Kunia well was also pumped periodically during this time period. The extracted perched groundwater was used for dust control on in-field pineapple roads away from residential populations. Groundwater pumped from the Kunia well was used for non-crop irrigation of a grass-covered field

approximately 350 feet north of the Kunia well site. In September 1994, EPA requested that Del Monte cease pumping of the Kunia well and perched groundwater wells due to concerns regarding use of the extracted water (EPA, 2003).

In 1998, Del Monte entered into an agreement with the U.S. Department of Agriculture, U.S. Army, and U.S. Army Corps of Engineers to conduct a Superfund Treatability Study of phytoremediation using plants (koa haole) to treat contaminated groundwater. Closed-loop phytoremediation treatment cells were constructed and successfully used to treat extracted perched groundwater. The phytoremediation cells are shown in Figure 3-3.

A Preliminary Assessment/Site Investigation was conducted by EPA at the Site in 1990. EPA subsequently completed a Hazard Ranking Scoring process for the Site in 1992. The Site was added to the National Priorities List (NPL) on December 16, 1994, and Del Monte Fresh Produce (Hawaii) Inc., EPA and the State of Hawaii signed an administrative order of consent (AOC) for a Remedial Investigation/Feasibility Study (RI/FS) and Engineering Evaluation and cost analysis on September 28, 1995.

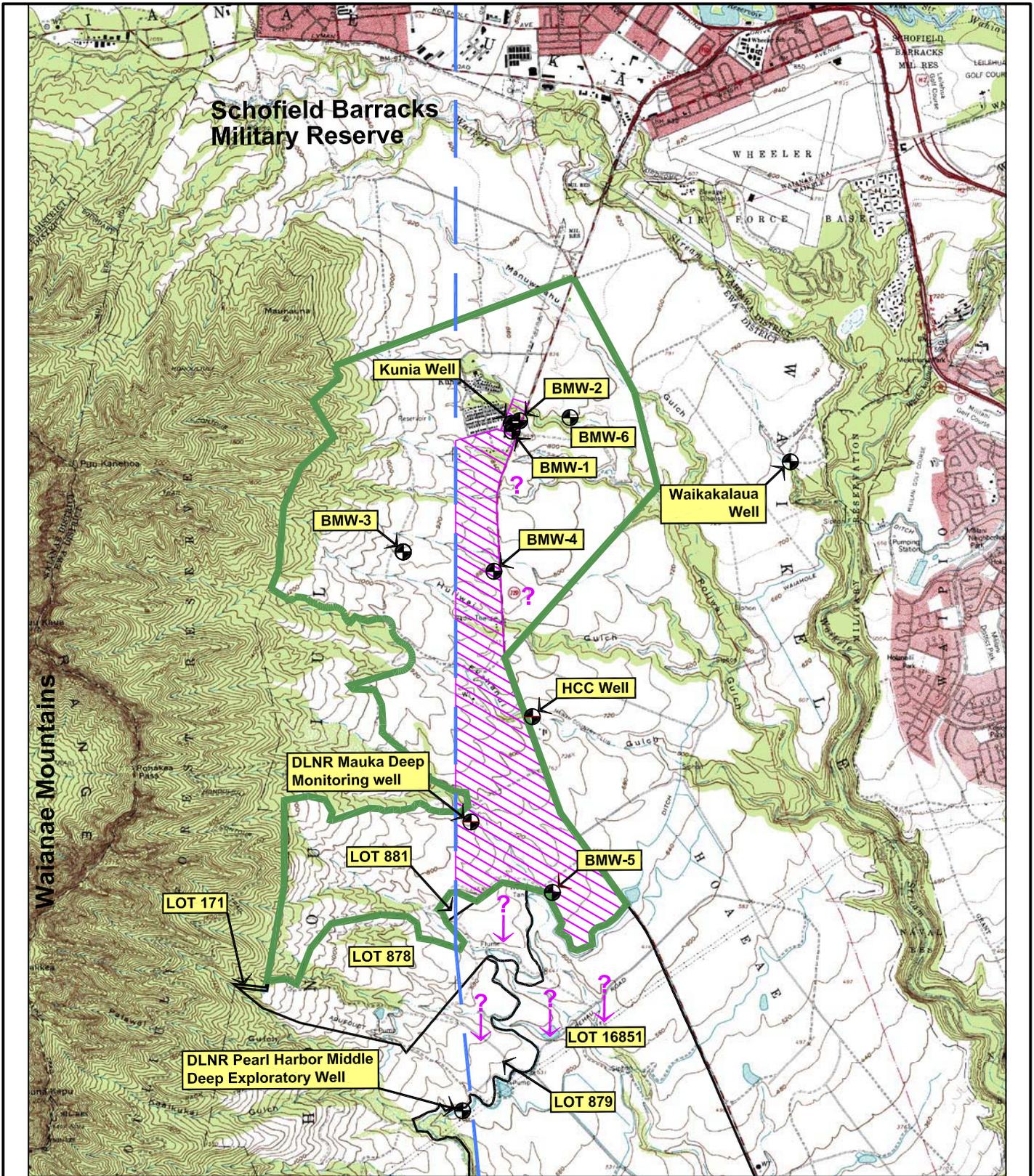
3.5.1 Remedial Investigation Activities

The Del Monte Corporation Superfund Site RI was conducted in 1997 and 1998 and the final RI report (Golder, 1998) was approved by EPA on February 4, 1999. With EPA's approval, the pit was backfilled in October 1999 (EPA, 2003). The final FS was approved on April 22, 2003. The first amendment to the AOC for the RI/FS was signed on January 12, 2004. Prior to entry into the Consent Decree, EPA approved the Basal Groundwater Monitoring Plan and the Design Report for the Kunia well pump-and-treat system for the basal aquifer and the soil vapor extraction (SVE) pilot test work plan for the perched aquifer.

3.6 Basis for Taking Action

EDB and DBCP were discovered in groundwater in the Kunia well and Del Monte Site at concentrations greater than their respective Hawaii MCLs. The site of the initial spill and the Former Soil Fumigant Mixing and Storage Areas are shown in Figure 3-2. The groundwater contamination occurred in a known drinking-water supply aquifer. Based on data from various animal studies and other scientific evaluations, all four COCs found in the basal groundwater aquifer (EDB, DBCP, 1,2-DCP, and 1, 2, 3-TCP) are classified as probable human carcinogens for an oral route of exposure. EDB and DBCP are also classified as probable human carcinogens for the inhalation route.

Risk characterization results show potentially unacceptable cancer and noncancer risks to Kunia Village and downgradient residents within 1.5 miles of the Kunia Village Area. The presence of contamination in excess of State of Hawaii drinking water MCLs in the basal aquifer, and the use of groundwater in the Del Monte Site vicinity as a source of irrigation and drinking water, provided the basis for taking action.



LEGEND

- Well Locations
- Del Monte Site Boundary
- Approximate Basal Aquifer Boundaries
- Certain areas subject to potential future investigation
- EPA Well Restriction Area
- Land Court Lots

NOTE: State Land Court Lots 171, 878, 881 and 16851 adjoin the Site and are not currently part of the Site. Portions of lots 878, 879, 881, and 16851 are subject to potential future investigation.



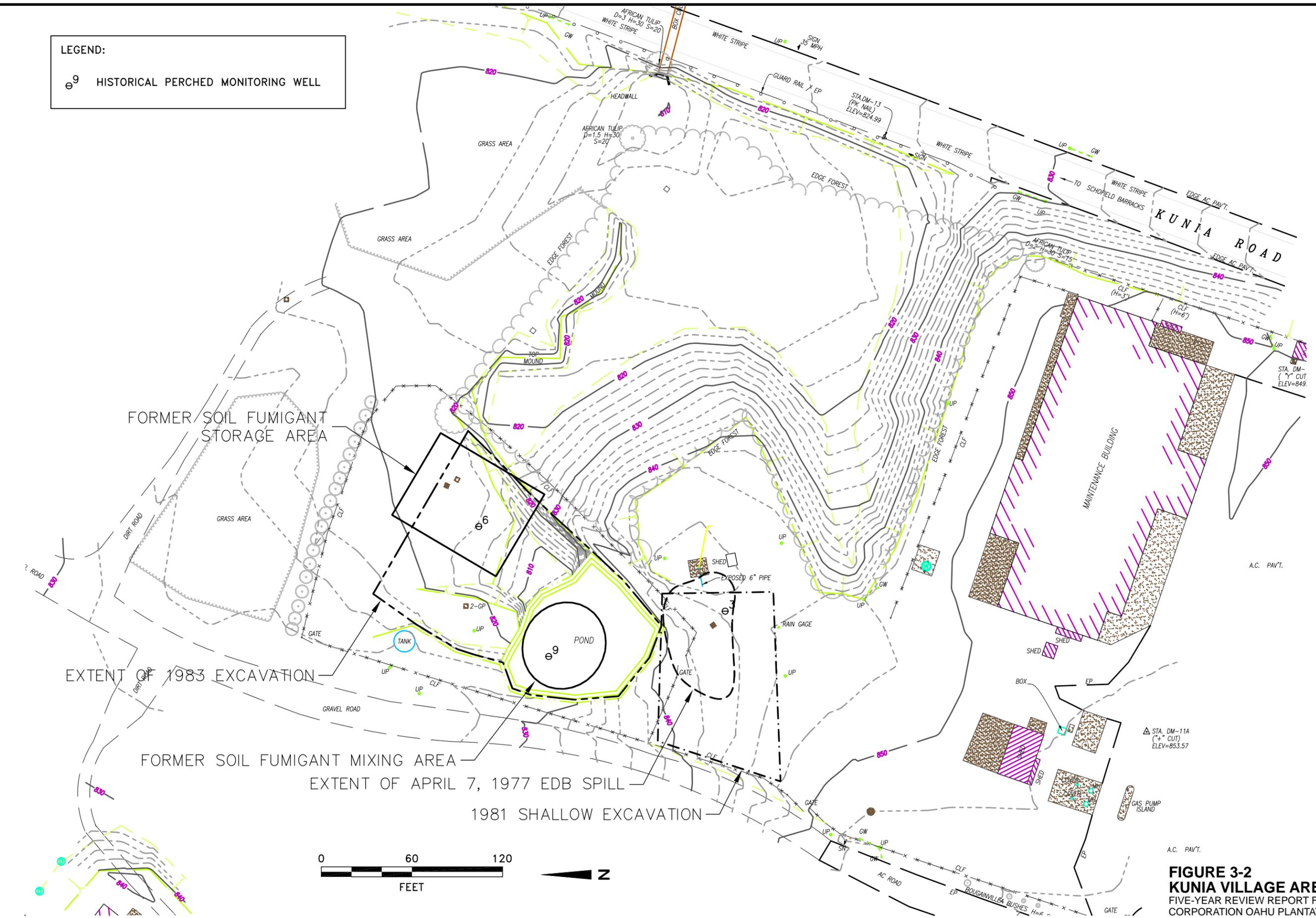
0 4000
Scale: 1"=4000 Feet

**FIGURE 3-1
SITE VICINITY MAP**

FIVE-YEAR REVIEW REPORT FOR DEL MONTE CORPORATION OAHU PLANTATION SUPERFUND SITE, KUNIA, HAWAII

LEGEND:

⊙⁹ HISTORICAL PERCHED MONITORING WELL



FORMER SOIL FUMIGANT STORAGE AREA

EXTENT OF 1983 EXCAVATION

FORMER SOIL FUMIGANT MIXING AREA

EXTENT OF APRIL 7, 1977 EDB SPILL

1981 SHALLOW EXCAVATION

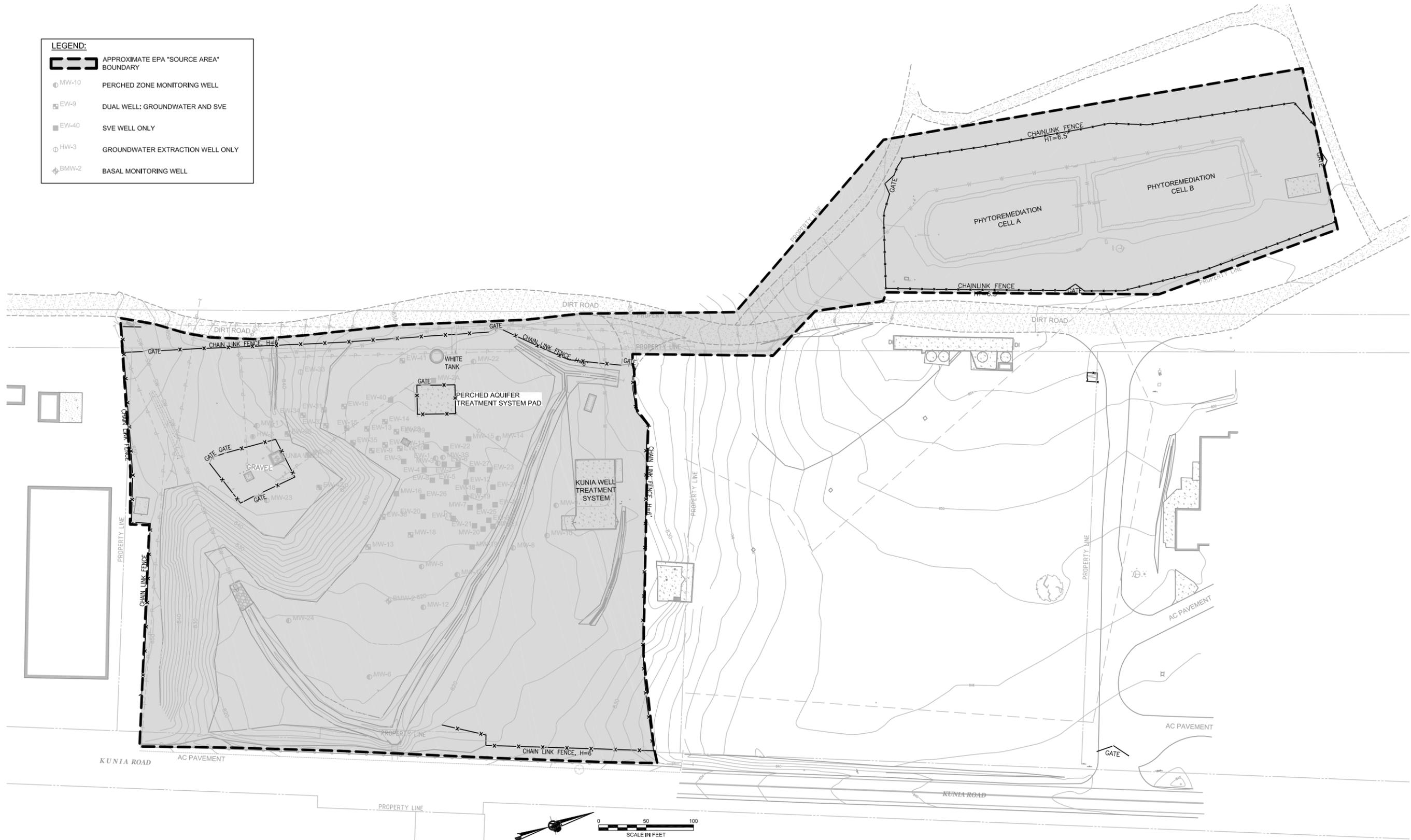


Figure adopted from Golder INC.

A.C. PAVT.

FIGURE 3-2
KUNIA VILLAGE AREA
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE CORPORATION OAHU PLANTATION SUPERFUND SITE, KUNIA, HAWAII

LEGEND:	
	APPROXIMATE EPA "SOURCE AREA" BOUNDARY
	MW-10 PERCHED ZONE MONITORING WELL
	EW-9 DUAL WELL: GROUNDWATER AND SVE
	EW-40 SVE WELL ONLY
	HW-3 GROUNDWATER EXTRACTION WELL ONLY
	BMW-2 BASAL MONITORING WELL



NOTES:
 1. SOURCE: BASE MAP AND WELL LOCATION FROM SURVEY COMPLETED AUGUST, 2008.
 2. EPA "SOURCE AREA" DEFINED IN THE INSTITUTIONAL CONTROLS CONSENT DECREE BETWEEN JAMES CAMPBELL COMPANY LLC AND EPA FILED ON SEPTEMBER 18, 2007.

Figure adopted from Golder INC.

FIGURE 3-3
EPA SOURCE AREA
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE CORPORATION OAHU PLANTATION SUPERFUND SITE, KUNIA, HAWAII

4.0 Remedial Actions

4.1 Remedy Selection

The ROD for the Del Monte Corporation (Oahu Plantation) Superfund Site was signed in September 2003. The main goals of the selected remedial actions at the Site were to eliminate exposure to contaminants at the Site and to restore the groundwater underneath the Site to drinking water use. Specifically the remedial action objectives (RAOs) for the Del Monte Site are to:

- Prevent exposure of the public to contaminated groundwater above chemical-specific cleanup levels (described below);
- Inhibit further migration of the contaminant plume away from the KVSA (source control);
- Limit discharge of KVSA perched groundwater and deep soil contaminants to basal groundwater such that basal groundwater concentrations do not exceed the chemical-specific cleanup goals described below (source control), and;
- Restore basal groundwater to its beneficial use of drinking water supply within a reasonable timeframe (aquifer restoration).

EPA's selected cleanup remedy is divided into two parts: 1) the shallow groundwater (perched aquifer) and contaminated soil in the KVSA from approximately 20 feet bgs to 100 feet bgs, and 2) the deep groundwater (basal aquifer). The selected remedies address contamination through the actions described below.

4.1.1 Perched Aquifer and Deep Soil Remedy Components

The contaminated soil in the KVSA has been designated as a principal threat at the Site. EPA's goal is to prevent perched aquifer and deep soil contaminants (deeper than 20 feet) from further contaminating the basal aquifer. This will be achieved by extracting and treating contaminated groundwater from the perched aquifer and treating deep soil. Perched aquifer treatment system layout is as shown in Figure 4-1 at the end of this section. Specific components include:

- Pumping contaminated groundwater from the perched aquifer and treating the water using plants (referred to as phytoremediation).
- Placing a vegetated soil covering (a cap) over the contaminated soil area (the source area). The soil cap will reduce the amount of rainwater that moves through the soil and carries contaminants down to the basal aquifer.
- Installing a soil vapor extraction system to withdraw contaminants present in vapor form (volatile chemicals) from the soil. The extracted vapor will be treated with a carbon filter to remove the contaminants before the vapor is released to the atmosphere.

- Restricting land use to prevent exposure to contaminated soil and perched groundwater impacted by COCs and to prevent activities that might interfere with the effectiveness of the remedy.

4.1.2 Basal Aquifer Remedy Components

EPA's goal is to prevent future exposure to contaminated groundwater in the basal aquifer. The selected remedy components in addressing the basal aquifer are as follows:

- Installing monitoring wells to characterize the extent of contaminated groundwater in both the source area and the downgradient plume.
- Pumping and treating contaminated groundwater in a phased manner, starting at the Kunia well.
- Monitoring the effectiveness of source control and evaluating whether natural attenuation is effective at reducing contaminant concentrations in the downgradient plume to drinking water standards.
- If monitoring data show no evidence of natural breakdown, install additional pumping wells to ensure the entire plume is captured and treated.
- Treating the contaminated groundwater to drinking water standards using air stripping and carbon adsorption.
- Using treated groundwater for irrigation.
- Restricting land use to prevent exposure to basal groundwater impacted by COCs and to prevent activities that might interfere with the effectiveness of the remedy.

4.2 Remedy Implementation

Groundwater monitoring, extraction and treatment for the perched aquifer started in 1998 as part of the phytoremediation treatability study. In 2008, modifications were made to improve system performance and combine groundwater extraction with SVE. The Kunia Well Treatment System (KWTS) was designed in 2003, constructed in 2005, and has been operating since September 2005.

4.2.1 Perched Aquifer and Deep Soil Remedy

The perched aquifer source area refers to the portion of the perched aquifer where COCs in groundwater exceed 1.0 micrograms per liter ($\mu\text{g}/\text{L}$). The perched aquifer treatment system consists of a vegetative soil cap, as well as groundwater extraction and treatment and SVE systems for the perched aquifer source area.

Between 1998 and 2008, 24 monitoring wells were installed to delineate the extent of perched aquifer COCs, and 42 perched aquifer groundwater extraction wells were installed to reduce infiltration to the basal aquifer of perched groundwater containing the highest levels of COCs. Prior to completion of the full-scale perched groundwater extraction and SVE treatment system (completed in July 2008), extracted groundwater was treated in the phytoremediation system. Construction activities included the conversion of 30 monitoring

and extraction wells that had little water present or that were dewatered from previous pumping to new SVE wells. Additionally, 19 wells were converted into dual extraction wells to serve as both SVE and groundwater extraction wells. By July 2008, 19 dual and two groundwater-only extraction wells were fitted with air-driven, low-level drawdown groundwater extraction pumps. These pumps are typically set approximately 1.5 feet from the bottoms of the wells to maximize the ability to dewater the perched aquifer for SVE operations. Pumps automatically activate when the water level rises to above the pump and deactivate when the water is lowered to the top of the pump.

Extracted perched groundwater is currently treated by the KWTS (the primary treatment route), or by phytoremediation if the KWTS is not operating. The phytoremediation system is a closed-loop system with no subsurface infiltration or discharge. Lined phytoremediation cells collect excess water in a sump and then re-circulate it through a drip irrigation system.

The perched aquifer remediation system is shown on Figure 4-1. There are currently 63 perched aquifer wells at the Site. Twelve wells are groundwater monitoring only; the remaining 51 wells consist of 19 dual groundwater extraction and SVE wells, 30 SVE-only wells, and two groundwater-only extraction wells (Golder, 2009e). Dual-extraction and SVE-only wells are plumbed into nine groups of wells called “headers,” which are connected to two vacuum blowers that extract air from the subsurface soil, along with volatile organic compounds (VOCs), in the vicinity of the wells. The extracted air and VOCs are treated with granular activated carbon (GAC) before the offgas is discharged to the atmosphere.

In 2008, as part of the perched aquifer remedy, a vegetative soil cover was installed over the entire perched aquifer source area to reduce infiltration to the perched aquifer. A stormwater control system was also installed to divert runoff to drainage channels around the perched aquifer.

4.2.2 Basal Aquifer Remedy

Pursuant to the ROD, the KWTS is designed to restore the basal aquifer in accordance with the ROD. The system consists of groundwater extraction from the Kunia well, treatment of extracted groundwater, and distribution of treated water to a crop irrigation system (Golder, 2008). The KWTS is enclosed within a 6-foot-high chain link fence to prevent unauthorized entry to the treatment area. Groundwater is generally extracted 24 hours a day, except for weekends, holidays, and during routine maintenance, with a constant flow electric powered pump. Extracted groundwater from the Kunia well is treated to below Hawaii MCLs for the COCs by air stripping, followed by liquid-phase carbon adsorption for effluent from the air stripping tower. Treated groundwater is pumped into a 10-inch-diameter discharge pipe which connects to the irrigation distribution piping in the Kunia section of the former Del Monte Oahu Plantation.

As specified in the ROD, Del Monte also implemented a groundwater monitoring program. As part of the program, Del Monte installed a basal groundwater monitoring well network, as shown in Figure 4-2. Del Monte collects and analyzes quarterly groundwater samples from the basal groundwater monitoring well network and monthly groundwater samples from the KWTS.

4.3 Operation and Maintenance

Del Monte, with EPA oversight, is conducting long-term operation and maintenance (O&M) and monitoring of the remediation systems at the Del Monte Corporation (Oahu Plantation) Superfund Site. O&M activities are being conducted in accordance with the following EPA-approved documents:

- *Draft Final Operations and Maintenance for the Kunia Well Pump and Treat System. Groundwater Extraction, Del Monte Corporation (Oahu Plantation) Superfund Site* (Golder, 2006).
- *Final O&M Manual for the Kunia Well Pump-and-Treat System, Del Monte Corporation (Oahu Plantation) Superfund Site* (Golder, 2008).
- *Operations and Maintenance Manual for the Perched Groundwater Remediation System, Del Monte Corporation (Oahu Plantation) Superfund Site* (Golder, 2009c)
- *Compliance Monitoring Plan, Del Monte Corporation (Oahu Plantation) Superfund Site* (Golder, 2009d).

Current O&M and compliance monitoring reporting requirements are quarterly for both the perched and basal remediation systems, and annually for the ICs. Every three years, a cumulative basal groundwater monitoring report is also required.

4.3.1 Basal Aquifer Treatment System

The Kunia well and KWTS have been in full-scale operation since September 2005 and have treated approximately 1.24 billion gallons of groundwater through December 2009. The KWTS was designed to treat up to 1,000 gallons per minute (gpm) of groundwater extracted from the Kunia well for basal groundwater plume capture and source control. However, it was determined that a 1,000-gpm sized pump would not fit in the Kunia well, so a smaller pump capable of 750 gpm was installed. The pump achieved 750 gpm during startup but eventually decreased to approximately 720 gpm. The Kunia well pumping rate was further reduced to an average continuous rate of 500 gpm based on a capture zone analysis and data evaluation indicating that the Kunia well pump can be off for 45 days before loss of plume capture occurs (Golder, 2008).

Beginning in 2008, extracted perched groundwater, which contains much higher concentrations of COCs than basal groundwater, was blended with the extracted basal groundwater and treated by the KWTS, rather than the phytoremediation system. In January 2009, monthly KWTS performance sampling analytical results indicated that GAC removal efficiency had dropped below 50 percent, resulting in breakthrough of COCs above Hawaii MCLs in treated effluent. The KWTS was shut down and spent bituminous GAC was removed and replaced with a new coconut-based GAC. The KWTS resumed operation in February 2009. Spent GAC from the KWTS was determined to contain listed hazardous wastes (EDB and DBCP). The GAC (approximately 16 tons) was transported to, and disposed of at, a permitted hazardous waste disposal facility in Oregon (there are no hazardous waste facilities in Hawaii) at a cost of about \$37,000. Current monitoring data indicate the new GAC is performing well.

Beginning in about 2007, periodic malfunctions of submersible pumps in several of the basal groundwater monitoring wells were encountered due to corrosion and leaks in the steel discharge pipes in the wells. With EPA approval, all submersible pumps were removed from basal monitoring wells and replaced with dedicated point-source bailers, which should result in O&M cost savings and more reliable quarterly basal monitoring data.

4.3.2 Perched Aquifer Treatment System

Although perched groundwater extraction to reduce COCs in the perched groundwater and minimize infiltration to the basal aquifer has been ongoing at the Site since the 1980s, the full-scale perched aquifer remediation system consisting of groundwater extraction, SVE, a vegetated soil cap, and stormwater controls began operation in late 2008. A total of approximately 1.3 million gallons of groundwater were extracted and treated in 2009. Currently, minor and routine adjustments are being made to the SVE system (cycling operation between headers) and perched groundwater extraction pumps to increase extraction efficiency. No significant or unexpected issues have been identified.

4.3.3 Institutional Controls

A Consent Decree was issued on March 19, 2007 (EPA, 2007) that requires the former landowner (JCC) to monitor the institutional controls at the Site to verify that new property owners and lessees have not undertaken any construction in the source area that would damage or interfere with the perched or basal aquifer remediation systems. Additionally, JCC must also monitor the well restriction area for any groundwater extraction permits or activities that may damage or interfere with basal groundwater monitoring wells. An annual IC report is submitted to EPA by JCC. The 2008 and 2009 annual IC reports indicate that there have been no issues or problems with the ICs (LFR Inc., 2009a; 2009b).

4.3.4 O&M Costs

The original O&M present value cost estimate for the perched aquifer treatment system was \$1,590,000 (Golder, 2003). The original O&M present value cost estimate for the basal aquifer treatment system, including post-closure monitoring, was \$5,580,000 for 30 years (Golder, 2003). Table 4-1 summarizes the actual O&M costs for the review period of 2005 through 2009.

TABLE 4-1
 Del Monte Treatment System Operation and Maintenance Costs 2005 – 2009
Del Monte Corporation (Oahu Plantation) Superfund Site, Kunia, Hawaii

Year	Total O&M Costs	Comments
9/1/2005 To 12/31/2005	\$140,000	For basal groundwater (GW) only (KWTS pump and treat system; started Sept. 2005)
1/1/2006 To 12/31/2006	\$464,000	For basal GW only (KWTS)
1/1/2007 To 12/31/2007	\$464,000	For basal GW only (KWTS)
1/1/2008 To 12/31/2008	\$498,000	For basal GW (KWTS) and ½ year for perched system (SVE and GW pump and treat; started July 2008)
1/1/2009 To 12/31/2009	\$690,000	For basal GW (KWTS) and perched system (SVE and GW pump and treat)
Total for Years 2005 – 2009	\$2,256,000	

Note:

Perched aquifer treatment system O&M costs prior to full-scale system startup in July 2008 are not included because system costs incurred before that time are more accurately characterized as pilot testing and characterization.

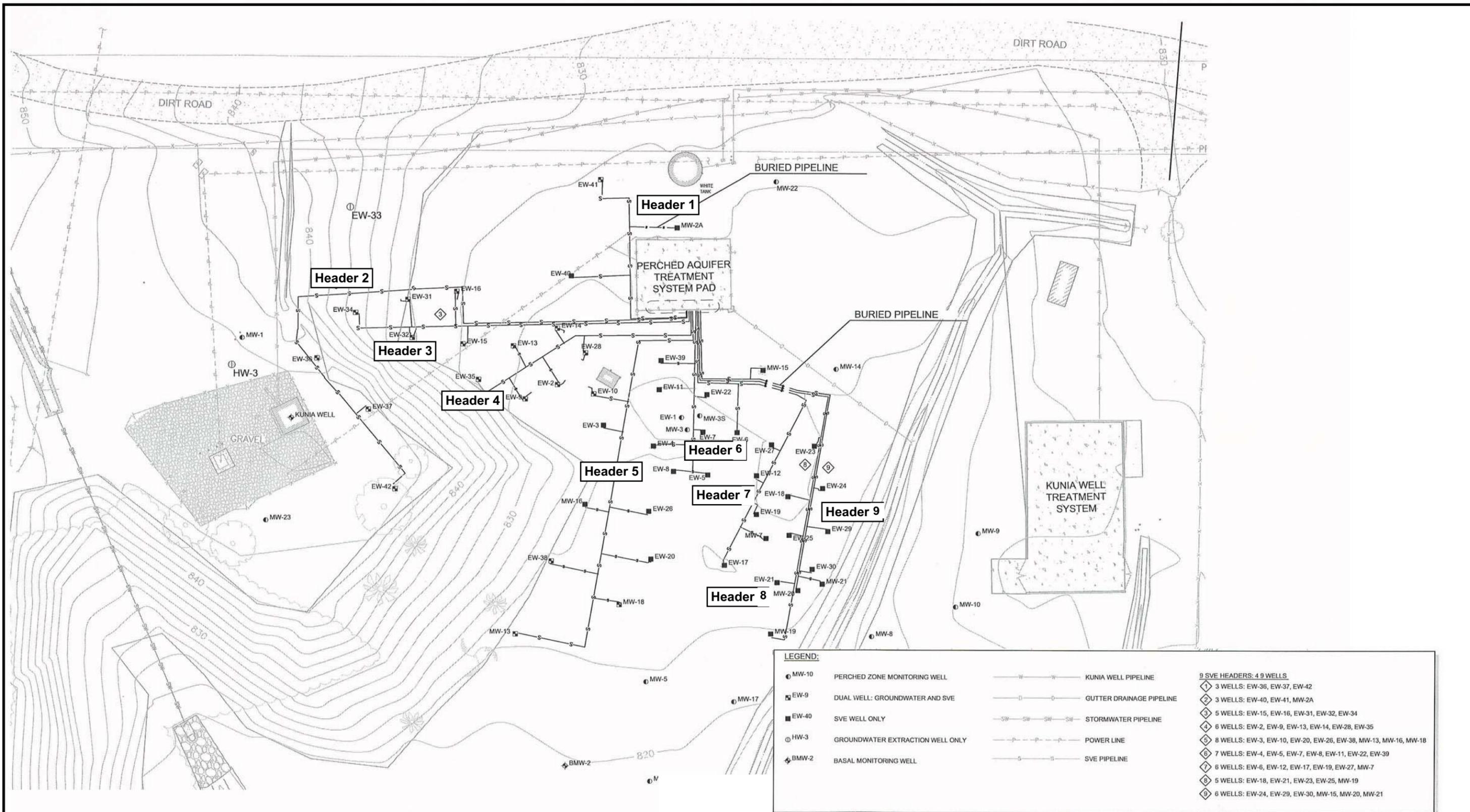
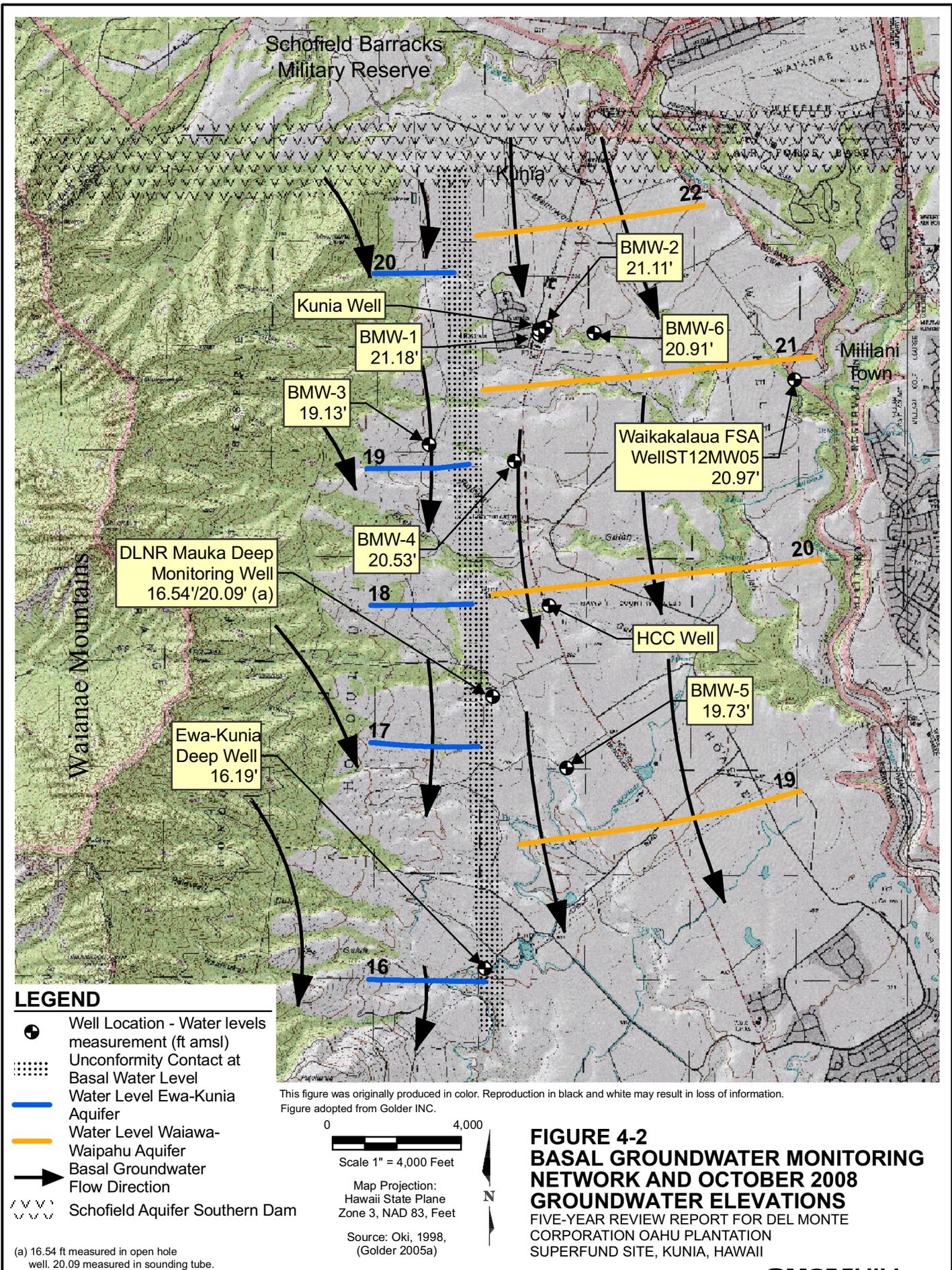


Figure adopted from Golder INC.

FIGURE 4-1
PERCHED AQUIFER TREATMENT SYSTEM LAYOUT
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII

NOTES:
 SOURCE: BASE MAP AND WELL LOCATION FROM SURVEY COMPLETED AUGUST, 2008.



5.0 Progress Since the Last Five-Year Review

This is the first five-year review for this Site. There are no recommendations from a previous review.

6.0 Five-Year Review Findings

6.1 Five-Year Review Process

The five-year review consisted of a review of relevant documents (Appendix A); Applicable or Relevant and Appropriate Requirements (ARARs) evaluation (Appendix B); human health and ecological risk assessment review (Appendix C); data review (Appendix D); institutional controls review (Appendix E); and a site inspection and interviews with staff associated with O&M of the treatment system and Hawaii Department of Health staff (Appendices F and G).

6.2 Community Notification and Involvement

A public notice indicating the initiation of the five-year review was published in the *Honolulu Advertiser* newspaper on March 4, 2010. The final five-year review report will be placed in Site information repositories.

6.3 Document Review

As a part of the five-year review process, a review of numerous documents related to Site activities was conducted. The documents chosen for review primarily focused on 2005 to present, but ranged in publication date from 1998 to the present. Appendix A provides a list of the documents reviewed as part of this report.

6.4 ARARs Review

The ARARs for the Del Monte Site were presented in the *Record of Decision, Del Monte Corporation (Oahu Plantation) Superfund Site* (EPA, 2003). Chemical-specific ARARs and action-specific ARARs were identified in the 2003 ROD. No location-specific ARARs were identified in the 2003 ROD. A regulatory review was conducted to determine if new or revised regulations promulgated since the issuance of the 2003 ROD may now impact the protectiveness of the remedy on human health and the environment. The specific regulations cited for each ARAR were reviewed for changes since the 2003 ROD was issued. The review did not identify any changes to ARARs identified in the ROD that could potentially impact the protectiveness of the remedial actions. Since no significant changes to ARARs were identified during this review, their status remains unchanged. A detailed discussion of the ARARs review can be found in Appendix B.

6.5 Human Health, Toxicology and Ecological Risk Analysis Review

A risk assessment and toxicology analysis review was conducted to support the five-year review of the Del Monte Site. To determine whether the remedy at the Site remains protective of human health and the environment, changes in Site conditions, exposure pathways, toxicity values, and cleanup levels since completion of the Baseline Risk Assessment (BRA) and selection of the Site remedy were evaluated. Based on an evaluation of current Site conditions, exposure pathways, and toxicity values, the review found that remedial actions at the Del Monte Site are currently protective of human health and the environment. Potential sources of exposure that could result in unacceptable risks are being controlled. A detailed discussion of the Risk Assessment and Toxicology Analysis review can be found in Appendix C.

6.6 Data Review

The data review analysis provides an evaluation of the mass of COCs in the perched aquifer soils, the groundwater extraction system, perched aquifer COC trends, the SVE system, COCs in the Kunia well used for basal aquifer extraction, and COC trends in the basal aquifer. Collectively these data were evaluated to determine whether remedial actions are resulting in the intended outcomes described in the ROD for COCs originating in the Kunia Village Source Area. A detailed discussion of the data review analysis and evaluation can be found in Appendix D.

6.6.1 Evaluation of Perched Aquifer Remedy

The overall objective of the perched aquifer remedy, as described in the ROD, is to reduce perched aquifer contamination such that it can no longer cause exceedances of Hawaii MCLs in the basal aquifer. The perched groundwater monitoring program has been conducted quarterly since the full-scale perched aquifer system was started in 2008 to evaluate the effects (e.g., changes in groundwater chemical concentrations, dewatering of the perched groundwater aquifer, contaminant removal using SVE) of the perched aquifer remediation system. Groundwater extraction provides hydraulic containment, COC source removal, and dewatering of the perched aquifer so that the SVE system can remove COCs from soil in the deeper, most contaminated portion of the perched aquifer. Because implementation of full-scale operation of the perched aquifer remedy has only been active for about 1.5 years, there are currently limited data to evaluate the performance of this remedy.

6.6.1.1 Evaluation of Perched Aquifer Dewatering

Automatic groundwater extraction pumps in the perched aquifer wells, in combination with the vegetated cover and stormwater diversion system, have been effective at dewatering the perched aquifer during times of normal rainfall. However, the pumps may become temporarily overwhelmed during long winter rainfall events, due to a combination of increased stormwater infiltration and possible recharge from upgradient portions of the perched aquifer. The elevated water levels in the SVE wells during wet months may cause water to be drawn into the SVE wells, reducing effective operation of the SVE system. The

effectiveness of the SVE system is further reduced when perched aquifer water levels are elevated because this leads to elevated soil moisture and reduced soil permeability throughout the perched aquifer.

6.6.1.2 Evaluation of Perched Aquifer Groundwater COC Data

The evaluation of long-term trends in perched aquifer groundwater COC concentrations is complicated by the limited number of wells with a sufficient amount of water to allow for sampling, due to dewatering of the perched aquifer. The concentrations of COCs in the perched aquifer generally decreased shortly after the start of post-RI perched groundwater extraction activities in 2004. After the initial decline in concentrations, COC concentrations have generally remained steady, with some wells indicating slight increasing trends, while others demonstrate slight decreasing trends. Many wells saw higher-than-normal concentrations in the first sampling event in October 2008 after full-scale treatment commenced; however, subsequent sampling results returned to historical ranges.

In the RI and subsequent investigations, elevated COCs were present in the deepest portion of the aquifer, at the base of the saprolites where the perched aquifer wells are completed. The perched aquifer extraction wells have generally been effective at dewatering the perched aquifer to the pump levels..

6.6.1.3 Evaluation of Soil Vapor Extraction Data

Vacuum readings collected through October 2009 at each of the active SVE wells and surrounding wells indicate that the SVE system is achieving inward pressure gradients throughout each of the active treatment areas (headers) and slightly beyond. Overall, the SVE system is operating in accordance with its design.

The performance objectives for the SVE system specified in the ROD are removal of COC masses from the perched aquifer source zone soils by exerting an inward pressure gradient across the source area. The SVE system is expected to operate until source area COC masses for EDB and 1,2-DCP have been reduced to a level where they no longer cause exceedances of Hawaii MCLs in the basal aquifer.

SVE off-gas samples are collected at least monthly from each operational header to indicate the relative contribution of COCs from different areas of the Site. This information permits activation of headers in higher concentration areas to optimize removal efficiency.

The SVE portion of the perched aquifer remedial action has not been operated long enough for a complete evaluation at this time.

6.6.2 Evaluation of Basal Aquifer Remedy

The ROD specified a two-phased approach for the basal aquifer remedy. Phase 1 of the remedy includes installation of monitoring wells to characterize the source area and downgradient plume; source control at the Kunia well through groundwater extraction and treatment; and downgradient plume monitoring to determine whether monitored natural attenuation (MNA) is effective at reducing COC concentrations to Hawaii MCLs. Phase 2 of the remedy specified that if monitoring data show that MNA is not effective at reducing contaminant concentrations to Hawaii MCLs within 5 years, additional groundwater extraction and treatment will be implemented to ensure that the entire plume is captured

and treated. However, as described in the following subsections, due to the presence of background COCs throughout the basal aquifer greater than Hawaii MCLs, it is likely impracticable to reduce COCs within the basal aquifer to Hawaii MCLs with groundwater extraction or MNA. A detailed discussion of the basal aquifer data review analysis and evaluation can be found in Appendix D.

6.6.2.1 Evaluation of Basal Aquifer Groundwater Extraction and Source Control

The Kunia well extraction and treatment system has operated steadily with minimal interruptions since startup in 2005. From September 2005 to October 1, 2008, the Kunia well and KWTS had operated for 21,160 hours and pumped/treated approximately 914 million gallons of water.

The average of the detected COC concentrations for the Kunia well samples were: EDB - 0.045 µg/L; DBCP - 0.39 µg/L; and 1,2,3-TCP - 1.4 µg/L (Golder, 2009b). The resulting total mass of COCs removed is estimated to be: 0.15 kg of EDB; 1.35 kg of DBCP; and 4.85 kg of 1,2,3-TCP (Golder, 2009b). In comparison, the amount of DBCP estimated to be present in a square mile of the basal aquifer, assuming a uniform concentration of 0.25 µg/L, is less than 4.5 kg, or less than 1 gallon (Golder, 2009a). The fourth COC, 1,2-DCP, is detected in the basal groundwater samples, but has not historically exceeded the MCL.

Pumping tests and capture zone analysis conducted during startup of the Kunia well in 2005 (Golder, 2007) indicated that the Kunia well extraction system captures COCs that originate from the basal aquifer source area. The capture zone analysis also indicated that reductions in COC concentrations in the source area from the pump and treat activities would be observed in a relatively short time in groundwater monitoring wells located in the source area (e.g., BMW-1 and BMW-2), and that basal groundwater extraction from the Kunia well would take longer to affect groundwater quality at BMW-4, located 3,500 feet downgradient of the Kunia well. The estimated basal groundwater travel time to BMW-4 is about two to three years. However, COC concentrations have generally remained consistent in the Kunia extraction well source area since pumping began in September 2005.

6.6.2.2 Evaluation of Basal Aquifer Downgradient Plume

Basal groundwater level measurements and contours indicate that the regional hydraulic gradient is southerly. In the course of evaluating the extent of the basal aquifer COC plume and data from background basal monitoring well BMW-6, data consistently indicated that a background source of COCs is present within the Waiawa-Waipahu Aquifer related to intensive historical application of fumigants at pineapple farms located throughout the central Oahu plateau. An assessment of these data was presented in the *Three-Year Cumulative Basal Groundwater Monitoring Report* (Golder, 2009b), and in the *Report on Evaluation of Background Concentrations of Contaminants of Concern in the Basal Aquifer* (Background Report) (Golder, 2009a). The Background Report (Golder, 2009a) concluded that multiple lines of evidence indicate that approximately 95 percent of the COCs currently observed in the basal aquifer beneath the perched aquifer source area (Kunia well, BMW-1 and BMW-2) are from widespread regional application of these COCs on agricultural fields and not directly related to the Del Monte Site. EPA concurs with the Background Report's conclusion that background concentrations exist and is working with Del Monte to establish background COC concentrations (EPA, 2006).

Three wells (Kunia well, BMW-1 and BMW-2) are completed within or near the KVSA, whereas wells BMW-4 and BMW-5 are located downgradient of the KVSA. Well BMW-6 is a background well located cross-gradient of the KVSA. The concentrations of EDB and DBCP detected in the Kunia well and BMW-1 decreased from 1997 to 2005, presumably due to the startup of post-RI perched aquifer groundwater extraction. From 1997 through 1999 the concentrations of EDB in the Kunia well and BMW-1 averaged 0.16 µg/L. From 1997 through 1999 the concentrations of DBCP in the Kunia well and BMW-1 averaged 0.77 µg/L. Concentrations of EDB and 1,2-DCP have remained consistent since 2005, while concentrations of DBCP have been slightly increasing in the Kunia well and BMW-2. Analytical data for these wells are summarized in graphs presented in Appendix D.

Concentrations of 1,2,3-TCP, which was not a significant component of the fumigants released at the Del Monte Site, are low or nearly absent in the perched aquifer source area wells, but increased in many of the basal wells during 2006; concentrations have subsequently shown a general decline since 2007. These data provide evidence that the Kunia well is capturing COCs not originating from the perched aquifer source area. Concentrations of EDB and 1,2-DCP in BMW-1, BMW-2, and the Kunia well are generally similar to the COC concentrations in BMW-4, BMW-5 and BMW-6, located long distances downgradient or cross-gradient of the KVSA, providing additional evidence for background concentrations of the COCs that are present in the KVSA.

6.6.2.3 Conclusions

Recent groundwater data shows that the groundwater in the basal aquifer has “background” levels of COCs above Hawaii MCLs due to the historical application of pesticides in the area. This means that aside from the contamination resulting from the spill of COCs at the Del Monte Site, the groundwater in the basal aquifer already has COCs present at levels above Hawaii MCLs. This recent data may make it more difficult to restore the groundwater in the basal to drinking water levels, which is one of the remedial action objectives of the basal aquifer remedy. At some point in the future, this remedial action objective and cleanup levels of Hawaii MCLs for the basal aquifer may need to be re-evaluated. Because background levels of COCs in the basal aquifer are currently above Hawaii MCLs, remedial action objectives will need to be re-evaluated and/or modified and documented in a decision document.

6.7 Institutional Controls

A Consent Decree was issued on March 19, 2007 (EPA, 2007) that requires annual monitoring of ICs at the Site to verify that property owners and lessees have not undertaken any construction in the source area or the well restriction area that has damaged or interfered with basal groundwater monitoring or extraction wells. The ROD (EPA, 2003) identified ICs as a component of the Site remedy. A detailed discussion of the ICs review can be found in Appendix E.

Based upon review of various documents, interviews with key personnel, and the Site inspection, it appears that the institutional controls, as well as the engineered controls, are currently functioning as intended. As part of this five-year review, title reports were obtained for the Site. Declaration of Environmental Restrictions (Well Restriction Area) and

Declaration of Covenants regarding Water Allocation and Easements are properly recorded as evidenced from the reports (Appendix E). Prohibited use and activities include, but are not restricted to, application for permits to withdraw water from a well in the well restriction area without prior EPA approval, and construction in the well restriction area that damages or interferes with components of the remedy. The restrictions set forth in the declaration run with the property and are binding on all occupants. There are no known deficiencies related to the institutional controls set forth in the ROD for the Del Monte Site. The ICs remain protective of human health and the environment.

6.8 Site Inspection

A site inspection at the Del Monte Corporation (Oahu Plantation) Superfund Site was made on January 27, 2010. EPA, with assistance from CH2M HILL, conducted the site inspection. As part of the inspection, interviews and a technical review of the components of the remedies were conducted for this Del Monte five-year review report. Golder Associates' project manager, the site O&M supervisor, and an HDOH representative were interviewed as part of the site inspection report. The site inspection checklist is contained in Appendix F of this five-year review report, as are select Site photographs.

No violations, unauthorized entries, or vandalism were reported for the review period of 2005 to 2009. Warning signs are posted on the fences and gates at the treatment systems and the security fence around the source area is in good condition, as were the additional fences around the perched and basal aquifer treatment systems.

Onsite documents and records were verified during the site visit. The *Operations & Maintenance Manual for the Kunia Well Pump and Treat System* (Golder, 2008), *Operations & Maintenance Manual for the Perched Groundwater Remediation System*, including *As-Built Drawings* (Golder, 2009c), and *Compliance Monitoring Plan* (Golder, 2009d), as well as O&M records for perched and basal remediation systems, daily logs, and weekly and monthly inspection logs, were up to date and complete.

The Kunia well and perched aquifer treatment systems were observed to be in good condition and well maintained. All perched aquifer monitoring wells were inspected and found in good condition. They are sampled quarterly, which was verified by reviewing the quarterly monitoring reports. The stormwater diversion channel, which is lined with rip-rap, is in good condition and appeared to be functioning as designed. Vegetation along the lower stormwater channel helps filter stormwater runoff and keeps the drainage culvert underneath Kunia road free of debris.

The vegetated cap over the perched aquifer area appeared to be in good condition and no settlement or erosion was observed. Fresh soil has been placed around several perched aquifer extraction well pads to make them match existing surface grade and to mitigate any future erosion/settlement issues.

The phytoremediation system, which consists of about 2 acres of plants in a lined containment area, appeared to be healthy. Prior to construction of the KWTS, extracted perched groundwater was treated through irrigation of the plants. According to review of the documentation, analytical testing of the soil and plant material indicated no detections above the screening criteria for COCs. Currently, extracted perched groundwater is held in

a storage tank and treated at the KWTS, and the phytoremediation system typically receives irrigation from the tank approximately once a week to keep the plants healthy, or if the KWTS is shut down for maintenance. All SVE extraction wells associated with the on-site treatment system were observed to be in good condition.

The basal and perched remediation systems and current O&M activities and documentation appeared to be in order, and in compliance with the O&M manuals and Compliance Monitoring Plan. Perched and basal aquifer monitoring wells are sampled quarterly. Perched wells are within the locked fence around the source area. Basal wells are locked within steel monuments.

6.9 Interviews

As part of the five-year review process, technical interviews were conducted with personnel having knowledge of and/or concerns with the Del Monte Corporation (Oahu Plantation) Superfund Site. Interviews were conducted with the Golder Associates project manager, the Second City Property Management O&M supervisor, and the HDOH representative. Detailed interview discussions are provided in the completed interview forms provided in Appendix G.

Jeff Cotter from CH2M HILL conducted an interview with Gary Zimmerman (Golder Associates) on January 27, 2010 as a part of the site inspection and technical review being conducted for the Del Monte five-year review report. Mr. Zimmerman indicated that his overall impression of the Site and the treatment systems is that they are functioning as designed and intended. According to Mr. Zimmerman, monitoring data indicate that the perched groundwater extraction and treatment system has significantly decreased EDB, DBCP, and 1,2-DCP concentrations at the base of the perched aquifer, and that concentrations of COCs in the basal aquifer have remained consistent for over 5 years. He indicated that the SVE system, while functioning as designed, is not able to treat the most contaminated portions of the perched aquifer that remain saturated at the very base of the aquifer and just below the reach of the extraction pumps. Mr. Zimmerman indicated that the remedial action objectives and performance criteria specified in the 2003 ROD will need to be re-evaluated and likely revised. According to Mr. Zimmerman, the performance criteria for the perched aquifer are also unobtainable, since Golder believes that the perched source zone is no longer contributing COCs greater than Hawaii MCLs to the basal aquifer. The issue of background concentrations of COCs in the basal aquifer will need to be carefully evaluated in the near future to establish more attainable performance criteria.

An interview was conducted with Shane Lee (Second City Property Management) on January 27, 2010 as part of the site inspection and technical review being conducted for this Del Monte five-year review report. Mr. Lee is the O&M supervisor at the Del Monte Site and said that his overall impression of the Site and the treatment systems is that they are functioning well with few problems or shutdowns.

An interview was also conducted with Eric Sadoyama of HDOH on January 27, 2010. Mr. Sadoyama has been involved with the Del Monte Site since 2002 as the HDOH point of contact for the project. He indicated that overall the project is well run and making good progress.

7.0 Technical Assessment

This section evaluates the functioning of the remedy as intended, the current status of assumptions, and new information affecting the remedy at the Del Monte Superfund Site.

7.1 Question A: Is the Remedy Functioning as Intended by the Decision Documents?

Yes. All remedial actions pertaining to soil and groundwater, as mandated in the 2003 ROD, have been implemented.

Based on the site inspection, as well as data and document reviews, it appears that the basal and perched aquifer remedies, including an institutional controls component, are currently functioning as intended by the ROD, although RAOs have not yet been achieved.

7.1.1 Remedial Action Performance and Operations and Maintenance

The remedy for the perched aquifer consists of groundwater extraction and treatment as well as a vegetated cover and stormwater controls to effect perched groundwater source control and inhibit infiltration of perched groundwater to the basal aquifer. This is augmented with SVE to address deeper soil contamination. There is also an institutional controls component to restrict land use in order to prevent damage to the vegetated cover, or cap. Perched groundwater is being treated at both the KWTS and the phytoremediation system. Soil vapor is treated with carbon and discharged to the air. Perched aquifer monitoring data indicate that the perched groundwater plume has been contained and COC concentrations have decreased substantially since 2003. The SVE portion of the perched aquifer remedial action has not been operated long enough for a complete evaluation at this time.

The remedy for the basal aquifer consists of basal groundwater extraction and treatment from the Kunia well to effect plume capture and source control. Basal aquifer monitoring data indicate that COC concentrations have decreased in the Kunia well and the source area is effectively contained. COC concentrations in downgradient monitoring wells remain stable and consistent. Due to the presence of background concentrations of COCs in basal groundwater above Hawaii MCLs, it does not currently appear that reducing basal groundwater COC concentrations to less than Hawaii MCLs, as indicated in the 2003 ROD, is feasible.

The perched and basal groundwater monitoring and SVE well network, KWTS, and SVE system continue to be monitored monthly and quarterly, and reports are prepared on a quarterly basis.

7.1.2 Opportunities for Optimization

Operation of the perched aquifer extraction wells and SVE system are currently being optimized by daily, weekly, and monthly measurements. Perched groundwater extraction

rates have improved with the installation of automatic pneumatic pumps, which has resulted in increased source control and dewatering of the perched aquifer.

The basal groundwater monitoring program is being optimized by using point source bailers, which give very consistent analytical results and eliminate problems with submersible pumps and transport and disposal of purged groundwater.

7.2 Question B: Are the Exposure Assumptions, Toxicity Data, Cleanup Levels and Remedial Action Objectives Used at the Time of the Remedy Selection Still Valid?

Yes. A review of the existing ARARs indicates that there have been no significant changes or updates that would impact the protectiveness of the remedy. Review of chemical-specific and action-specific ARARs did not identify any changes to ARARs identified in the 2003 ROD that could potentially impact the protectiveness of the remedial actions. No location-specific ARARs were identified in the 2003 ROD. Since no significant changes to ARARs were identified during this review, their status remains unchanged.

An additional exposure pathway that was not addressed in the Baseline Risk Assessment is VOC vapors migrating from impacted soil or groundwater to indoor air inside buildings. Target groundwater concentrations were developed and screening levels were calculated using a target risk of 1×10^{-6} for chemicals with carcinogenic health effects and a target hazard quotient of 1 for chemicals with non-carcinogenic health effects. The Hawaii MCLs are lower than the vapor intrusion screening levels for three of the four COCs (EDB, DBCP, and 1,2,3-TCP), but for 1,2-DCP, the vapor intrusion screening level is less than the MCL. To determine the protectiveness of the MCL for 1,2-DCP for the vapor intrusion pathway, the risk of exposure through inhalation of vapors from 1,2-DCP in groundwater was computed. It was determined that cleaning up the groundwater to Hawaii MCLs will be protective of potential future residents exposed to COCs in groundwater through vapor intrusion.

There have been a number of changes to the toxicity values for specific COCs in soil and groundwater at the Del Monte Site since the ROD was completed in 2003. However, these changes have not affected the RAOs as the RAOs were based on chemical-specific ARARs (i.e., Hawaii MCLs), which are set at conservative levels at which no known or anticipated adverse health effects are expected to occur.

The RAOs incorporated Hawaii MCLs as the cleanup levels in the basal aquifer for groundwater contamination at the Del Monte Site. The Hawaii MCLs for the COCs have not changed since the ROD was issued so the cleanup levels are current.

The qualitative screening ecological risk assessment concluded that there were no realistic exposure pathways for ecological receptors and no unacceptable risk. Because Site conditions have not changed since completion of the Baseline Risk Assessment, the conclusion that there are no exposure pathways for ecological receptors is still valid, and no unacceptable risk is attributable to the KVSA.

The remedial actions at the Del Monte Site are currently protective of human health and the environment based on a review of current Site conditions, exposure pathways, and toxicity

values. In general, potential sources of exposure that could result in unacceptable risks are being controlled.

7.3 Question C: Has Any Other Information Come to Light that Could Call into Question the Protectiveness of the Remedy?

No. Although groundwater data collected post-ROD indicate that RAOs are likely unachievable due to the presence of background COC concentrations, the remedy remains protective since there is no exposure to untreated groundwater from the perched or basal aquifer at the Site.

7.4 Technical Assessment Summary

Based on the data and documents reviewed, site inspections, and the interviews, the remedy for the Del Monte Site is functioning as intended by the ROD. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy, no changes to the ARARs have been identified that would affect the protectiveness of the remedy, and the minor changes in toxicity factors for the COCs do not impact the RAOs or the protectiveness of the remedy since the remedy is based on State of Hawaii MCLs.

8.0 Issues

Issues identified during the five-year review process for the Del Monte Site are presented in Table 8-1 below.

TABLE 8-1
 Issues Identified During Five-Year Review Process
Del Monte Corporation (Oahu Plantation) Superfund Site, Kunia, Hawaii

Issue	Currently Affects Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
Due to the presence of background concentrations of COCs (EDB, DBCP, and 1,2,3-TCP) in basal groundwater above Hawaii MCLs, it does not currently appear feasible that phased extraction (pump and treat) of basal groundwater in the Kunia Village Source Area (KVSA) will eliminate the source of COCs and reduce basal groundwater COC concentrations to less than Hawaii MCLs.	N	N

9.0 Recommendations and Follow-Up Actions

Recommendations and follow-up actions for the Del Monte Site are presented in Table 9-1.

TABLE 9-1
 Recommendations and Follow-Up Actions
Del Monte Corporation (Oahu Plantation) Superfund Site, Kunia, Hawaii

Issue	Recommendations / Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
					Current	Future
Existence of Background COC Concentrations	Review the necessity of re-evaluating the remedial action objectives for the basal aquifer remedy	Del Monte Fresh Produce (Hawaii) Inc.	State of Hawaii/ EPA	06/15/2015	N	N

10.0 Protectiveness Statement

The remedy for the Del Monte Superfund Site is protective of human health and the environment because there is no exposure to untreated perched or basal aquifer groundwater. Furthermore, the Hawaii Department of Health prohibits any use of the basal groundwater, even for irrigation, without treatment, unless the groundwater meets State of Hawaii MCLs.

11.0 Next Review

The next comprehensive five-year review for the Del Monte Site will be completed during or before June 2015.

12.0 References

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Appendix A
Documents Reviewed

APPENDIX A

Documents Reviewed

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Appendix B
ARARs Review Memorandum

Del Monte Corporation (Oahu Plantation) Superfund Site, 5-Year Review

Applicable or Relevant and Appropriate Requirements (ARARs) Evaluation

PREPARED FOR: United States Environmental Protection Agency, Region IX

PREPARED BY: CH2M HILL

DATE: February 25, 2010

This technical memorandum presents an evaluation of the Applicable or Relevant and Appropriate Requirements (ARARs) at the Del Monte Corporation (Oahu Plantation) Superfund Site.

ARARs Background

Section 121(d) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires that remedial actions implemented at CERCLA sites attain any Federal or more stringent State environmental standards, requirements, criteria, or limitations that are determined to be ARARs.

Applicable requirements are those cleanup standards, criteria, or limitations promulgated under Federal or State law that specifically address the situation at a CERCLA site. A requirement is applicable if the jurisdictional prerequisites of the environmental standard show a direct correspondence when objectively compared with the conditions at the Oahu Plantation Superfund Site.

If a requirement is not legally applicable, the requirement is evaluated to determine whether it is relevant and appropriate. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that, while not applicable, address problems or situations sufficiently similar to the circumstances of the response actions and are well-suited to the conditions of the site. The criteria for determining relevance and appropriateness are listed in 40 CFR 300.400(g)(2).

Pursuant to U.S. Environmental Protection Agency (EPA) guidance, ARARs are classified into three categories: chemical-specific, location-specific, and action-specific requirements, defined below:

- **Chemical-specific ARARs** include those laws and requirements that regulate the release to the environment of materials possessing certain chemical or physical characteristics or containing specified chemical compounds. These requirements generally set health- or risk-based concentration limits or discharge limitations for specific hazardous

substances. If, in a specific situation, a chemical is subject to more than one discharge or exposure limit, the more stringent of the requirements should generally be applied.

- **Location-specific ARARs** are those requirements that relate to the geographical or physical position of the site, rather than the nature of the contaminants or the proposed remedial actions. These requirements may limit the placement of remedial action, and may impose additional constraints on the cleanup action. For example, location-specific ARARs may refer to activities in the vicinity of wetlands, endangered species habitat, or areas of historical or cultural significance.
- **Action-specific ARARs** are requirements that apply to specific actions that may be associated with remediation. Action-specific ARARs often define acceptable handling, treatment, and disposal procedures for hazardous substances. These requirements are triggered by the particular remedial activities that are selected to accomplish a remedy. Examples of action-specific ARARs include requirements applicable to landfill closure, wastewater discharge, hazardous waste disposal, and emissions of air pollutants.

To-be-considered (TBC) criteria are requirements that may not meet the definition of an ARAR as described above but still may be useful in determining whether to take action at a site or to what degree action is necessary. TBC criteria are defined in 40 CFR 300.400(g)(3). Chemical-specific TBC requirements are applied in the absence of ARARs or when the existing ARARs are not sufficiently protective to develop cleanup levels. TBC documents are non-promulgated advisories or guidance issued by Federal or State government that are not legally binding but that may provide useful information or recommended procedures for remedial action. Although TBC criteria do not have the status of ARARs, they are considered together with ARARs to establish the required level of cleanup for protection of human health or the environment. The critical difference between a TBC and an ARAR is that one is not required to comply with or meet a TBC when deciding on a remedial action.

Del Monte Site Background

The ARARs for the Del Monte Site were presented in the *Record of Decision (ROD), Del Monte Corporation (Oahu Plantation) Superfund Site* (EPA, 2003).

The purpose of this regulatory review is to determine if regulations promulgated since the issuance of the 2003 ROD may now impact the protectiveness of the remedy on human health and the environment. In the preamble to the final National Contingency Plan, EPA states that it will not reopen remedy selection decisions contained in RODs (i.e., ARARs are normally frozen at the time of ROD signature) unless a new or modified requirement calls into question the protectiveness of the selected remedy (55 FR 8757, March 8, 1990).

Chemical-specific ARARs identified in the ROD are summarized in Table 1, and action-specific ARARs identified in the ROD are summarized in Table 2. No location-specific ARARs were identified in the 2003 ROD.

The current versions of the Hawaii Administrative Regulations (HAR) and the Code of Federal Regulations (CFR) were consulted via the internet for pertinent updates.

Del Monte ARARs Review

Review of Chemical-Specific ARARs

A summary of chemical-specific ARARs and TBCs is provided in Table 1. The specific regulations cited for each ARAR contained in Table 1 were reviewed for changes since the 2003 ROD was issued. The “Current Status” column presents the results of the review. State of Hawaii Maximum Contaminant Levels (MCLs) were determined to be cleanup levels for the basal aquifer, because they are more stringent than federal MCLs for the chemicals of concern. Due to an oversight, state MCLs were not included in the ARARs table presented in the 2003 ROD (Table 15), but were presented as ARARs in Section 12.1.1 of the ROD.

Review of Action-Specific ARARs

A summary of the action-specific ARARs is provided in Table 2. The specific regulations cited for each ARAR contained in Table 2 were reviewed for changes since the 2003 ROD was issued. The “Current Status” column presents the results of the review.

Summary of Changes to Existing ARARs

The review did not identify any changes to ARARs identified in the ROD that could potentially impact the protectiveness of the remedial actions. Since no significant changes to ARARs were identified during this review, their status remains unchanged.

References

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TABLE 1
 Chemical-Specific^a ARARs for Selected Remedy

Requirement	Citation ^b	ARAR Determination	Comments	Current Status
PERCHED AQUIFER – FEDERAL				
Safe Drinking Water Act (42 U.S.C., ch. 6A, § 300[f]–300[j]-26)				
National primary drinking water standards are health-based standards (MCLs) for public water systems.	40 CFR § 141.61(a)	Not an ARAR	The NCP defines MCLs as relevant and appropriate for groundwater determined to be a current or potential source of drinking water, in cases where MCLGs are not ARARs. The Kunia Village perched aquifer is considered a Class III aquifer (not a potential source of drinking water) because of insufficient quantity and drinking water standards are not relevant or appropriate.	Status has not changed since issuance of the 2003 ROD.
Resource Conservation and Recovery Act (42 U.S.C., ch. 82, §§ 6901–6991[I])				
Defines RCRA hazardous waste. A solid waste is characterized as toxic if the waste exceeds the TCLP maximum concentrations. A solid waste can also be a hazardous waste if it contains a listed hazardous waste.	HAR Title 11 261-22(1)(3)(4), 261-24(a)(2)-(a)(8), 261-101, 261-3(a)(2)(C) or (F) 262-10, 262-11, 264-178, 264-197, 264-258, 264-288	Applicable	Applicable for determining whether either soil cuttings from well drilling or extracted groundwater is hazardous. The extracted groundwater will likely contain a listed waste and be considered hazardous under the “contained in” policy. Soil may also be hazardous waste under the “contained in” policy if it contains a listed waste or if it exceeds the criteria for characteristic hazardous waste.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
PERCHED AQUIFER – STATE				
(No chemical-specific State ARARs have been identified for the perched aquifer)				
BASAL AQUIFER – FEDERAL				
Safe Drinking Water Act (42 U.S.C., ch. 6A, § 300[f]–300[j]-26)^c				
National primary drinking water standards are health-based standards (MCLs) for public water systems.	40 CFR § 141.61(a)	Relevant and Appropriate	The NCP defines MCLs as relevant and appropriate for groundwater determined to be a current or potential source of drinking water, in cases where MCLGs are not ARARs. MCLs are relevant and appropriate for Class II aquifers such as the Ewa-Kunia Aquifer System at the Site.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.

TABLE 1
 Chemical-Specific^a ARARs for Selected Remedy

Requirement	Citation ^b	ARAR Determination	Comments	Current Status
Resource Conservation and Recovery Act (42 U.S.C., ch. 82, §§ 6901–6991[i])				
Defines RCRA hazardous waste. A solid waste is characterized as toxic if the waste exceeds the TCLP maximum concentrations. A solid waste can also be a hazardous waste if it is “listed” or if it contains a listed hazardous waste.	See the specific citations above in the Perched Aquifer part of the table.	Applicable	Applicable for determining whether soil cuttings from well drilling or extracted groundwater is hazardous. If the extracted groundwater contains Site COCs (which are listed wastes) in excess of MCLs, it will be considered hazardous under the “contained in” policy. Soil may also be hazardous waste under the “contained in” policy if it contains a listed waste or if it exceeds the criteria for characteristic hazardous waste.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Groundwater protection standards: Owners/operators of RCRA treatment, storage, or disposal facilities must comply with conditions in this chapter that are designed to ensure that hazardous constituents entering the groundwater from a regulated unit do not exceed specified concentration limits in the uppermost aquifer underlying the waste management area of concern.	HAR Title 11 264-94, except 264-94(a)(2) and 264-94(b)	Relevant and appropriate	Applicable for hazardous waste TSD facilities; potentially relevant and appropriate in site-specific circumstances, such as when a listed waste has been released. The Del Monte Site is not a TSD facility. However, because the waste in the groundwater is a listed waste, this requirement is determined to be relevant and appropriate.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
BASAL AQUIFER - STATE				
Hawaii drinking water maximum contaminant levels (MCLs) are health-based standards for public water systems. ^d	HAR 11-20-4, maximum contaminant levels for organic chemicals	Relevant and appropriate	The NCP defines MCLs as relevant and appropriate for groundwater determined to be a current or potential source of drinking water, in cases where MCLGs are not ARARs. MCLs are relevant and appropriate for Class II aquifers such as the Waiawa-Waipahu and Ewa-Kunia Aquifer Systems at the Site. State MCLs are ARARs when they are more stringent than federal requirements.	State MCLs for ethylene dibromide (EDB), 1,2-dibromo-3-chloropropane (DBCP), and 1,2,3-trichloropropane (TCP) were identified as ARARs in the 2003 ROD. Status remains unchanged.

TABLE 1
 Chemical-Specific^a ARARs for Selected Remedy

Requirement	Citation ^b	ARAR Determination	Comments	Current Status
AIR – STATE				
Hawaii Air Pollution Control Standards: Address discharge of air pollution including visible emissions, fugitive dust, incineration, process industries, sulfur oxides from fuel combustion, storage of VOCs, VOC separation from water, and waste gas disposal.	HAR Title 11, Chapter 60	Applicable	The regulation requires permits for point sources and treatment systems that exceed 0.1 ton per year of each hazardous air pollutant. The substantive provisions of these regulations will be applicable for any action that includes air discharges exceeding this threshold. At this stage, it does not appear likely that either the air stripper (basal aquifer) or the SVE treatment unit (perched aquifer) will have discharges approaching the 0.1 ton per year threshold	HAR 11-60.1 was revised on April 7, 2004 to add EDB and DBCP to the list of hazardous air pollutants (HAPs). HAR 11-60.1-174 requires sources of HAP emissions to comply with the requirements of 40 CFR Part 63. 40 CFR Part 63, Subpart GGGGG, applies to the site remediation source category. However, CERCLA actions are specifically exempt from these provisions. Therefore, the status of the State air pollution control standards remains unchanged.

Notes:

- ^a Many action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARARs tables (Table 16 of the 2003 ROD).
- ^b Only the substantive provisions of the requirements cited in this table are ARARs.
- ^c Statutes and policies, and their citations, are provided as headings to identify general categories of ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the entire statutes or policies are ARARs; specific ARARs are addressed in the table below each general heading; only pertinent substantive requirements of the specific citations are considered ARARs.
- ^d Due to an oversight, state MCLs were not included in the ARARs table presented in the 2003 ROD (Table 15), but were presented as ARARs in Section 12.1.1.

Acronyms/Abbreviations:

ARAR – applicable or relevant and appropriate requirement
 CFR. – *Code of Federal Regulations*
 ch. – chapter
 COCs – contaminants of concern
 HAR – Hawaii Administrative Rules
 MCL – maximum contaminant level
 MCLG – maximum contaminant level goal
 NCP – National Oil and Hazardous Substances Pollution Contingency Plan

RCRA – Resource Conservation and Recovery Act
 § – section
 SVE – soil vapor extraction
 TCLP – toxicity characteristic leaching procedure
 TSD – treatment, storage, and disposal
 VOCs – volatile organic compounds
 U.S.C. – United States Code

TABLE 2
 Action-Specific ARARs^a for Selected Remedy

Action/Requirement	Citation ^b	ARAR Determination	Comments	Current Status
PERCHED AQUIFER – FEDERAL				
Resource Conservation and Recovery Act (42 U.S.C. §§ 6901–6991[i])^c				
On-site waste generation/Person who generates waste shall determine if that waste is a hazardous waste.	HAR Title 11 262-10(a), 262-11	Applicable	Applicable for any operation where waste is generated. The determination of whether wastes generated during remedial activities, such as soil cuttings from well installation and treatment residues, are hazardous will be made when the wastes are generated.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
On-site waste generation/Requirements for analyzing waste to determine whether waste is hazardous.	HAR Title 11 264-13(a) and (b)	Applicable	Applicable for any operation where waste is generated. The determination of whether wastes generated during remedial activities are hazardous will be made when the wastes are generated.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Hazardous waste accumulation/On-site hazardous waste accumulation is allowed for up to 90 days as long as the waste is stored in containers or tanks, on drip pads, inside buildings, is labeled and dated, etc.	HAR Title 11 262-34	Applicable	Applicable for any operation where hazardous waste is generated and transported. The determination of whether wastes generated during remedial action activities are hazardous will be made at the time the wastes are generated.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Hazardous waste accumulation/Containers of RCRA hazardous waste must be: <ul style="list-style-type: none"> • Maintained in good condition, • Compatible with hazardous waste to be stored, and • Closed during storage except to add or remove waste. 	HAR Title 11 264-171, 264-172, and 264-173	Applicable	Substantive provisions are applicable if waste is determined to be RCRA hazardous waste.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Hazardous waste accumulation/Inspect container storage areas weekly for deterioration.	HAR Title 11 264-174	Applicable	Substantive provisions are applicable if waste is determined to be RCRA hazardous waste.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.

TABLE 2
 Action-Specific ARARs^a for Selected Remedy

Action/Requirement	Citation ^b	ARAR Determination	Comments	Current Status
Hazardous waste accumulation/Place containers on a sloped, crack-free base, and protect from contact with accumulated liquid. Provide containment system with a capacity of 10 percent of the volume of containers of free liquids. Remove spilled or leaked waste in a timely manner.	HAR Title 11 264-175(a) and (b)	Applicable	Substantive provisions are applicable if waste is determined to be RCRA hazardous.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Site closure/At closure, remove all hazardous waste and residues from the containment system, and decontaminate or remove all containers and liners.	HAR Title 11 264-178	Applicable	Substantive provisions are applicable if waste is determined to be RCRA hazardous.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Use of tanks or piping/Requirements for secondary containment of tank systems and ancillary equipment.	HAR Title 11 264-193(b), (c), (d), (e), and (f)	Applicable	Substantive provisions are applicable for phytoremediation treatment unit and associated transfer piping.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Use of tanks or piping/Design requirements for a tank system.	HAR Title 11 264-192	Applicable	Substantive provisions are applicable for phytoremediation treatment unit and associated transfer piping.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Use of tanks or piping/Upon closure of tank system, minimize the maintenance and remove or decontaminate all contaminated equipment and materials to the extent necessary to protect human health and the environment.	HAR Title 11 264-197(a)	Applicable	Substantive provisions are applicable for phytoremediation treatment unit and associated transfer piping.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Miscellaneous treatment units/Design requirements for miscellaneous treatment units.	HAR Title 11 264-600	Applicable	Substantive provisions are applicable for phytoremediation treatment unit.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Monitoring/Requirement for identifying chemicals of concern.	HAR Title 11 264-93	Relevant and Appropriate	Substantive provisions are relevant and appropriate requirements for identifying groundwater-monitoring COCs. Not applicable because Del Monte Site is not a regulated unit.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.

TABLE 2
 Action-Specific ARARs^a for Selected Remedy

Action/Requirement	Citation ^b	ARAR Determination	Comments	Current Status
Monitoring/Requirements for monitoring groundwater.	HAR Title 11 264-97(b), (d), and (e)(2)–(5)	Relevant and Appropriate	Substantive provisions are relevant and appropriate requirements for groundwater monitoring. Not applicable because Del Monte Site is not a regulated unit.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Monitoring/Requirements for an evaluation monitoring program.	HAR Title 11 264-99(b), (c), (e), (f), and (g)	Relevant and Appropriate	Substantive provisions are relevant and appropriate requirements for groundwater monitoring. Not applicable because Del Monte Site is not a regulated unit.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Corrective action/The owner or operator required to take corrective action to remediate releases from the regulated unit and to ensure that the regulated unit achieves compliance with the water quality protection standard.	HAR Title 11 264-100(b)	Relevant and Appropriate	Substantive provisions are relevant and appropriate requirements for groundwater monitoring and corrective action for the release. Not applicable because Del Monte Site is not a regulated unit.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Corrective action/The owner or operator shall implement corrective action measures that ensure COCs achieve their respective concentration limits at all monitoring points and throughout the zone affected by the release, including any portions of the affected zone that extend beyond the facility boundary, by removing the waste constituents or treating them in place. The owner or operator shall take other action to prevent noncompliance due to a continued or subsequent release including, but not limited to, source control.	HAR Title 11 264-100(c)	Relevant and Appropriate	Substantive provisions are relevant and appropriate requirements for groundwater monitoring and corrective action. Not applicable because Del Monte Site is not a regulated unit.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Monitoring/The owner or operator shall establish and implement, in conjunction with the corrective action measures, a water quality monitoring program that will demonstrate the effectiveness of the corrective action program, effectively determine compliance with the water quality protection standard, and determine the success of the corrective-action measures under subsection (c) of this section.	HAR Title 11 264-100(d)	Relevant and Appropriate	Substantive provisions are relevant and appropriate requirements for groundwater monitoring. Not applicable because Del Monte Site is not a regulated unit.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.

TABLE 2
 Action-Specific ARARs^a for Selected Remedy

Action/Requirement	Citation ^b	ARAR Determination	Comments	Current Status
Completion of response action/Completion of the corrective action program must be demonstrated to be in compliance with the water quality protection standard based on the results of sampling and analysis for all chemicals of concern for 1 year.	HAR Title 11 264-100(g)(1) and (3)	Relevant and Appropriate	Substantive provisions are relevant and appropriate requirements for groundwater monitoring. Not applicable because Del Monte Site is not a regulated unit.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Hazardous waste must be labeled in accordance with DOT regulations before transport.	HAR Title 11 262-31	Applicable	Applicable for any operation where hazardous waste is generated on-site and transported. The determination of whether wastes generated during remedial activities are hazardous will be made when the wastes are generated.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Provides requirements for marking hazardous waste before transport.	HAR Title 11 262-32	Applicable	Applicable for any operation where hazardous waste is generated on-site and transported. The determination of whether wastes generated during remedial activities are hazardous will be made when the wastes are generated.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
A generator must assure that the transport vehicle is correctly placarded before transport of hazardous waste.	HAR Title 11 262-33	Applicable	Applicable for any operation where hazardous waste is generated on-site and transported. The determination of whether wastes generated during remedial activities are hazardous will be made when the wastes are generated.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.

PERCHED AQUIFER – STATE

(No action-specific State ARARs have been identified for the perched aquifer)

BASAL AQUIFER – FEDERAL

Resource Conservation and Recovery Act (42 U.S.C. §§ 6901–6991[i])^c

All of the ARARs cited above for the perched aquifer also apply to the basal aquifer. The phytoremediation treatment unit referenced for the perched aquifer, becomes the groundwater treatment unit for the basal aquifer.

TABLE 2
 Action-Specific ARARs^a for Selected Remedy

Action/Requirement	Citation ^b	ARAR Determination	Comments	Current Status
Underground Injection Control Program (40 CFR Part 144)				
Underground Injection Control regulations and permitting requirements for five general classes of injection wells.	40 CFR Part 144	Applicable (if injection wells used)	Applicable if groundwater injection wells used for recharge of treated groundwater. This is not currently planned, but may be considered if the volume of basal aquifer extraction exceeds Del Monte's water rights. The injection wells would be considered Class V injection wells.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)				
Pesticide use/Requirements for a buffer zone around water wells.	FIFRA § 3 and 40 CFR Part 152 Subparts C and D	Applicable	Places restrictions on pesticide formulations containing 1,3-dichloropropene (including Telone II®, which is used on the Oahu plantation), that stipulate such formulations cannot be used within 100 feet of a water well. Will require establishment of a buffer zone around any monitoring, extraction or injection wells installed in or near pineapple fields.	Requirements have not changed since issuance of the 2003 ROD. Status remains unchanged.
BASAL AQUIFER – STATE				
(No action-specific State ARARs have been identified for the basal aquifer)				

- Notes:**
- ^a Many action-specific ARARs contain chemical-specific limitations and are addressed in this action-specific ARAR table.
 - ^b Only the substantive provisions of the requirements cited in this table are ARARs.
 - ^c Statutes and policies, and their citations, are provided as headings to identify general categories of ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the entire statutes or policies are ARARs; specific ARARs are addressed in the table below each general heading; only pertinent substantive requirements of the specific citations are considered ARARs.

Acronyms/Abbreviations:

ARAR – applicable or relevant and appropriate requirement
 CFR – Code of Federal Regulations
 COCs – contaminants of concern
 DOT – Department of Transportation
 FIFRA – Federal Insecticide, Fungicide, and Rodenticide Act

HAR – Hawaii Administrative Rules
 RCRA – Resource Conservation and Recovery Act
 § – section
 U.S.C. – United States Code

Appendix C
Human Health, Toxicology and Ecological
Risk Analysis Memorandum

Del Monte Corporation Oahu Plantation Superfund Site 5-Year Review: Risk Assessment and Toxicology Analysis

PREPARED FOR: United States Environmental Protection Agency, Region IX
PREPARED BY: CH2M HILL
DATE: February 25, 2010

This technical memorandum presents a risk assessment and toxicology analysis to support the five-year review of the Del Monte Corporation (Oahu Plantation) Superfund Site (Del Monte Site) in Kunia, Hawaii on the Island of Oahu. The Record of Decision (ROD) selecting the remedy for the Del Monte site was issued by the U.S. Environmental Protection Agency (EPA) in September 2003, and active remediation of contaminated basal groundwater was initiated by Del Monte in September 2005.

As described in the guidance for EPA's Comprehensive Five-Year Reviews (EPA, 2001), a key purpose of the five-year review process for a site is to determine if the remedy is, or upon completion will be, protective of human health and the environment. Protectiveness is generally defined in the National Contingency Plan (NCP) by the risk range and the Hazard Index (HI).

The following three questions are part of the technical assessment of the protectiveness of the remedy, as outlined in the EPA five-year review guidance document:

- Question A - Is the remedy functioning as intended by the decision documents?
- Question B - Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?
- Question C - Has any other information come to light that could call into question the protectiveness of the remedy?

To determine whether the remedy at the Del Monte site remains protective of human health, the sections below evaluate changes in site conditions, changes in exposure pathways, changes in toxicity values, and changes in cleanup levels since completion of the Baseline Risk Assessment (BRA) and selection of the Site remedy. A section evaluating the findings from the qualitative ecological screening assessment presented in the BRA is also included. The BRA prepared by Golder and Associates and GlobalTox (1999) was reviewed as part of these evaluations.

Changes in Site Conditions

The Del Monte Site is part of a 6,000-acre pineapple plantation that was operated by Del Monte Fresh Produce (Hawaii), Inc. under lease from the Estate of James Campbell (Campbell Estate), the landowner. The plantation was used for cultivation of pineapple

from 1946 through November 2006 (LFR, 2009). During that time, soil fumigants were stored and mixed onsite, and applied to the soil to kill nematodes (worms that attack pineapple roots). In April 1997, an accidental spill involving about 495 gallons of the soil fumigant ethylene dibromide (EDB) occurred on bare ground near the Kunia Well, which supplied domestic water to nearby Kunia Village, as well as irrigation water for the plantation. As a result of the fumigant spill, and storage and mixing activities, chemicals in these fumigants have contaminated both shallow (perched) and deeper (basal) groundwater beneath the site. The chemicals of potential concern (COPCs) identified in the BRA include EDB, 1,2-dibromo-3-chloropropane (DBCP), 1,2-dichloropropane (DCP), and 1,2,3-trichloropropane (TCP).

In early 2008, Del Monte ceased operation of the Oahu Plantation and closed all associated plantation facilities, with the exception of the perched and basal groundwater remediation systems, which are currently operated and maintained by Del Monte contractors. Following the closure of the plantation, James Campbell Company (JCC), the successor to the Campbell Estate, initiated the sale of parcels of the former plantation lands to various entities. In 2008 and 2009, parcels of the former plantation were sold to the U.S. Army, for redevelopment as housing for Schofield Army Barracks; to Syngenta Hawaii LLC; to Hawaii Agricultural Research Center; and to Kunia Agricultural Park (LFR, 2009). With the conveyance of parcels, institutional controls remain in place to assure that the remedy will be maintained, as required by the Consent Decree between JCC and EPA (EPA, 2007).

The ROD (EPA, 2003) lists two components of remedial action to be implemented at the Site: 1) perched groundwater extraction, soil vapor extraction and installation of a vegetative soil cap over the contaminated soil in the Source Area; and 2) basal groundwater extraction and treatment with a contingency for natural attenuation. Institutional controls in the form of land and/or water use restrictions are an integral part of each of these components of the remedial action in order to prevent any exposure of the public to contaminants at the Site while cleanup levels have not been achieved, as well as to prevent interference with any aspect of the remedial action.

Changes in Exposure Pathways

The human health exposure pathways evaluated in the 1999 BRA (Golder and GlobalTox, 1999) include:

- Ambient air inhalation in residential and occupational settings from volatilization of COPCs from the former excavation pit water;
- Inhalation of COPCs in occupational settings from the direct use of the Hawaii Country Club (HCC) well water for golf course irrigation without physical treatment;
- Inhalation of and dermal contact with COPCs in occupational settings from the direct use of the Kunia Well water for agricultural irrigation without physical treatment; and,
- Hypothetical future residential exposure through ingestion, dermal contact, and/or inhalation of COPCs from the residential use of impacted groundwater without physical treatment.

Because the excavation pit has been filled in, there is no longer the potential for exposure to contaminated surface water in the Kunia Village Area, eliminating the first bullet as a pathway. The other pathways that were evaluated are still appropriate.

An additional potential pathway that was not addressed in the BRA is volatile organic compound (VOC) vapors migrating from impacted soil or groundwater to indoor air inside buildings. EPA’s draft Vapor Intrusion Screening Guidance issued in November 2002 states that the vapor intrusion pathway should be investigated if COPCs exceed the vapor intrusion screening levels in shallow groundwater. Target groundwater concentrations were developed that correspond to target indoor air concentrations where the soil gas to indoor air attenuation factor is 0.001 and partitioning across the water table obeys Henry’s Law as described in the Vapor Intrusion Screening Guidance. Target indoor air concentrations were based on an adult residential exposure scenario and assume exposure of an individual for 350 days per year over a period of 30 years. Screening levels were calculated using a target risk of 1×10^{-6} for chemicals with carcinogenic health effects and a target hazard quotient of 1 for chemicals with noncarcinogenic health effects. Table 1 provides the vapor intrusion screening levels and the Hawaii State Maximum Contaminant Levels (MCLs) for the COPCs at the Site. The MCLs are lower than the vapor intrusion screening levels for three of the four COPCs (EDB, DBCP, and TCP), but for DCP, the vapor intrusion screening level of 2 micrograms per liter ($\mu\text{g/L}$) is less than the MCL for that compound of 5 $\mu\text{g/L}$.

TABLE 1
Comparison Between Vapor Intrusion to Indoor Air Pathway Screening Levels and Hawaii MCLs

Chemical	Target Groundwater Concentration Corresponding to Target Indoor Air Concentration ($\mu\text{g/L}$) ^(a)	Hawaii State MCL ($\mu\text{g/L}$)
Ethylene dibromide (EDB)	0.15	0.04
1,2-Dibromo-3-chloropropane (DBCP)	0.07	0.04
1,2,3-Trichloropropane (TCP)	21	0.6
1,2-Dichloropropane (DCP)	2	5

Notes:

^(a) Target groundwater concentrations were derived using OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (EPA, 2002)
MCL = Maximum Contaminant Level

To determine the protectiveness of the MCL for DCP for the vapor intrusion pathway, site-specific conditions were entered into EPA’s screening level Groundwater Model (EPA, 2004) to compute the risk of exposure through inhalation of vapors from DCP in groundwater at 5 $\mu\text{g/L}$. The perched groundwater is approximately 25 to 75 feet below ground surface and the soil type is silt loam. Using a depth below grade to the water table of 25 feet and a soil type of silt loam, the model predicts an attenuation factor of 0.0001 and a risk of 1×10^{-7} , which is less than the 1×10^{-6} criterion for potentially unacceptable risk. Therefore, cleaning up the groundwater to MCLs will be protective of potential future residents exposed to COPCs in groundwater through vapor intrusion.

Changes in Toxicity Values

There have been a number of changes to the toxicity values for specific COPCs in soil and groundwater at the Del Monte Site since the ROD was completed in 2003. For example, revisions to the oral slope factor for EDB indicate a lower risk from exposure than previously considered; however, revisions to the inhalation slope factor for EDB increased, signifying a higher risk from exposure. Table 2 provides a direct comparison between the 1999 toxicity values, as specified in Tables 8 and 9 of the ROD, and current EPA Region 9 values. These changes have not affected the remedial action objectives (RAOs) as the RAOs were based on chemical-specific Applicable or Relevant Appropriate Requirements (i.e., Hawaii State MCLs), which are set at conservative levels, where no known or anticipated adverse health effects are expected to occur.

TABLE 2
Comparison Between 1999 Toxicity Values and Current Regional Screening Level (RSL) Values

Chemical	Inhalation Exposure					
	RfC (mg/m ³)			URF (µg/m ³)		
	Table 9 ^(a)	2009 RSL Table	Change in Toxicity	Table 8 ^(a)	2009 RSL Table	Change in Toxicity
Ethylene dibromide	0.0002	0.009	Less toxic	0.00022	0.0006	More toxic
1,2-Dibromo-3-chloropropane	0.00024	0.0002	Slightly more toxic	0.0000069	0.006	More toxic
1,2,3-Trichloropropane	0.006	0.0003	More toxic	0.002	NA	Less toxic
1,2-Dichloropropane	NA	0.004	More toxic	0.0000194	0.00001	Less toxic

Chemical	Ingestion Exposure					
	RfDo (mg/kg-day)			SFo (mg/kg-day) ⁻¹		
	Table 9 ^(a)	2009 RSL Table	Change in Toxicity	Table 8 ^(a)	2009 RSL Table	Change in Toxicity
Ethylene dibromide	0.000057	0.009	Less toxic	85	2	Less toxic
1,2-Dibromo-3-chloropropane	0.000057	0.0002	Less toxic	1.4	0.8	Less toxic
1,2,3-Trichloropropane	0.006	0.004	More toxic	7	30	More toxic
1,2-Dichloropropane	0.0011	0.09	Less toxic	0.068	0.036	Less toxic

Notes:

RfC = Reference Concentration

URF = Unit Risk Factor

RfDo = Oral Reference Dose

SFo = Oral Slope Factor

2009 RSL Table = EPA Regional Screening Levels Table (updated December 2009)

^(a) Tables 8 and 9 are from the 2003 Record of Decision - Del Monte Corporation Oahu Plantation Superfund Site (EPA, 2003)

Changes in Cleanup Levels

The RAOs incorporate Hawaii State MCLs as the cleanup levels in the basal aquifer for groundwater contamination at the Del Monte site. The Hawaii MCLs for the COPCs have not changed since the ROD was issued so the cleanup levels are current.

Ecological Screening Assessment

In the BRA (Golder and GlobalTox, 1999), ecological risks were evaluated qualitatively because very few shallow soil and sediment samples contained detectable concentrations of COPCs, and because contaminated perched groundwater typically occurs at depths of 50 to 80 feet below ground surface and does not discharge to surface water. Therefore, the qualitative screening assessment concluded that there are no realistic exposure pathways for ecological receptors and no unacceptable risk. Because site conditions have not changed since completion of the BRA, the conclusion that there are no exposure pathways for ecological receptors is still valid, and no unacceptable risk is attributable to the Kunia Village Area.

Conclusions

The remedial actions at the Del Monte site are currently protective of human health and the environment based on a review of current site conditions, exposure pathways, and toxicity values. In general, potential sources of exposure that could result in unacceptable risks are being controlled.

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Appendix D
Data Review Memorandum

Data Review Memorandum for the Del Monte Corporation (Oahu Plantation) Superfund Site, Kunia, Hawaii, 5-Year Review

PREPARED FOR: U.S. Environmental Protection Agency, Region IX
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This technical memorandum (TM) summarizes findings from a review of monitoring and remediation data for the Del Monte Corporation (Oahu Plantation) Superfund Site in Kunia, Hawaii (the Site), during the first 5-year review period. As described in the Record of Decision (ROD), the Environmental Protection Agency's (EPA's) selected remedy is divided into two parts: 1) remediation of the shallow groundwater (perched aquifer) and contaminated soil in the Kunia Village Area from approximately 20 feet below the ground surface (bgs) to 100 feet bgs, and 2) remediation of the deep groundwater (basal aquifer). EPA's goal is to prevent perched aquifer and deep soil contaminants further contaminating the basal aquifer, and to prevent future exposure to contaminated groundwater from the basal aquifer (EPA, 2003). In the ROD, EPA selected the following remedies for the Site:

1. Remediation of shallow groundwater and deep soil in the perched aquifer by pumping and treating contaminated groundwater using plants (phytoremediation), placing a vegetative soil cover over the perched aquifer source area to reduce rainfall infiltration, installing a soil vapor extraction (SVE) system to withdraw volatile chemicals from the deep soil, and restricting land use to prevent exposure to contaminated soil and groundwater (institutional controls).
2. Remediation of deep groundwater (basal aquifer) by pumping groundwater in a phased manner, starting with the Kunia well (source control), treating extracted groundwater to Hawaii maximum contaminant levels (MCLs), installation of monitoring wells to characterize the extent of the contamination in the source area and downgradient plume, monitoring the effectiveness of source control and monitored natural attenuation (MNA) in reducing contamination in the downgradient plume, and restricting land use to prevent exposure to contaminated basal groundwater (well restriction area).

These remedial actions are expected to be the only actions required to remediate impacted soil and groundwater. This TM evaluates data collected for the engineered portions of these remedies through the fourth quarter of 2009 (institutional controls are evaluated in Appendix E of the Five Year Report). The purpose of this review is to evaluate whether the remedies are effectively meeting the remedial action objectives (RAOs) established in the ROD, and remain protective of human health and the environment. This review considers the following:

- Performance of the perched aquifer remedy by reviewing groundwater extraction data and the effectiveness of the vegetative cap, groundwater constituent of concern (COC) trends, and SVE system data.
- Performance of basal aquifer remedy of source control by pumping in the Kunia well by reviewing COC trends in extracted groundwater from the Kunia pumping well and monitoring wells.

Background

The Del Monte Corporation Oahu Plantation was a 6,000-acre pineapple plantation operated by Del Monte. In 2006, Del Monte shut down pineapple operations and the land owner, James Campbell Co. LLC (JCC), initiated the sale of the former agricultural lands. The history of Del Monte activities and COC releases in the Kunia Village Area are detailed in previous documents generated during the Remedial Investigation (RI), Feasibility Study (FS), and subsequent remedial design and remedial action (RD/RA) work (Golder, 1998; 2003a; and 2009a). A sequence of events related to the site is summarized in Section 2.0 of the main text of the Five Year Review report.

Hydrogeologic Setting

The most extensive bodies of freshwater on Oahu occur as basal groundwater (Golder, 2009b). Basal groundwater occurs when fresh water percolates into the saturated zone and displaces the underlying seawater. The accumulating fresh water forms a lens-shaped body with a surface that extends above the surface of the salt water due to the contrast in densities between freshwater and seawater. The water table or potentiometric surface of a basal-water body is typically rather flat and no more than several feet to several tens of feet above sea level. The predominant volume of the freshwater body lies below sea level where it gradually transitions to higher chloride concentrations with increasing depth.

Two basal aquifers are present in the Kunia area. The Kunia Village Area is located above the Pearl Harbor Basal Water Body near the contact between the Ewa-Kunia and Waiawa-Waipahu Aquifer portions of the basal aquifer. The estimated location of the contact between the Koolau (Waiawa-Waipahu) and Waianae (Ewa-Kunia) basalts at the basal aquifer water table elevation (roughly about mean sea level) has generally been mapped as being slightly to the east of the Kunia Village; however, new information on basal water levels obtained during RD/RA activities indicate that the contact lies about 1,000 to 2,000 feet west of the Kunia well. The contact is comprised of a weathered zone and accumulations of alluvium, separating the lower, older Waianae lavas from the younger Koolau lavas. Hydraulic head drop across the contact is about 2 to 3 feet, with heads in the Koolau basalts being higher. Therefore, flow across the contact is always from the Koolau to the Waianae sections (Golder, 2009b). To date, no COCs have been detected in basal monitoring or production wells completed in the Ewa-Kunia (Waianae) aquifer sections.

Remedial Action Objectives

EPA's Remedial Action Objectives for the Del Monte Site are to (EPA, 2003):

- Prevent exposure of the public to contaminated groundwater above chemical-specific cleanup levels (described below);
- Inhibit further migration of the contaminant plume away from the Kunia Valley Source Area (KVSA) (source control);
- Limit discharge of Kunia Village Area perched groundwater and deep soil contaminants to basal groundwater such that basal groundwater concentrations do not exceed the chemical-specific cleanup goals described below (source control); and
- Restore basal groundwater to its beneficial use of drinking water supply within a reasonable time frame (aquifer restoration).

The current groundwater cleanup levels that apply to both on- and off-property groundwater remediation are described in the ROD (EPA, 2003). To meet RAOs, source control will be required in the Kunia Village basal aquifer source area as long as contaminant concentrations in groundwater exceed cleanup levels, and downgradient MNA will be required until the downgradient plume meets the cleanup levels. The RAOs for the Del Monte Site incorporate the following chemical-specific cleanup levels in the basal aquifer, based on Hawaii MCLs, which are more stringent than Federal MCLs:

- Ethylene dibromide (EDB) – 0.04 micrograms per liter ($\mu\text{g}/\text{L}$)
- 1,2-dibromo-3-chloropropane (DBCP) – 0.04 $\mu\text{g}/\text{L}$
- 1,2,3-trichloropropane (TCP) – 0.6 $\mu\text{g}/\text{L}$
- 1,2-dichloropropane (DCP) – 5 $\mu\text{g}/\text{L}$

Data Review

Table 1 presents the compliance monitoring programs, data collected, and the reporting frequencies at the Oahu Plantation Site as part of the remedial actions detailed in the *Compliance Monitoring Plan for Del Monte Corporation (Oahu Plantation)* (Golder, 2009c). Figure 1 presents the layout of the remedial systems in the KVSA. The following sections provide an evaluation of the mass of COCs in the perched aquifer soils, the groundwater extraction system, perched aquifer COC trends, the SVE system, COCs in the Kunia well used for basal aquifer extraction, and COC trends in the basal aquifer. Collectively these data were evaluated to determine whether remedial actions are resulting in the intended outcomes described in the ROD for COCs originating in the KVSA (EPA, 2003).

Evaluation of Perched Aquifer Remedy

The overall objective of the perched aquifer remedy, as described in the ROD, is to reduce perched aquifer contamination such that it can no longer cause exceedances of MCLs in the basal aquifer. The perched groundwater monitoring program has been conducted quarterly since the full-scale perched aquifer system was started in 2008 to evaluate the effects (e.g., changes in groundwater chemical concentrations, dewatering of the perched groundwater, contaminant removal using SVE, etc.) of the perched aquifer remediation system.

Figure 2 shows the layout of groundwater extraction, monitoring, and SVE wells that are part of the perched aquifer remediation system. There are currently 63 perched aquifer wells at the site. Twelve wells are groundwater monitoring only; the remaining 51 wells consist of 19 dual groundwater extraction and SVE wells, 30 SVE-only wells, and two groundwater-only extraction wells (Golder, 2009d). Dual-extraction and SVE-only wells are plumbed into nine groups of wells called “headers” which are connected to two vacuum blowers that extract air from the subsurface soil in the vicinity of the SVE wells along with volatile compounds, which are treated with carbon before the offgas is discharged to the atmosphere.

Groundwater extraction provides hydraulic containment, COC source removal, and dewatering of the perched aquifer so that the SVE system can remove COCs from soil in the deeper, most contaminated portion of the perched aquifer. The Fourth Quarter 2008 and First, Second, and Third Quarter 2009 Perched Groundwater Remediation Reports were reviewed for this evaluation (Golder, 2009d-g). Because implementation of full-scale operation of the perched aquifer remedy has only been active for 1.5 years, there are limited data to evaluate the performance of this remedy. Groundwater and SVE monitoring results for the first 1.5 years of operations are summarized in the following sections.

Evaluation of Perched Aquifer Dewatering

Groundwater extraction from the perched aquifer began in 1998. Between 1998 and 2008, 42 perched aquifer groundwater extraction wells and 24 monitoring wells were installed to delineate the extent of perched aquifer COCs, and reduce infiltration to the basal aquifer of perched groundwater containing the highest levels of COCs. Prior to completion of the full-scale perched groundwater extraction and SVE treatment system (completed in July 2008), extracted groundwater was treated in the phytoremediation system (Figure 1). Construction activities included the conversion of 30 monitoring wells with little water present and extraction wells that were dewatered from previous pumping, to new SVE wells, and the conversion of 19 wells into dual wells to serve as both SVE and groundwater extraction wells. As of July 2008, 19 dual and two groundwater-only extraction wells were fitted with air driven, low-level drawdown, groundwater extraction pumps. These pumps are set approximately 1.5 feet from the bottom of the well to maximize the ability to dewater the perched aquifer for SVE operations. Pumps automatically activate when the water level rises to above the pump and deactivate when the water is lowered to the top of the pump.

The perched aquifer must be dewatered by pumping for SVE operations to be optimized in each of the active SVE headers. Figures 3a through 3h show the cumulative weekly volume of water extracted from perched aquifer wells since system startup, and the water column height for perched aquifer wells within selected SVE headers and surrounding perched aquifer monitoring wells. A review of these figures suggests that during the drier months of the year (late spring, summer and fall months), groundwater extraction operations have generally been effective at wells where dedicated pumps could be installed within about two feet of total well depth. However, the capacity of the extraction system to keep the perched aquifer dewatered appears to be reduced during, and after, large rainfall events during the wetter winter months of December and January. As shown in Figure 3a, in response to large rainfall events in December 2008 through February 2009, the total volume extracted from perched aquifer wells increased two to three times over normal extraction volumes, and water levels in some wells remain elevated until mid- to late March even with

increased extraction volumes (Figures 3a through 3h). Perched groundwater extraction volumes fluctuate significantly in response to seasonal precipitation changes, but on average the perched extraction wells removed about 15,000 to 35,000 gallons per week (Golder, 2010). As of December 31, 2009 a total of approximately 1.7 million gallons have been extracted from the perched aquifer since system startup on June 18, 2008 (Zimmerman, 2010).

The elevated water levels in the SVE wells during wet months cause water to be drawn into the SVE wells, reducing effective operation of the SVE system. The effectiveness of the SVE system is further reduced when perched aquifer water levels are elevated because this would also lead to elevated soil moisture and reduced soil permeability throughout the perched aquifer.

In 2008, as part of the perched aquifer remedy, a vegetative soil cover was installed over the entire perched aquifer source area to reduce infiltration to the perched aquifer. A stormwater control system was also installed to divert runoff to drainage channels around the perched aquifer. These measures function well at reducing recharge during most times of the year with normal rainfall, but do not appear to be fully effective at preventing rapid infiltration of rainwater during large winter storms that may see tens of inches of rain over short time periods (see following section). Additionally, there may be increased recharge from upgradient areas of the perched aquifer to the west that are unaffected by the vegetated cover and stormwater controls during wetter periods.

Evaluation of Perched Aquifer Groundwater COC Data

The evaluation of long-term trends in perched aquifer groundwater COC concentrations is complicated by the limited number of wells with sufficient water for sampling that results from the dewatering of the perched aquifer. Since June 2008, the operation of automatic groundwater extraction pumps in 21 perched aquifer wells has resulted in a significant reduction in the amount, and areal extent, of perched groundwater. Accordingly, during the latter part of 2008 and throughout the third quarter 2009, perched groundwater samples could not be collected from several of the dual-extraction wells due to limited water levels in these wells. During 2009, the groundwater extraction system was shut down for at least 24 hours prior to quarterly sampling; however, typically only 10 to 15 perched aquifer monitoring and extraction wells recharged sufficiently to contain enough water for sampling (Golder, 2009d-g). During future perched groundwater sampling rounds the SVE system will be deactivated for two days and active groundwater pumping will be discontinued for one to two days prior to sampling. This should permit the sampling of a greater number of perched wells by allowing the wells to recharge sufficiently to permit sample collection (Golder, 2009d).

Table 2 presents the cumulative COC concentrations for perched aquifer wells through July 2009. The concentrations of EDB and DBCP in the perched aquifer reported through the third quarter 2009 are presented on Figure 4. A review of Table 2, Figure 4 and COC concentration trend graphs from Appendix C of the First, Second and Third Quarter 2009 Perched Groundwater Remedial Action Reports (Golder 2009d-g) illustrates that the concentrations of COCs in the perched aquifer generally decreased shortly after the start of remedial actions in 2004 (for wells completed by this date), with periodic COC spikes since the startup of remedial activities. After the initial decline in concentrations COC

concentrations have generally remained steady, with some wells indicating slight increasing trends, while others demonstrate slight decreasing trends. Many wells saw higher than normal concentrations in the first sampling event in 2008 after full-scale treatment commenced; however, subsequent sampling results returned to historical ranges.

Evaluation of Soil Vapor Extraction Data

This section presents a brief summary and evaluation of the SVE operational data, and SVE offgas sampling concentrations and mass removal.

SVE Operations

The Compliance Monitoring Plan (CMP; Golder, 2009c) calls for monthly SVE vacuum and flow measurements as summarized in Table 1; however, as of the Third Quarter 2009 these measurements were being recorded at least weekly. The greater monitoring frequency permits a more detailed evaluation of the variability in the SVE parameters (vacuum and flow rate). SVE has operated almost continuously since startup. The SVE system has typically been operated within the tolerances described in the CMP. The SVE system has typically operated within the following ranges since startup (Golder, 2009d-g):

- The total system flow is generally about 250 standard cubic feet per minute (scfm).
- The 40 horsepower (HP) and 10 HP vacuum blowers are typically operated at vacuums of 13.5 to 16, and 12.5 to 14.5 inches of mercury (in Hg) to meet the total system vacuum requirement of 15 in Hg.
- The vacuum within each header generally ranges from 6 to 9.5 in Hg.

At some wells and headers, short-circuiting from surface soils, or higher localized permeabilities, have resulted in the need to shut off a well or two within the header to achieve the desired system vacuum of 15 in Hg. This has generally been offset by the greater radius of influence from adjacent SVE wells in operation; however, greater mass removal would be expected with if the shut-off wells were in use. Currently the 10-HP and 40-HP blowers are working in tandem and the desired system vacuum becomes less than 15 in Hg when five or less of the nine headers are in operation. At header 3, the system vacuum is at full operational capacity when only the wells in header 3 are online. This is believed to be the result of relatively highly permeable fill material placed in the area of the former excavation pit. During the RI it was noted that most of the contaminant mass in this header is at the base of the perched aquifer that is not dewatered (approximately 100 ft bgs), so SVE probably would have limited success in this area.

Vacuum readings collected through October 2009 at each of the active SVE wells and surrounding wells indicate that the SVE system is achieving inward pressure gradients throughout each of the active treatment areas (headers) and slightly beyond. Overall, the SVE system is operating in accordance with its design.

SVE Off-Gas Sampling and Total Mass Removal

The performance objectives for the SVE system specified in the ROD are removal of COC mass from the perched aquifer source zone soils by exerting an inward pressure gradient across the source area. The SVE system was expected to operate until source area COCs masses for EDB and DCP have been reduced by 75% and DBCP mass has been reduced by 95%. This is intended to reduce these COCs in the source area such that they no longer cause

exceedances of MCLs in the basal aquifer (note that DCP currently does not, and has not historically exceeded the MCL in the basal aquifer).

SVE off-gas samples are collected from each operational header to indicate the relative contribution of COCs from different areas of the site. This information permits targeting of higher concentration areas to optimize removal efficiency. The SVE off-gas concentration graphs are prepared and reported quarterly in the *Quarterly Perched Aquifer Remedial Action Reports* (Golder, 2009d-g) to determine when COC concentrations have diminished significantly to warrant cycling to the next well group(s) and allow for diffusive recovery to occur.

The full-scale SVE system underwent startup and shakedown testing in June 2008. Because the perched aquifer had been substantially dewatered in the vicinity of headers 5, 6, 7, 8, and 9, SVE at these headers was activated first. Figure 5 summarizes the concentrations of the primary COCs and total organic carbon (TOC) removed by each header from system startup through December 15, 2009. While there is uncertainty in concentration trends given the frequency of sample collection, meeting mass removal goals in the ROD is directly dependent upon an adequate understanding of where the SVE system is removing the greatest mass from perched soils. A review of Figure 5 reveals the following observations for the first year and a half of SVE operations (header well groups presented on Figure 2).

1. Headers 5, 6, 7, 8, and 9 were brought online in June 2008 (through March '09).
 - Header 5 had the greatest concentrations of EDB and DBCP measured throughout all of the SVE headers over the first 1.5 years of operation.
 - Initial concentrations of all EDB and DBCP at headers 6, 7, 8, and 9 were much lower than header 5.
 - COC concentrations at all headers generally decreased after the first 2-3 months of operation, except for headers 6 and 9, where EDB and DBCP concentrations increased after their initial decline.
2. Headers 1, 2, and 4 were brought online in March 2009 (through September '09).
 - Header 2 concentrations of 1, 2-DCP were the greatest observed over the first 1.5 years of operation.
 - EDB and DBCP concentrations were moderate at header 2 initially before declining to near detection limits.
 - COC concentrations at headers 1 and 4 were low throughout the 6-month period of operation.
3. Header 3 SVE wells, which are predominantly completed in the higher permeability fill material in the former excavation pit, were brought online for a 1-month trial period in September 2009. Header 3 cannot be operated concurrently with any other headers or the system vacuum falls substantially below 15 in Hg. 1, 2-DCP concentrations were greater than those at most other headers, while EDB and DBCP concentrations were similar to those at other headers.

4. Headers 5, 6, and 7 were brought back online after a 7-month recovery period in October 2009 with header 1, which has been in operation since March 2009.
 - Concentrations of 1, 2-DCP, EDB and DBCP in headers 5, 6, and 7 were by and large similar to the concentrations observed during system startup in June 2008.
 - It is too soon to assess how long these concentrations will take to begin declining; however, the observed rebound in COC concentrations indicates that diffusive recovery is occurring.

Figure 6 summarizes the total COC and TOC mass removed by the SVE system through December 2009 for 1, 2-DCP, DBCP, and EDB, calculated from the combined off-gas sample results and recorded flow rates. The mass calculations are interpolated between measuring points on a daily frequency and assume a linear regression. Non-detected values are entered at one-half the detection limit. A review of Figure 6 reveals the following trends:

- During initial operation of headers 5, 6, 7, 8, and 9, mass removals were highest during the first 100 days before concentrations declined.
- Mass removal from headers 1, 2, and 4 was generally low throughout 6 months of operation.
- Mass removal from header 3 was low during 1 month of operation.
- Mass removal rates from headers 1, 5, 6, and 7, upon reactivation, began to increase at a similar rate to that observed during the initial startup of headers 5, 6, 7, 8, and 9.

Based upon RI and post-RI soil data obtained from the 2008 installation of additional monitoring wells MW-22, MW-23, and MW-24, the mass of EDB, DBCP, and 1, 2-DCP in perched aquifer soils was estimated and presented in a Technical Memorandum (Golder, 2008). The approximate estimated COC masses before SVE startup, and COC masses removed by SVE after 1.5 years of operations through December 15, 2009, are:

- EDB: Initial estimate - 11 kilograms (kg); SVE mass removed - 0.26 kg
- DBCP: Initial estimate - 35 kg; SVE mass removed - 0.64 kg
- 1,2-DCP: Initial estimate - 26 kg; SVE mass removed - 17.5 kg

These data (and Figure 6) indicate the SVE system is moderately effective at removing 1, 2-DCP mass from the perched aquifer soils, but that negligible mass recovery of DBCP and EDB has occurred in the first year and a half of SVE operations. Based upon current removal rates, DCP removal should attain the 75% mass reduction cleanup goal within the next year; however, given the low mass removal rates for DBCP and EDB achieved through the 4th quarter 2009, it may be impracticable to remove these COCs to their mass reduction cleanup goals (95% and 75%, respectively).

SVE off-gas data collected through the fourth quarter 2009 indicate that operation of the SVE system in most headers for greater than two to three months generally results in mass recoveries approaching asymptotic levels. Additional data are needed to establish whether more frequent cycling of headers will increase mass removal rates above those observed to date. During the first year and a half of operations, all of the headers have been operated,

but cycling was just implemented during the final couple months of the 5-year review period.

Evaluation of Basal Aquifer Remedy

This section provides a review of the basal aquifer groundwater monitoring data, and the Kunia well basal aquifer groundwater extraction system used for the source control portion of the remedy. The basal aquifer remedy specified in the ROD is phased groundwater extraction and treatment (starting at the Kunia well), with contingent monitored natural attenuation. The remedy includes installation of monitoring wells to characterize the source area and downgradient plume; source control at the Kunia well through groundwater extraction and treatment; and downgradient plume monitoring to determine if MNA is effective at reducing COC concentrations to MCLs. The ROD states that if monitoring data show that MNA is not effective at reducing contaminant concentrations to MCLs within 5 years, additional groundwater extraction will be implemented to ensure that the entire plume is captured and treated. However, as described in the following subsections, due to the presence of background COCs throughout the basal aquifer greater than MCLs it is impracticable to reduce COCs within the basal aquifer to MCLs with groundwater extraction or MNA.

Evaluation of Basal Aquifer Downgradient Plume

Since 2005, quarterly basal monitoring has been generally been conducted in accordance with the Final Basal Groundwater Monitoring Plan (Golder, 2003b) and the CMP (Golder, 2009b). Source control with groundwater extraction and treatment were initiated in September 2005 with completion of the Kunia well treatment system and startup of continuous pumping from the Kunia well. Basal monitoring well BMW-1 was completed prior to the RI, while wells BMW-2, BMW-3, and BMW-4 were completed during 2004; wells BMW-5 and BMW-6 were completed in 2005 and 2007, respectively. Well BMW-6 is a background well, intended to measure the concentrations of COCs present in the basal aquifer that are not related to the Del Monte site. State of Hawaii-owned deep monitoring wells (Department of Land and Natural Resources [DLNR] Mauka and Middle Deep wells) are also used for the monitoring program. Finally, data from Hawaii Department of Health (HDOH) sampling of the Hawaii Country Club (HCC) well were also evaluated, until HDOH stopped sampling this well after February 2008 (Golder, 2009b).

Figure 7 presents the basal aquifer monitoring network and basal groundwater elevations from October 2008. Groundwater contours indicate that the regional gradient is southerly, and this has been consistent throughout the remedial actions. Prior to completion of monitoring wells BMW-3 and BMW-4 in 2004, it was believed that the sea-level contact between the Ewa-Kunia (Waianae) and Waiawa-Waipahu (Koolau) aquifer systems lay to the east of the Kunia well. However, water level data from these wells demonstrated that the contact lies to the west of the Kunia well as shown in Figure 7.

In the course of evaluating the extent of the basal aquifer plume and data from background well BMW-6, data consistently indicated that a background source of COCs is present within the Waiawa-Waipahu Aquifer related to intensive historical application of fumigants at pineapple farms located throughout the central Oahu plateau. An assessment of these data was presented in the *Three-Year Cumulative Basal Groundwater Monitoring Report*

(Golder, 2009b), and in the *Evaluation of Background Concentrations of Contaminants of Concern in the Basal Aquifer* (Background Report) (Golder, 2009a). The Background Report concluded that multiple lines of evidence indicate that most (approximately 95%) of the COCs currently observed in the basal aquifer beneath the perched aquifer source area (Kunia well, BMW-1 and BMW-2) are from widespread regional application of these COCs on agricultural fields and not directly related to the Del Monte site. The Background Report analysis also indicated that prior to remedial actions including extracting perched groundwater starting in 1998, a larger percentage (30 to 50%) of the COCs observed in the basal aquifer source area originated from the Del Monte site. This trend is evident in the COC concentration trend plots presented in the next section.

Figure 8 presents COC results for monitoring wells installed within the Koolau Basalts (Kunia well, BMW-1, BMW-2, BMW-4, BMW-5, and BMW-6). COCs are not detected in monitoring wells screened in the Waianae Basalts (BMW-3 and the DLNR Ewa-Kunia Middle Deep Well); therefore these data were not included in the COC trend plots. The DLNR Mauka Deep Monitoring Well, which is an open borehole believed to be in hydraulic communication with both the Waianae and the Koolau basalt aquifers, has detectable concentrations of COCs, but at lower concentrations than observed in wells screened entirely in the Koolau basalts. As a result, this well was not included in this evaluation.

As shown on Figure 7, Kunia well, BMW-1 and BMW-2 are completed within or near the KVSA, whereas wells BMW-4, BMW-5 and BMW-6 are located long distances downgradient or cross-gradient of the Kunia source area. A review of Figure 8 (and Golder 2009b) indicates the following:

- The concentrations of EDB and DBCP detected in the Kunia well and BMW-1 decreased from 1997 to 2005, presumably due to the startup of perched aquifer groundwater extraction. From 1997 through 1999 the concentrations of EDB and DBCP in the Kunia well and BMW-1 averaged 0.16 µg/L and 0.77 µg/L, respectively, while during 2005, the concentrations of EDB and DBCP in the Kunia well and BMW-1 averaged 0.05 µg/L and 0.39 µg/L, respectively.
- Concentrations of EDB have remained consistent since 2005, while concentrations of DBCP have been slightly increasing in the Kunia well and BMW-2.
- Concentrations of 1, 2-DCP have remained consistent since 2005.
- Concentrations of 1, 2, 3-TCP, which is nearly absent in the perched aquifer source area, increased in many of the basal wells during 2006, but has shown a general decline since 2007. These data provide further evidence that the Kunia well is capturing COCs not originating from the perched aquifer source area, because 1, 2, 3-TCP concentrations are low or absent in perched aquifer wells.
- Concentrations of EDB and 1,2-DCP in BMW-1, BMW-2, and the Kunia well are generally similar to the COC concentrations in BMW-4, BMW-5 and BMW-6, located long distances downgradient or cross-gradient of the Kunia source area, providing evidence for background concentrations of the COCs that are present in the KVSA.

Evaluation of Basal Aquifer Source Area Groundwater Extraction

Remedial actions in the basal aquifer began in September 2005. Figure 8 presents the analytical results for samples collected from the Kunia well since the start of extraction pumping. From September 2005 to October 1, 2008, the system had operated for 21,160 hours and treated approximately 914 million gallons of water. The average of the detected COC concentrations for the Kunia well samples were: 0.045 µg/L EDB; 0.39 µg/L DBCP; and 1.4 µg/L 1, 2, 3-TCP (Golder, 2009b). Non-detected values were not included in the average calculation. Using these average COC concentrations and the total volume of water extracted from the Kunia well, the resulting total mass of COCs removed is estimated to be: 0.15 kg of EDB; 1.35 kg of DBCP; and 4.85 kg of 1,2,3-TCP (Golder, 2009b). In comparison, the amount of DBCP estimated to be present in a square mile of the basal aquifer, assuming a uniform concentration of 0.25 µg/L, is less than 4.5 kg or less than 1 gallon (Golder, 2009a).

Pumping tests and capture zone analysis were conducted during startup of the Kunia well in 2005 (Golder, 2007). The capture zone analysis indicated that the Kunia well extraction system captures COCs that originate from the basal aquifer source area. The capture zone analysis also indicated that reductions in COC concentrations from the pump and treat activities would be observed in a relatively short time in groundwater monitoring wells located in the source area (e.g., BMW-1 and BMW-2), and that basal groundwater extraction from the Kunia well would take longer to affect groundwater quality at BMW-4, located 3,500 feet downgradient of the Kunia well. The estimated basal groundwater travel time to BMW-4 is about two to three years. COCs have generally remained consistent in the Kunia extraction well source area and cross-gradient wells since pumping began, providing further evidence for the predominant background contribution of COC concentrations.

Available data indicate that perched aquifer groundwater extraction reduced concentrations of COCs in the basal aquifer from 1999 to 2005. Because background levels of COCs now dominate concentrations in the basal aquifer, the effects of the Kunia well pump and treat system since startup in 2005 appear to be minimal. Continued remedial actions in the perched and basal aquifers are unlikely to reduce total COC concentrations to or below MCLs, because background levels of COCs in the basal aquifer are above MCLs.

Summary and Conclusions

The conclusions resulting from the data review are summarized as follows:

Perched Aquifer Remediation System

- Automatic groundwater extraction pumps in the perched aquifer wells, in combination with the vegetated cover and stormwater diversion system, have been effective at dewatering the perched aquifer during times with normal rainfall but may become temporarily overwhelmed during long winter rainfall events, due to a combination of increased infiltration and possible recharge from upgradient portions of the perched aquifer.
- In the RI and subsequent investigations, elevated COCs were present in the deepest portion of the aquifer, at the base of the saprolites where the perched aquifer wells are completed. Although the perched aquifer extraction wells have generally been effective at dewatering the perched aquifer to the pump levels, there may be considerable mass

remaining in the saturated base of the perched aquifer that SVE operations will not be able to access and remove.

- The SVE portion of the perched aquifer remedial action has not been operated long enough for a complete evaluation at this time; however, at current mass removal rates, the SVE system will need to be operated for an extremely long time to significantly reduce the residual DBCP and EDB COC mass remaining in perched aquifer soils to the mass reduction goals in the ROD. Mass removal of 1, 2-DCP has been more effective to date. However, it is noted that 1,2-DCP currently does not exceed, and has not historically exceeded, the MCL in the basal aquifer
- Given the low mass currently being removed during SVE operations, and the persistence of elevated COC concentrations in perched aquifer groundwater, continued operation of the perched aquifer extraction wells may be necessary beyond the period of operation of the SVE system.

Basal Aquifer Remediation System

- Basal groundwater analytical data presented in the Basal Groundwater and Background Report presented several lines of evidence indicating that the predominant source of COCs in the basal aquifer beneath the KVSA, and downgradient plume, is due to the historic application of soil fumigants containing these COCs for agricultural use.
- Because background levels of COCs in the basal aquifer are currently above MCLs, remedial actions in the perched and basal aquifers will probably result in limited future reductions of COC concentrations in the basal aquifer.
- The Kunia well extraction and treatment system has operated steadily with minimal interruptions since startup in 2005. Pumping the Kunia well at the design flow of 750 – 1,000 gpm is effectively capturing COCs throughout the source area.
- Since 2005, pumping the Kunia well, along with the perched aquifer wells, has resulted in little discernible change in COC concentrations in the basal aquifer source area (Kunia well, BMW-1 and BMW-2). It is difficult to estimate the extent that perched aquifer remediation is currently reducing impacts to the basal aquifer.
- EPA, in its letter to Del Monte dated February 2, 2006, stated that a Technical Impracticability (TI) Waiver may be appropriate to waive the applicable or relevant and appropriate requirements (ARARs) of cleaning up the basal aquifer to MCLs if background levels of COCs are above MCLs. If EPA determines, based on the background report, that a TI waiver is appropriate, EPA may develop background concentrations for COCs and write an amendment to the Record of Decision. The ROD amendment would change one or more of the groundwater remedial goals to background levels or other levels that the EPA determines are appropriate based on the technical impracticability of cleaning up to MCLs.

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TABLE 1

Types of Monitoring Data Collected

Five-Year Review Report for Del Monte Corporation, Oahu Plantation Superfund Site

Kunia, Oahu, Hawaii

Unit Designation	Description	Monitoring Network	Monitoring Schedule	Monitoring Analysis (Chemicals)	Report / Frequency of Data Collection
Basal Aquifer Monitoring and Kunia Well Treatment System					
Groundwater levels	Groundwater elevations are collected at eight (8) wells in the basal aquifer monitoring network. Data are used to prepare a potentiometric map that depicts the regional groundwater flow direction in the Ewa-Kunia and Waiawa-Waipahu aquifers.	BMW-1 through BMW-6, Department of Natural Resources (DNLN) Mauka Deep Monitoring well, and Ewa-Kunia deep well.	Quarterly as described in the Compliance Monitoring Plan (CMP)	None	Basal Groundwater Monitoring Reports (Quarterly, and 3-year Cumulative)
Groundwater Monitoring	Groundwater samples are regularly collected at 9 wells, including the Kunia pumping well. Samples at the Kunia Well Treatment System (KWTS) are collected of: 1) influent water from the Kunia well, 2) water after treatment by air stripping, and 3) after the carbon treatment unit.	Kunia well, wells BMW-1 through BMW-6. DNLN Mauka Deep and DLNR Ewa-Kunia Middle Deep wells. The Hawaii Country Club (HCC) well was sampled periodically by the Hawaii Dept. of Health until Sept. 2008, when sampling was discontinued.	Quarterly for non-pumping wells, Monthly performance monitoring for the Kunia well as described in the CMP.	Volatile Organic Compounds (VOCs) by EPA method 8260B, and EDB and DBCP by EPA Method 504.1.	Basal Groundwater Monitoring Reports (Quarterly, and 3-year Cumulative)
Perched Aquifer Treatment System					
Vegetative Cover and Storm Water Control System	A vegetative soil cover was constructed over the perched aquifer source area to reduce rainfall infiltration through the perched aquifer source area, and potential recharge to the basal aquifer. Surface grading and storm water controls were implemented to mitigate standing water that may accumulate on the vegetative soil cover. The cover was established between August and October 2008, and required irrigation over this time. Since October 2008 irrigation of the cover has not been conducted.	Perched aquifer source area. Stormwater diversion channel installed topographically upslope from the source area to intercept and divert runoff around the soil cover area.	Weekly and after large rainfall events by visual observation as described in the CMP.	None	Perched Groundwater Remedial Action Reports (Quarterly)
Soil Vapor Extraction (SVE) System Monitoring	The SVE system was designed and installed to induce a vacuum on deeper soil throughout the perched aquifer source area. The SVE system consists of 30 SVE only wells, and 19 dual SVE/ groundwater extraction wells. The effectiveness of the SVE system is enhanced through keeping the perched aquifer dewatered with groundwater extraction wells. SVE and dual wells are grouped into nine spatially distinct areas (headers) and connected to a central manifold such that any one or all of the nine headers may be in operation at any given time, however currently the vacuum blower only has the capacity to operate up to 5 headers concurrently. Soil gas samples to monitor VOC mass removal are collected regularly from each header along with the system vacuums and flow rates.	The SVE system has been built with nine "headers" grouping a total of 49 dual extraction and SVE-only wells (Figure 2).	As described in the CMP, collection of off-gas SVE samples at 24 hours, 1-week, and monthly after each header is activated. Sample collection frequency may increase if monthly data indicate mass removal is stable. Quarterly sampling of air following carbon offgas treatment. Weekly O&M measurements of the SVE system performance, SVE wells and flow measurements. Including: <ul style="list-style-type: none"> Total air flow parameters from the SVE manifold Vacuum readings measured from each blower (10-HP and 40-HP) Vacuum readings measured from each operational header Vacuum readings measured from each active well and surrounding 	Total non-methane organic compounds (TNMOC) by EPA Method TO-12 and EDB, DBCP, 1,2-DCP, and trichloropropane (TCP) by EPA Method TO-15	Perched Groundwater Remedial Action Reports (Quarterly)

TABLE 1

Types of Monitoring Data Collected

Five-Year Review Report for Del Monte Corporation, Oahu Plantation Superfund Site

Kunia, Oahu, Hawaii

Unit Designation	Description	Monitoring Network	Monitoring Schedule	Monitoring Analysis (Chemicals)	Report / Frequency of Data Collection
			in-active wells		
Perched Groundwater levels and groundwater extraction volumes	Automated groundwater extraction pumps are installed into 21 wells in the perched aquifer source area. Once sufficient water has collected over the pump, the pump automatically turns on and runs until the well has been dewatered down to the pump. Pumps are typically installed near the bottom of extraction wells.	All monitoring and extraction wells in the perched aquifer (that are not dry), including dual wells and groundwater-only extraction wells. All extraction wells are fitted with totalizers that record extracted groundwater volumes.	Water levels and extracted groundwater volumes are measured in active perched groundwater wells on a weekly basis. Water levels in all site wells are measured monthly and quarterly during perched groundwater monitoring events.	None.	Perched Groundwater Remedial Action Reports (Quarterly)
Perched Groundwater Monitoring	Groundwater samples are collected from perched aquifer monitoring wells and dual extraction wells that contain sufficient water for sampling, on a quarterly basis. Currently, groundwater extraction pumps are turned off at least 48-hours prior to sampling to allow wells to recharge to facilitate sampling. Extracted perched groundwater is stored in the White Tank and primarily treated at the KWTS. About once a week some perched water is discharged to the Phytoremediation system to keep the plants healthy.	All perched aquifer wells that have not been converted to SVE-only wells that have not been effectively dewatered by pumping activities. Collection of treatment samples from the KWTS is covered under monthly performance monitoring discussed above.. The phytoremediation system is also sampled periodically as described in the CMP.	<ul style="list-style-type: none"> Collection of groundwater samples from wells that are actively pumped Collection of groundwater samples from wells that contain enough water to permit sample collection, Collection of samples from the "white tank" discharge (tank holding perched water before treatment) Collection of samples from the KWTS 	VOCs by EPA method 8260B, and EDB and DBCP by EPA Method 504.1.	Perched Groundwater Remedial Action Reports (Quarterly)
Phytoremediation Treatment System	Extracted perched groundwater is periodically applied through a drip irrigation system to the lined Phytoremediation system. Water is treated through evapotranspiration by Koa Haole trees. Excess water is collected in sumps and reapplied to the system in a closed-loop fashion.	As described in the CMP, performance monitoring is conducted quarterly on batch water collected from the White Tank, as well as water collected in the Phytoremediation sumps.	<ul style="list-style-type: none"> Quarterly collection of samples from the White Tank and phytoremediation cell sumps. 	VOCs by EPA method 8260B, and EDB and DBCP by EPA Method 504.1.	Perched Groundwater Remedial Action Reports (Quarterly)

TABLE 2
Historical Summary of Perched Groundwater Chemicals of Concern
Five-Year Review Report for Del Monte Corporation, Oahu Plantation Superfund Site
Kunia, Oahu, Hawaii

Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments
EW-40	SVE	7/10/2008	Dry	Dry	Dry	
		10/21/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		1/20/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009
EW-41	Dual	7/10/2008	0.55	1.0 U	3.2	
		10/21/2008	0.43 J	0.69 J	3.3	
		1/20/2009	0.16 J	1 U	1.7	
		4/14/2009	0.1 J	1 U	1.4	
		7/14/2009	0.5 U	1 U	1.5	
EW-42	Dual	7/10/2008	36	23	180	
		10/21/2008	5.2	4.6	67	
		1/20/2009	11	15	250	
		4/14/2009	1.7	1.6	18	
		7/14/2009	3.9	3.9	40	
HW-3	GW Only	2/10/1999	0.50 U	1.0 U	2.93	
		6/4/1999	0.102 UJ	1.0 U	2.84 UJ	
		7/27/1999	0.06 UJ	1.0 U	2.47	
		1/31/2000	0.193/0.05	1U / 0.01U	2.93	
		7/5/2000	0.5 U	1.0 U	3.08	
		11/8/2000	0.5 U	1.0 U	3.67	
		1/22/2001	0.5 U	1.0 U	3.06	
		6/11/2001	0.5U / 0.02U	1U / 0.01U	2.2	
		2/10/2004	0.50 U	1.0 U	1.6	
		6/7/2005	0.50 U	1.0 U	0.81 J	
		9/20/2005	0.50 U	1.0 U	1.0 U	
		4/11/2006	0.50 U	1.0 U	1.1	
		7/11/2006	0.50 U	1.0 U	1.1	
		9/19/2006	0.50 U	1.0 U	0.91	
		1/9/2007	0.50 U	1.0 U	1.4	
		3/20/2007	0.50 U	0.37 J	1.3	
		6/19/2007	0.5 U	1.0 U	1.4	
		9/18/2007	0.50 U	1.0 U	1.6	
		1/8/2008	0.50 U	1.0 U	1.1	
		1/20/2009	0.50 U	1.0 U	0.76 J	
7/10/2008	0.50 U	1.0 U	1.3			
10/21/2008	0.50 U	1.0 U	0.88 U			
4/14/2009	0.5 U	1 U	1.2			
7/14/2009	0.5 U	1 U	1.1			
HW-9	GW Only	12/15/1997	0.02 U	0.031	0.5 U	
		1/12/1998	0.02 U	0.02 U	1 U	
		5/13/1998	0.39	0.01 J	0.68	
		7/28/1998	0.84	0.1	1.48	
		2/9/1999	0.09 UJ	1 U	0.937 UJ	
		6/4/1999	0.5 U	1 U	1.34	
		7/27/1999	1.34	1 U	2.34	
		1/31/2000	2.14 / 1.85	1 U / 0.013	4.79	
		7/5/2000	7.41	1 U	4.82	
		11/8/2000	Dry	Dry	Dry	
		1/22/2001	Dry	Dry	Dry	
		6/11/2001	Dry	Dry	Dry	
		Well decommissioned in February 2008.				

App Table C1.xlsx

Note: Adopted from Golder Associates.

TABLE 2
Historical Summary of Perched Groundwater Chemicals of Concern
Five-Year Review Report for Del Monte Corporation, Oahu Plantation Superfund Site
Kunia, Oahu, Hawaii

Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments
EW-4	GW Only	2/9/1999	451 J	355 J	3790 J	
		5/3/1999	Dry Dry		Dry	
		7/27/1999	Dry Dry		Dry	
		1/31/2000	Dry Dry		Dry	
		7/5/2000	Dry Dry Dry			
		11/8/2000	Dry Dry Dry			
		1/22/2001	Dry Dry Dry			
		6/11/2001	Dry Dry Dry			
		2/10/2004	190	4400	7200	
		6/7/2005	120	1100	3000	
		9/20/2005	270	900	2000	
		12/13/2005	Dry	Dry	Dry	
		4/11/2006	30	770 J	1900	
		6/19/2007	Dry	Dry	Dry	
	9/18/2007	Dry	Dry	Dry		
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.
1/20/2009		NS	NS	NS	Sealed for SVE, see note 3.	
4/14/2009		Dry	Dry	Dry	Sealed for SVE, see note 4.	
					Dry for remainder of 2009	
EW-5	GW Only	< Jan 2008	Well contained insufficient water for sampling during sampling periods prior to October 2008.			
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.
		4/14/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.
					Dry for remainder of 2009	
EW-6	GW Only	2/9/1999	40 UJ	683	4580	
		5/3/1999	46.7 UJ	518	6520	
		7/27/1999	40.3 UJ	259	6690	
		7/5/2000	250 U	500 U	7340	
		11/8/2000	Dry Dry Dry			
		1/22/2001	Dry Dry Dry			
		6/11/2001	Dry Dry Dry			
		6/7/2005	Disconnected	Disconnected	Disconnected	
		6/19/2007	dry	dry	dry	
	9/18/2007	dry	Dry	Dry		
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.
4/14/2009		Dry	Dry	Dry	Sealed for SVE, see note 4.	
					Dry for remainder 2009	
EW-7	SVE	Well contained insufficient water for sampling during sampling periods prior to October 2008.			Sealed for SVE, see note 3.	
EW-8	SVE	Well contained insufficient water for sampling during sampling periods prior to October 2008.			Sealed for SVE, see note 3.	
EW-9	GW Only	2/9/1999	19.4 J	5.6 J	17.1 J	
		5/3/1999	11.9	4	19.9	
		7/27/1999	27.5	12.9	55.8	
		1/31/2000	25.6 / 23.6	9.4 / 9.15	34.1	
		7/5/2000	20.3	8.93	35.9	
		11/8/2000	49.1	29	119	
		1/22/2001	48	28	119	
		6/11/2001	36 / 20	17 / 11	110	
		2/10/2004	11	6.8	27	
		6/7/2005	0.39 J	1.0 U	3.2	
		9/20/2005	0.51	0.53 J	5	
		12/13/2005	0.71	0.81 J	7.4	
		4/11/2006	0.50 U	1.0 U	2	
		7/10/2006	0.96	1.5	13	
		9/19/2006	1.3	1.8	19	
		1/9/2007	1.9	1.4	18	
		3/20/2007	2.2	0.5 J	18	
		6/19/2007	2.6	1 U	21	
		9/18/2007	4.6	1.3	29	
		1/8/2008	5.1	1.9	33	

App Table CL.xlsx

Note: Adopted from Golder Associates.

TABLE 2
Historical Summary of Perched Groundwater Chemicals of Concern
Five-Year Review Report for Del Monte Corporation, Oahu Plantation Superfund Site
Kunia, Oahu, Hawaii

Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments	
EW-9 (con't)	Dual	7/10/2008	NS	NS	NS	Water level below pump intake.	
		10/21/2008	NS	NS	NS	Water level below pump intake.	
		1/20/2009	NS	NS	NS	Water level below pump intake.	
		4/14/2009	NS	NS	NS	Insufficient water to collect sample	
		7/14/2009	NS	NS	NS	Insufficient water to collect sample	
EW-10	GW Only	2/9/1999	116 J	32.1 J	102 J		
		5/3/1999	336	97	547		
		7/27/1999	201	101	789		
		1/31/2000	478 / 384	176 / 133	622		
		7/5/2000	109	77.1	910		
		11/8/2000	25 U	50 U	1220		
		1/22/2001	25 U	50 U	1170		
		6/11/2001	25U / 0.02U	50U / 0.01U	980		
		2/10/2004	16	29	86		
		6/7/2005	0.43 J	2.4	5.5		
		9/20/2005	0.35 J	1.0 U	4.5		
		12/13/2005	9.1	6	52		
		4/11/2006	1	1.0 U	9.5		
		7/10/2006	17	13	99		
		9/19/2006	31	28	190		
		1/9/2007	51	54	340		
		3/20/2007	2.5 U	5 U	310		
		6/19/2007	30	31	320		
	9/18/2007	9.7	13	450			
	1/8/2008	18	18	320			
	Dual	7/10/2008	39	38	240		
		10/21/2008	22	26	190		
		1/20/2009	0.5 U	0.68 J	0.48 J		
4/14/2009		Dry	Dry	Dry	Dry for remainder of 2009		
EW-11	GW Only	2/9/1999	0.18 UJ	0.51 UJ	4.5 J		
		5/3/1999	0.75	1 U	3.41		
		7/27/1999	Dry	Dry	Dry		
		1/31/2000	Dry	Dry	Dry		
		7/5/2000	Dry	Dry	Dry		
		11/8/2000	Dry	Dry	Dry		
		1/22/2001	Dry	Dry	Dry		
		6/11/2001	Dry	Dry	Dry		
		6/7/2005	0.50 U	0.80 J	1.1		
		9/20/2005	0.50 U	1.0 U	1.2		
		12/13/2005	0.50 U	1.0 U	1.8		
		4/11/2006	0.50 U	1.0 U	1.2		
		7/10/2006	0.30 J	1.0 U	2.8		
		9/19/2006	0.24 J	1.0 U	2.6		
		1/9/2007	0.17 J	1.0 U	2.8		
		3/20/2007	0.5 U	1.0 U	2.6		
		6/19/2007	dry	dry	dry		
		Well was dry during the September 2007 period					
	SVE	1/8/2008	0.50 U	9.1	2		
		7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
		4/14/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.	
					Dry for remainder 2009		
EW-12	GW Only	2/9/1999	54.1 UJ	3160	11600		
		5/3/1999	149 UJ	5750	26200		
		7/27/1999	128 UJ	4520	25500		
		7/5/2000	500 U	1000 U	23900		
		11/8/2000	Dry	Dry	Dry		
		1/22/2001	Dry	Dry	Dry		
		6/11/2001	Dry	Dry	Dry		
		Well contained insufficient water for sampling during subsequent sampling periods through January 2008.					
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
					Dry for remainder of 2009		

App Table C1.xlsx

Note: Adopted from Golder Associates.

TABLE 2
Historical Summary of Perched Groundwater Chemicals of Concern
Five-Year Review Report for Del Monte Corporation, Oahu Plantation Superfund Site
Kunia, Oahu, Hawaii

Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments
EW-13	GW Only	11/8/2000	26.8	11.6	61.4	
		1/22/2001	19.9	12.9	53.6	
		6/11/2001	16 / 19	9.6 / 11	55	
		2/10/2004	1.6	1.0 U	4.6	
		6/7/2005	0.43 J	0.67 J	1.4	
		9/20/2005	0.71	1.0 U	2.2	
		12/13/2005	4.7	1.3	8.5	
		4/11/2006	0.61	1.0 U	2.8	
		7/10/2006	6.6	1.6	16	
		9/19/2006	4.0	0.89	11	
		1/9/2007	29	7.2	63	
		3/20/2007	37	9.3	79	
		6/19/2007	46	15	80	
	9/18/2007	44	14	87		
	1/8/2008	38	11	63		
	Dual	7/10/2008	48	15	66	
10/21/2008		9.1	3.7	27		
1/20/2009		0.26 J	1 U	3.7		
4/14/2009		24	7.7	49		
7/14/2009		NS	NS	NS	Insufficient water to activate pump	
EW-14	GW Only	11/8/2000	8.8	3.9	46.7	
		1/22/2001	10.8	5.68	53.4	
		6/11/2001	17 / 17	6.9 / 6.8	54	
		2/10/2004	1.5	1.0 U	6.8	
		6/7/2005	0.58	0.64 J	1.9	
		9/20/2005	0.65	1.0 U	2.4	
		12/13/2005	0.9	1.0 U	3.5	
		4/11/2006	0.50 U	1.0 U	2.8	
		7/11/2006	0.7	1.0 U	3.0	
		9/19/2006	1.1	1.0 U	4.0	
		1/9/2007	0.50 U	1.0 U	2.1	
		3/20/2007	0.84	0.23 J	2.8	
		6/19/2007	0.72	1 U	3.5	
	9/18/2007	0.9	1 U	4.6		
	1/8/2008	0.79	1.0 U	3.6		
	Dual	7/10/2008	Dry	Dry	Dry	
10/21/2008		0.38 J	1 U	2		
1/20/2009		0.5 U	1 U	0.76 J		
4/14/2009		0.12 J	1 U	3.6		
7/14/2009		NS	NS	NS	Insufficient water to activate pump	
EW-15	GW Only	11/8/2000	896	341	905	
		1/22/2001	621	389	848	
		6/11/2001	710 / 720	460 / 560	1100	
		2/10/2004	1.2	1.0 U	4.2	
		6/7/2005	0.50 U	1.0 U	1.2	
		9/20/2005	0.50 U	1.0 U	1.4	
		12/13/2005	0.81	1.9	5.9	
		4/11/2006	0.50 U	1.0 U	1.8	
		7/10/2006	5.1	1.0 U	27 J	
		9/19/2006	0.71	1.0 U	4.1	
		1/9/2007	40	35	150	
		3/20/2007	33	27	250	
		6/19/2007	46	45	490	
	9/18/2007	49	82	740		
	Dual	1/8/2008	53	79	1200	
		7/10/2008	94	110	640	
1/20/2009		25	26	310		
4/14/2009		4.4	28	150		
7/14/2009		NS	NS	NS	Insufficient water to activate pump	

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Note: Adopted from Golder Associates.

TABLE 2
Historical Summary of Perched Groundwater Chemicals of Concern
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Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments	
EW-16	GW Only	11/8/2000	24.1	5.11	25.3		
		1/22/2001	13.6	6.21	26.2		
		6/11/2001	29 / 34	8 / 7	29		
		2/10/2004	3.1	1.1	3.4		
		6/7/2005	0.47 J	0.44 J	0.90 J		
		9/20/2005	0.48 J	0.60 J	2.8		
		12/13/2005	Well Pump Broken				
		4/11/2006	0.50 U	1.0 U	2.5		
		7/10/2006	2.4	0.71 J	3.4		
		9/19/2006	0.50 U	1.0 U	2.2		
		1/9/2007	1.2	0.55 J	4.1		
		3/20/2007	1.2	0.49 J	5.0		
		6/19/2007	0.92	1 U	10		
	9/18/2007	0.74	1.3	10			
	1/8/2008	0.72	0.82 J	8.8			
	Dual	7/10/2008	67	7.5	27		
10/21/2008		2.6	1.1	5.6			
1/20/2009		0.5 U	1 U	0.42 J			
4/14/2009		0.45 J	1 U	2.8			
7/14/2009		0.21 J	1 U	1.8			
EW-17	GW Only	< July 2008	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.				
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009	
EW-18	GW Only	< July 2008	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.				
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009	
EW-19	GW Only	< July 2008	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.				
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009	
EW-20	GW Only	< July 2008	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.				
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Dry for remainder of 2009	

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Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments	
EW-21	GW Only	< July 2008	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.				
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Dry for remainder of 2009	
EW-22	GW Only	11/8/2000	50 U	100 U	1740		
		1/22/2001	25 U	50 U	1540		
		6/11/2001	35 / 38	37 / 44	1700		
		2/25/2004	6.5	27	700		
		12/13/2005	2.0 J	21 J	250 J		
		4/11/2006	2.1	17	220		
		7/11/2006	1.8	11	170		
		9/19/2006	2.5	16	140 J		
		1/9/2007	dry	dry	dry		
	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.						
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
						Dry for remainder of 2009	
EW-23	GW Only	2/25/2004	1.8 J	80	3800		
	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.						
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
					Dry for remainder of 2009		
EW-24	GW Only	2/25/2004	1.8 J	160	4100		
	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.						
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
					Dry for remainder of 2009		
EW-25	GW Only	< July 2008	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.				
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
						Dry for remainder of 2009	
EW-26	GW Only	11/8/2000	125 U	250 U	5640		
		1/22/2001	Dry	Dry	Dry		
		6/11/2001	Dry	Dry	Dry		
		Well contained insufficient water for sampling during subsequent sampling periods through January 2008.					
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
						Dry for remainder of 2009	
EW-27	GW Only	11/8/2000	250 U	500 U	14200		
		1/22/2001	250 U	500 U	12600		
		6/11/2001	Dry	Dry	Dry		
		2/25/2004	25 U	190	11000		
		Well contained insufficient water for sampling during subsequent sampling periods through January 2008.					
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009	

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Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments	
EW-28	GW Only	11/8/2000	5 U	10 U	123		
		1/22/2001	22.5	10.5	42.5		
		6/11/2001	71 / 80	20 / 26	90		
		2/10/2004	10	4.5	27		
		6/7/2005	0.59	1.0 U	4		
		9/20/2005	0.21 J	1.0 U	2.6		
		12/13/2005	2.6	1.1	12		
		4/11/2006	0.50 U	1.0 U	3.1		
		7/11/2006	4.3	2.3	15		
		9/19/2006	2.2	1.7	8.9		
		1/9/2007	3.6	1.6	16		
		3/20/2007	2.8	0.92 J	14		
		6/19/2007	2.3	0.95 J	13		
		9/18/2007	2.4	1.2	15		
	1/8/2008	1.9	0.78 J	14			
	Dual	7/10/2008	8.8	5.7	33		
		10/21/2008	0.8	0.92 J	4.6		
1/20/2009		0.48 J	0.34 J	3.5			
4/14/2009		8.2	3.8	61			
7/14/2009		16	6.1	170			
EW-29	GW Only	11/8/2000	250 U	500 U	13100		
		1/22/2001	Dry	Dry	Dry		
		6/11/2001	Dry	Dry	Dry		
	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.						
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009	
EW-30	GW Only	11/8/2000	500 U	2220	26200		
		1/22/2001	Dry	Dry	Dry		
		6/11/2001	Dry	Dry	Dry		
	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.						
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009	

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Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments	
EW-31	GW Only	6/11/2001	17 / 15	19 / 17	60		
		2/10/2004	1.4	1.0 U	2		
		6/7/2005	0.50 U	1.0 U	0.60 J		
		9/20/2005	0.50 U	1.0 U	0.71 J		
		12/13/2005	0.29 J	1.0 U	1.1		
		4/11/2006	broken pump				
		7/11/2006	7.1	1.0 U	1.9		
		9/19/2006	1.1	1.0 U	1.1		
		1/9/2007	0.58	1.0 U	2.7		
		3/20/2007	0.57	0.16 J	2.1		
		6/19/2007	0.29 J	1 U	2.4		
		9/18/2007	0.38 J	1 UJ	3.8		
		1/8/2008	0.36 J	1.0 U	1.2		
		7/10/2008	100	1.5	14		
	10/21/2008	Dry	Dry	Dry	Insufficient water to collect sample		
	1/20/2009	0.85	1 U	1.6			
	4/14/2009	0.5 U	1 U	2.9			
7/14/2009	NS	NS	NS	Insufficient water to activate pump			
EW-32	GW Only	6/11/2001	8500 / 8500	7500 / 8800	18000		
		2/10/2004	6.1	12	32		
		6/7/2005	0.19 J	1.0 U	2.4		
		9/20/2005	0.50 U	1.0 U	2.2		
		12/13/2005	0.20 J	1.0 U	3.4		
		4/11/2006	0.50 U	1.0 U	2.3		
		7/11/2006	5.1	5.5	140		
		9/19/2006	0.25 J	1.0 U	5.2		
		1/9/2007	9.9	6	180		
		3/20/2007	72	84	1200		
		6/19/2007	56	96	1300		
		9/18/2007	68	82	1700		
		1/8/2008	37	79	1500		
		7/10/2008	45	75	730		
	10/21/2008	Dry	Dry	Dry	Insufficient water to collect sample		
	1/20/2009	40	88	1500			
	4/14/2009	38	120	1700			
7/14/2009	NS	NS	NS	Insufficient water to activate pump			
EW-33	GW Only	6/11/2001	17 / 14	2 U / 0.61	66		
		2/10/2004	14	1.0 U	3.5		
		6/7/2005	0.21 J	1.0 U	1.6		
		9/20/2005	0.50 U	1.0 U	1.8		
		12/13/2005	0.50 U	1.0 U	1.7		
		4/11/2006	0.50 U	1.0 U	1.4		
		7/10/2006	0.50 U	1.0 U	1.2		
		9/19/2006	0.50 U	1.0 U	1.2		
		1/9/2007	0.50 U	1.0 U	1.7		
		3/20/2007	0.50 U	1.0 U	1.4		
		6/19/2007	0.5 U	1 U	1.5		
		9/18/2007	0.1 J	1 U	1.7		
		1/8/2008	0.14 J	1.0 U	1.6		
		7/10/2008	3.1	1.0 U	3.4		
	10/21/2008	8	1 U	5.4			
	1/20/2009	9.7	1 U	0.78 J			
	4/14/2009	1.7	1 U	0.99			
7/14/2009	0.39 J	0.62 J	0.85				

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Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments
EW-34	GW Only	6/11/2001	160 / 170	15 / 15	190	
		2/10/2004	0.25 J	1.0 U	1.7	
		6/7/2005	0.50 U	1.0 U	0.78 J	
		9/20/2005	0.50 U	1.0 U	1.2	
		12/13/2005	0.50 U	1.0 U	2	
		4/11/2006	0.50 U	1.0 U	1.0 U	
		7/10/2006	0.50 U	1.0 U	2.4	
		9/19/2006	0.50 U	1.0 U	1.6	
		1/9/2007	0.50 U	1.0 U	1.9	
		3/20/2007	0.50 U	1.0 U	1.5	
		6/19/2007	0.5 U	1 U	2.4	
		9/18/2007	0.21 J	1 U	4.3	
		1/8/2008	0.50 U	1.0 U	1.8	
	Dual	7/10/2008	Dry	Dry	Dry	
		10/21/2008	Dry	Dry	Dry	Insufficient water to collect sample
1/20/2009		1.5	1 U	0.91 J		
4/14/2009		0.15 J	1 U	1.2		
7/14/2009		NS	NS	NS	Insufficient water to activate pump	
EW-35	GW Only	6/11/2001	90 / 110	33 / 39	110	
		2/10/2004	1	1.0 U	6.1	
		6/7/2005	0.21 J	1.0 U	1.5	
		9/20/2005	0.50 U	1.0 U	2.5	
		12/13/2005	0.20 J	1.0 U	5	
		4/11/2006	0.50 U	1.0 U	3.1	
		7/10/2006	0.50 U	1.0 U	1.0 U	
		9/19/2006	0.50 U	1.0 U	4	
		1/9/2007	0.8	1.2	8.6	
		3/20/2007	1.2	0.59 J	10	
		6/19/2007	1.3	0.75 J	13	
		9/18/2007	2.6	0.6 J	19	
		1/8/2008	6	7.6	100	
	Dual	7/10/2008	1.8	0.90 J	13	
		10/21/2008	2.4	3.1	33	
1/20/2009		1.5	0.29 J	5.2		
4/14/2009		NS	NS	NS	Insufficient water to collect sample	
7/14/2009		NS	NS	NS	Insufficient water to activate pump	
EW-36	Dual	7/10/2008	0.50 U	1.0 U	1.8	
		10/21/2008	57	61	920	Analytical results for EW-36 and EW-37 appear to be switched
		1/20/2009	0.5 U	1.0 U	1	
		4/14/2009	0.093 J	1 U	0.63	
		7/14/2009	0.1 J	0.27 J	0.72	
EW-37	Dual	7/10/2008	170	70	560	
		10/21/2008	0.5 U	1 U	2.7	Analytical results for EW-36 and EW-37 appear to be switched
		1/20/2009	43	33	690	
		4/14/2009	28	27	2.5 J	
		7/14/2009	0.58	0.53 J	5	
EW-38	Dual	7/10/2008	85	110	210	
		10/21/2008	0.15 J	0.84 J	9.9	
		1/20/2009	2	85	78	
		4/14/2009	11	66	150	
		7/14/2009	Dry	Dry	Dry	
EW-39	SVE	7/10/2008	Dry	Dry	Dry	
		10/21/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		1/20/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009

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EW-40	SVE	7/10/2008	Dry	Dry	Dry	
		10/21/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		1/20/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009
EW-41	Dual	7/10/2008	0.55	1.0 U	3.2	
		10/21/2008	0.43 J	0.69 J	3.3	
		1/20/2009	0.16 J	1 U	1.7	
		4/14/2009	0.1 J	1 U	1.4	
		7/14/2009	0.5 U	1 U	1.5	
EW-42	Dual	7/10/2008	36	23	180	
		10/21/2008	5.2	4.6	67	
		1/20/2009	11	15	250	
		4/14/2009	1.7	1.6	18	
		7/14/2009	3.9	3.9	40	
HW-3	GW Only	2/10/1999	0.50 U	1.0 U	2.93	
		6/4/1999	0.102 UJ	1.0 U	2.84 UJ	
		7/27/1999	0.06 UJ	1.0 U	2.47	
		1/31/2000	0.193/0.05	1U / 0.01U	2.93	
		7/5/2000	0.5 U	1.0 U	3.08	
		11/8/2000	0.5 U	1.0 U	3.67	
		1/22/2001	0.5 U	1.0 U	3.06	
		6/11/2001	0.5U / 0.02U	1U / 0.01U	2.2	
		2/10/2004	0.50 U	1.0 U	1.6	
		6/7/2005	0.50 U	1.0 U	0.81 J	
		9/20/2005	0.50 U	1.0 U	1.0 U	
		4/11/2006	0.50 U	1.0 U	1.1	
		7/11/2006	0.50 U	1.0 U	1.1	
		9/19/2006	0.50 U	1.0 U	0.91	
		1/9/2007	0.50 U	1.0 U	1.4	
		3/20/2007	0.50 U	0.37 J	1.3	
		6/19/2007	0.5 U	1.0 U	1.4	
		9/18/2007	0.50 U	1.0 U	1.6	
		1/8/2008	0.50 U	1.0 U	1.1	
		1/20/2009	0.50 U	1.0 U	0.76 J	
7/10/2008	0.50 U	1.0 U	1.3			
10/21/2008	0.50 U	1.0 U	0.88 U			
4/14/2009	0.5 U	1 U	1.2			
7/14/2009	0.5 U	1 U	1.1			
HW-9	GW Only	12/15/1997	0.02 U	0.031	0.5 U	
		1/12/1998	0.02 U	0.02 U	1 U	
		5/13/1998	0.39	0.01 J	0.68	
		7/28/1998	0.84	0.1	1.48	
		2/9/1999	0.09 UJ	1 U	0.937 UJ	
		6/4/1999	0.5 U	1 U	1.34	
		7/27/1999	1.34	1 U	2.34	
		1/31/2000	2.14 / 1.85	1 U / 0.013	4.79	
		7/5/2000	7.41	1 U	4.82	
		11/8/2000	Dry	Dry	Dry	
		1/22/2001	Dry	Dry	Dry	
		6/11/2001	Dry	Dry	Dry	
		Well decommissioned in February 2008.				

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Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments
MW-1	Not Used	6/4/1997	0.41	0.025	2.4	
		9/8/1997	0.39	0.04 U	2.4	
		10/20/1997	0.63	0.04 U	1.8	
		1/12/1998	0.52	0.02 U	3	
		5/12/1998	1.1	0.01 U	2.1	
		7/27/1998	0.65	0.01 U	2.24	
		2/25/2004	0.50 U	1.0 U	3.3	
		Well not sampled, because extraction well HW-3 is within 10-feet and HW-3 is sampled				
MW-2	Monitoring	6/4/1997	530	72	710 *D	
		9/8/1997	570	84	850	
		10/21/1997	140 J	56 J	530	
		1/12/1998	108	33.8	500 D	
		5/13/1998	82	40	880	
		7/27/1998	68	32.8	797	
		4/11/2006	170	40	250	
		Well contained insufficient water for sampling during subsequent sampling periods through January 2008.				
Well decommissioned in February 2008.						
MW-2A	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		10/21/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		1/20/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009
MW-3	GW Only	9/8/1997	3300	1200	3700	
		10/22/1997	6800	1700	2000 D	
		1/12/1998	2660	1060	2300 D	
		5/13/1998	3200	1400	3500	
		7/28/1998	1900	1090	2580	
		Well contained insufficient water for sampling during subsequent sampling periods through January 2008.				
	Not Used	Well not used as part of perched groundwater extraction system.				
MW-3S	GW Only	9/4/1997	130	60000	7100	
		10/22/1997	400 U	78000 D	5300 D	
		1/12/1998	130	45,900	5,200 D	
		5/13/1998	100	47,000	4300	
		Well contained insufficient water for sampling during subsequent sampling periods through January 2008.				
	Not Used	Well not used as part of perched groundwater extraction system.				
MW-5	Monitoring	9/4/1997	12	160	240	
		10/23/1997	28	130	340	
		1/13/1998	15.4	89.9	370 D	
		5/13/1998	20	160	490	
		7/28/1998	23	222	524	
		2/25/2004	0.25 J	6.4	70 J	
		12/13/2005	1.0 U	4.1 J	140 J	
		4/11/2006	0.50 U	2.7 J	83	
		7/11/2006	0.35 J	1.1	91	
		9/19/2006	0.50 U	1.0	16	
		1/9/2007	0.23 J	0.46 J	86	
		3/20/2007	0.26 J	0.43 J	81	
		6/19/2007	1 U	2 U	73	
		9/17/2007	0.08 J	1 U	36	
		1/7/2008	0.50 U	1.4	34	
		7/9/2008	0.50 U	1.0 U	10	
		10/20/2008	0.5 U	1.0 U	11	
		1/21/2009	0.50 U	1.0 U	4.2	
		4/13/2009	0.5 U	0.22 J	26	
		7/14/2009	Dry	Dry	Dry	

App Table C1.xlsx

Note: Adopted from Golder Associates.

TABLE 2
Historical Summary of Perched Groundwater Chemicals of Concern
Five-Year Review Report for Del Monte Corporation, Oahu Plantation Superfund Site
Kunia, Oahu, Hawaii

Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments	
MW-6	Monitoring	10/24/1997	0.05	0.04 U	1.9		
		11/20/1997	0.12	0.04 U	1.9		
		1/13/1998	0.29	0.02 U	3		
		5/13/1998	0.092 J	0.008 J	1.3		
		7/27/1998	0.18	0.031	1.12		
		2/25/2004	0.50 U	1.0 U	0.99 J		
		12/13/2005	0.50 U	1.0 U	1.2 J		
		4/11/2006	0.50 U	1.0 U	1.0 U		
		7/11/2006	0.50 U	1.0 U	0.70 J		
		9/19/2006	0.50 U	1.0 U	1.0 U		
		1/9/2007	0.50 U	1.0 U	0.68 J		
		3/20/2007	0.5 U	1 U	0.48 J		
		6/19/2007	0.5 U	1 U	0.17 J		
		9/17/2007	Dry	Dry	Dry		
		1/7/2008	0.50 U	1.0 U	0.63 J		
		1/21/2009	0.5 U	1 U	0.23 J		
		7/9/2008	0.50 U	1.0 U	0.39 J		
		10/20/2008	0.50 U	1.0 U	0.11 J		
		1/21/2009	0.50 U	1.0 U	0.23 J		
		4/13/2009	0.5 U	1 U	0.37 J		
7/14/2009	Dry	Dry	Dry				
MW-7	Monitoring	11/8/2000	250 U	500 U	15500		
		1/22/2001	500 U	1000 U	17400		
		6/11/2001	Dry	Dry	Dry		
		Well contained insufficient water for sampling during subsequent sampling periods through January 2008.					
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.	
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.	
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.	
		4/14/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.	
7/14/2009	Dry	Dry	Dry				
MW-8	Monitoring	11/8/2000	2.5 U	5 U	76.6		
		1/22/2001	10 U	20 U	383		
		6/11/2001	Dry	Dry	Dry		
		2/25/2004	0.50 U	1.9	330		
		Well contained insufficient water for sampling during subsequent sampling periods through January 2008.					
		7/10/2008	Dry	Dry	Dry	Insufficient water to collect sample	
		10/21/2008	NS	NS	NS	Insufficient water to collect sample	
		1/20/2009	NS	NS	NS	Insufficient water to collect sample	
		4/14/2009	Dry	Dry	Dry	Insufficient water to collect sample	
7/14/2009	Dry	Dry	Dry				
MW-9	Monitoring	Well contained insufficient water for sampling during sampling periods.					
MW-10	Monitoring	Well contained insufficient water for sampling during sampling periods.					
MW-12	Monitoring	Well contained insufficient water for sampling during sampling periods.					
MW-13	Monitoring	6/11/2001	93	310	1300		
		2/25/2004	0.68	15	180		
		12/13/2005	0.51 J	4.1 J	86 J		
		4/11/2006	1.1	91	96		
		7/11/2006	0.47 J	2.4	64		
		9/19/2006	0.38 J	1.5	59		
		1/9/2007	0.28 J	1.2	59		
		3/20/2007	0.22 J	0.18 J	48		
		6/19/2007	0.77	8.2	120		
		9/17/2007	1.8	19	120		
		1/7/2008	0.36 J	9.5	130		
	7/10/2008	0.50 U	1.8	70			
	Dual	10/21/2008	330	250	1400	Concentrations appear anomolous	
		1/20/2009	0.5 U	2.2	8.1		
7/14/2009		4.7	11	170			

App Table CL.xlsx

Note: Adopted from Golder Associates.

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Five-Year Review Report for Del Monte Corporation, Oahu Plantation Superfund Site
Kunia, Oahu, Hawaii

Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments
MW-14	Monitoring	6/11/2001	1.2	2.4	50	
		2/25/2004	0.26 J	1.0 U	27	
		4/11/2006	0.50 U	3.0 J	6.9 J	
		Well contained insufficient water for sampling during all subsequent sampling periods				
MW-15	Monitoring	< July 2008	Well contained insufficient water for sampling during subsequent sampling periods through January 2008.			
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009
MW-16	Monitoring	< July 2008	Well contained insufficient water for sampling during sampling periods.			
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		10/21/2008	NS	NS	NS	Sealed for SVE, see note 3.
		1/20/2009	NS	NS	NS	Sealed for SVE, see note 3.
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009
MW-17	Monitoring	Well contained insufficient water for sampling during sampling periods.				
MW-18	Monitoring	2/25/2004	3.9	180	590	
		12/13/2005	4.7 J	170 J	310 J	
		4/11/2006	5.0 U	20	110	
		7/11/2006	3.9	95	170	
		9/19/2006	3.9	120	190	
		1/9/2007	3.5	150	170	
		3/20/2007	2.7	70	150	
		6/19/2007	2.2 J	48	180	
		9/17/2007	2.1	26	170	
		1/7/2008	1.8	30	140	
	Dual	7/10/2008	2.1	28	160	
		10/21/2008	40 J	32 J	370 J	Concentrations appear anomalous
		1/20/2009	0.5 U	0.53 J	18	
		4/14/2009	3.4	6.9	150	
MW-19	Monitoring	< July 2008	Well contained insufficient water for sampling during sampling periods.			
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		10/21/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		1/20/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009
MW-20	Monitoring	< July 2008	Well contained insufficient water for sampling during sampling periods.			
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		10/21/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		1/20/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009
MW-21	Monitoring	< July 2008	Well contained insufficient water for sampling during sampling periods.			
	SVE	7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		10/21/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		1/20/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009
MW-22	Monitoring	< July 2008	Well contained insufficient water for sampling during sampling periods.			
		7/10/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		10/21/2008	Dry	Dry	Dry	Sealed for SVE, see note 4.
		1/20/2009	Dry	Dry	Dry	Sealed for SVE, see note 4.
		4/14/2009	Dry	Dry	Dry	Dry for remainder of 2009

App Table C1.xlsx

Note: Adopted from Golder Associates.

TABLE 2
Historical Summary of Perched Groundwater Chemicals of Concern
Five-Year Review Report for Del Monte Corporation, Oahu Plantation Superfund Site
Kunia, Oahu, Hawaii

Well	Well Type	Sample Date	EDB (µg/L)	DBCP (µg/L)	1,2-DCP (µg/L)	Comments
MW-23	Monitoring	7/18/2006	0.014	0.0050 U	0.50 J	
		9/19/2006	0.50 U	1.0 U	0.56 J	
		1/9/2007	0.50 U	1.0 U	0.79 J	
		3/21/2007	0.50 U	1.0 U	0.94	
		6/18/2007	0.5 U	1 U	1.0	
		9/17/2007	0.5 U	1 U	0.97 J	
		1/7/2008	0.50 U	1.0 U	0.98 J	
		7/9/2008	0.50 U	1.0 U	1	
		10/20/2008	0.50 U	1.0 U	1.1	
		1/21/2009	0.50 U	1.0 U	0.94 J	
		4/13/2009	0.5 U	1 U	0.86	
		7/13/2009	0.5 U	1 U	0.92	
		MW-24	Monitoring	7/18/2006	0.086	0.0050 U
9/19/2006	0.50 U			1.0 U	0.42 J	
1/9/2007	0.50 U			1.0 U	0.97 J	
3/21/2007	0.50 U			1.0 U	0.95	
6/18/2007	0.5 U			1 U	1.0	
9/17/2007	0.08 J			1 U	1.1	
1/7/2008	0.50 U			1.0 U	0.53 J	
7/9/2008	0.50 U			1.0 U	0.13 J	
10/20/2008	0.50 U			1.0 U	1.2	
1/21/2009	0.50 U			1.0 U	1 U	
4/13/2009	0.5 U			1 U	0.44 J	
7/13/2009	0.5 U			1 U	0.75	

U - Analyte was not detected above the given sample quantitation limit

J - Estimated value

NS - Not sampled

SVE - Soil vapor extraction well

GW Only - Groundwater extraction only well

Dual - SVE and GW extraction well

Notes:

1. Samples collected during January 2000 and June 2001 were analyzed for ethylene dibromide (EDB) and 1,2-dibromo-3-chloropropane (DBCP) by both Method 8260 and Method 504.1.

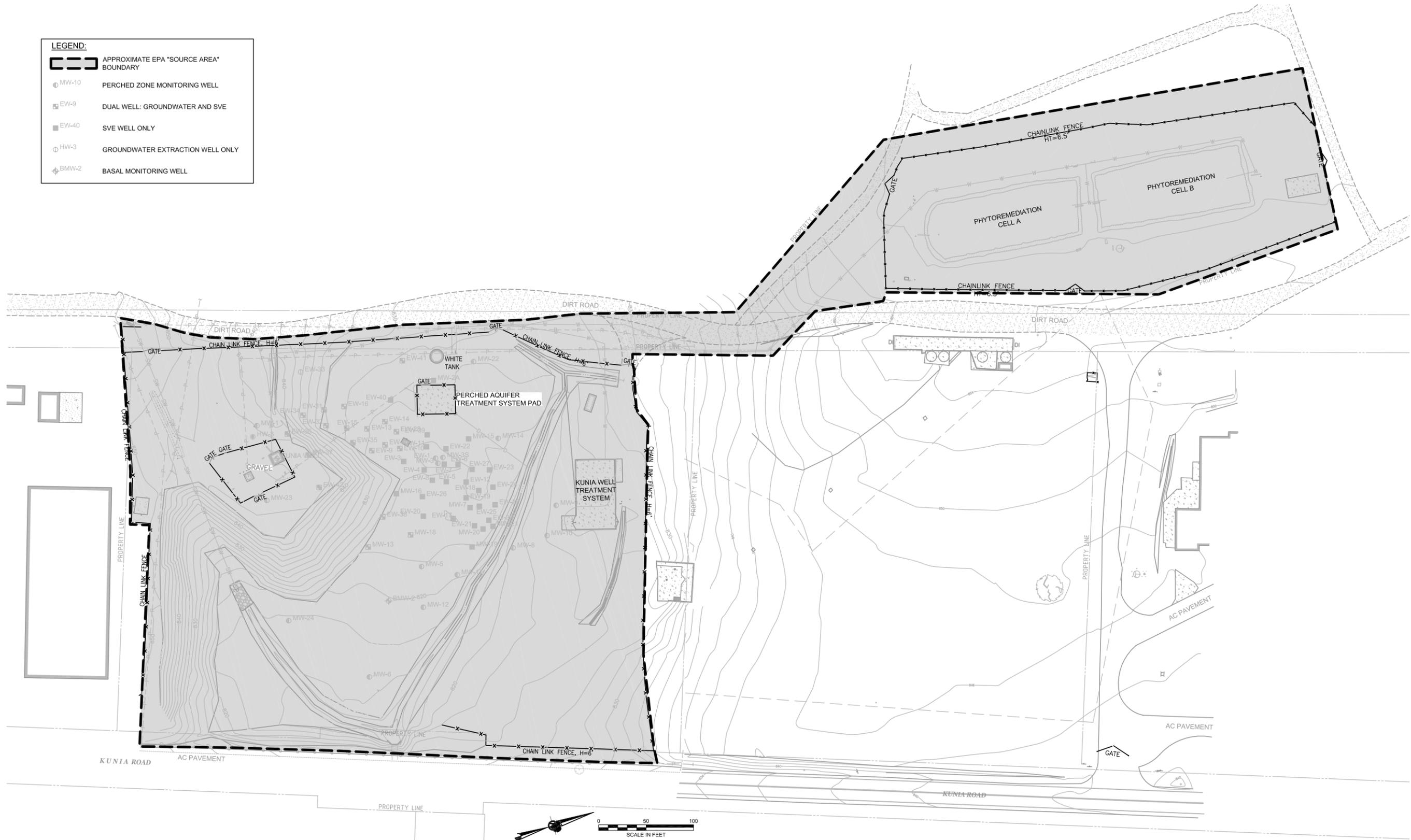
2. Perched groundwater extraction system was switched off from February to June 2008 during remedial action construction.

3. Sealed for SVE indicates groundwater sampling is not possible without disassembling the wellhead.

"NS" designations for SVE wells indicate that water was present in the well but the well was under active SVE, and was not sampled.

4. "Dry" indicates that the well contained an insufficient amount of water for sampling.

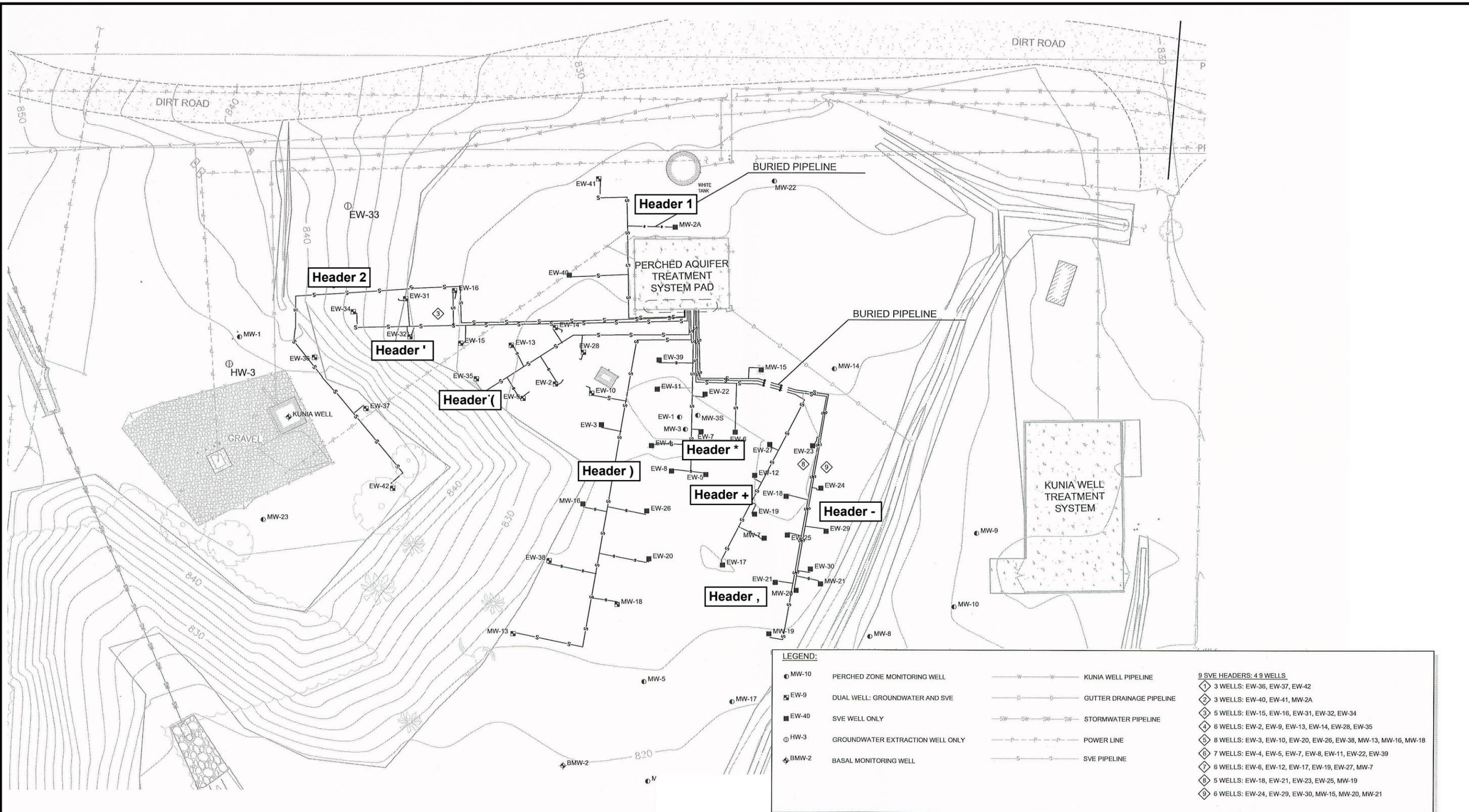
LEGEND:	
	APPROXIMATE EPA "SOURCE AREA" BOUNDARY
	MW-10 PERCHED ZONE MONITORING WELL
	EW-9 DUAL WELL: GROUNDWATER AND SVE
	EW-40 SVE WELL ONLY
	HW-3 GROUNDWATER EXTRACTION WELL ONLY
	BMW-2 BASAL MONITORING WELL



NOTES:
 1. SOURCE: BASE MAP AND WELL LOCATION FROM SURVEY COMPLETED AUGUST, 2008.
 2. EPA "SOURCE AREA" DEFINED IN THE INSTITUTIONAL CONTROLS CONSENT DECREE BETWEEN JAMES CAMPBELL COMPANY LLC AND EPA FILED ON SEPTEMBER 18, 2007.

Figure adopted from Golder INC.

FIGURE 1
EPA SOURCE AREA
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE CORPORATION OAHU PLANTATION SUPERFUND SITE, KUNIA, HAWAII



LEGEND:		9 SVE HEADERS: 49 WELLS	
● MW-10	PERCHED ZONE MONITORING WELL	— W — W — W —	KUNIA WELL PIPELINE
■ EW-9	DUAL WELL: GROUNDWATER AND SVE	— □ — □ — □ —	GUTTER DRAINAGE PIPELINE
■ EW-40	SVE WELL ONLY	— SW — SW — SW —	STORMWATER PIPELINE
⊙ HW-3	GROUNDWATER EXTRACTION WELL ONLY	— P — P — P —	POWER LINE
◆ BMW-2	BASAL MONITORING WELL	— S — S — S —	SVE PIPELINE
① 1	3 WELLS: EW-36, EW-37, EW-42		
② 2	3 WELLS: EW-40, EW-41, MW-2A		
③ 3	5 WELLS: EW-15, EW-16, EW-31, EW-32, EW-34		
④ 4	6 WELLS: EW-2, EW-9, EW-13, EW-14, EW-28, EW-35		
⑤ 5	8 WELLS: EW-3, EW-10, EW-20, EW-26, EW-38, MW-13, MW-16, MW-18		
⑥ 6	7 WELLS: EW-4, EW-5, EW-7, EW-8, EW-11, EW-22, EW-39		
⑦ 7	6 WELLS: EW-6, EW-12, EW-17, EW-19, EW-27, MW-7		
⑧ 8	5 WELLS: EW-18, EW-21, EW-23, EW-25, MW-19		
⑨ 9	6 WELLS: EW-24, EW-29, EW-30, MW-15, MW-20, MW-21		

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NOTES:
SOURCE: BASE MAP AND WELL LOCATION FROM SURVEY COMPLETED AUGUST, 2008.

FIGURE 2
PERCHED AQUIFER TREATMENT SYSTEM LAYOUT
FIVE-YEAR REVIEW REPORT FOR DEL MONTE CORPORATION OAHU PLANTATION SUPERFUND SITE, KUNIA, HAWAII

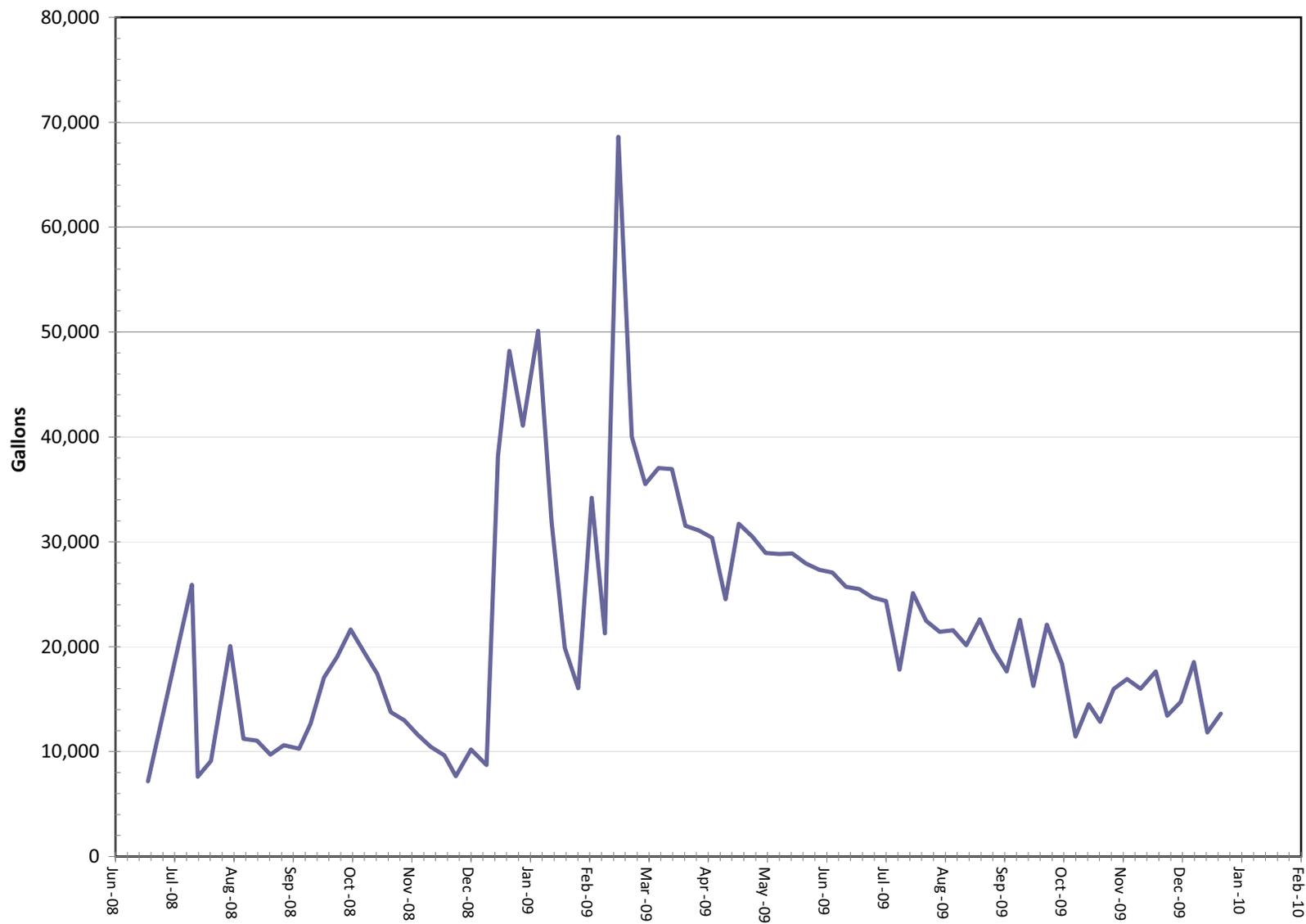
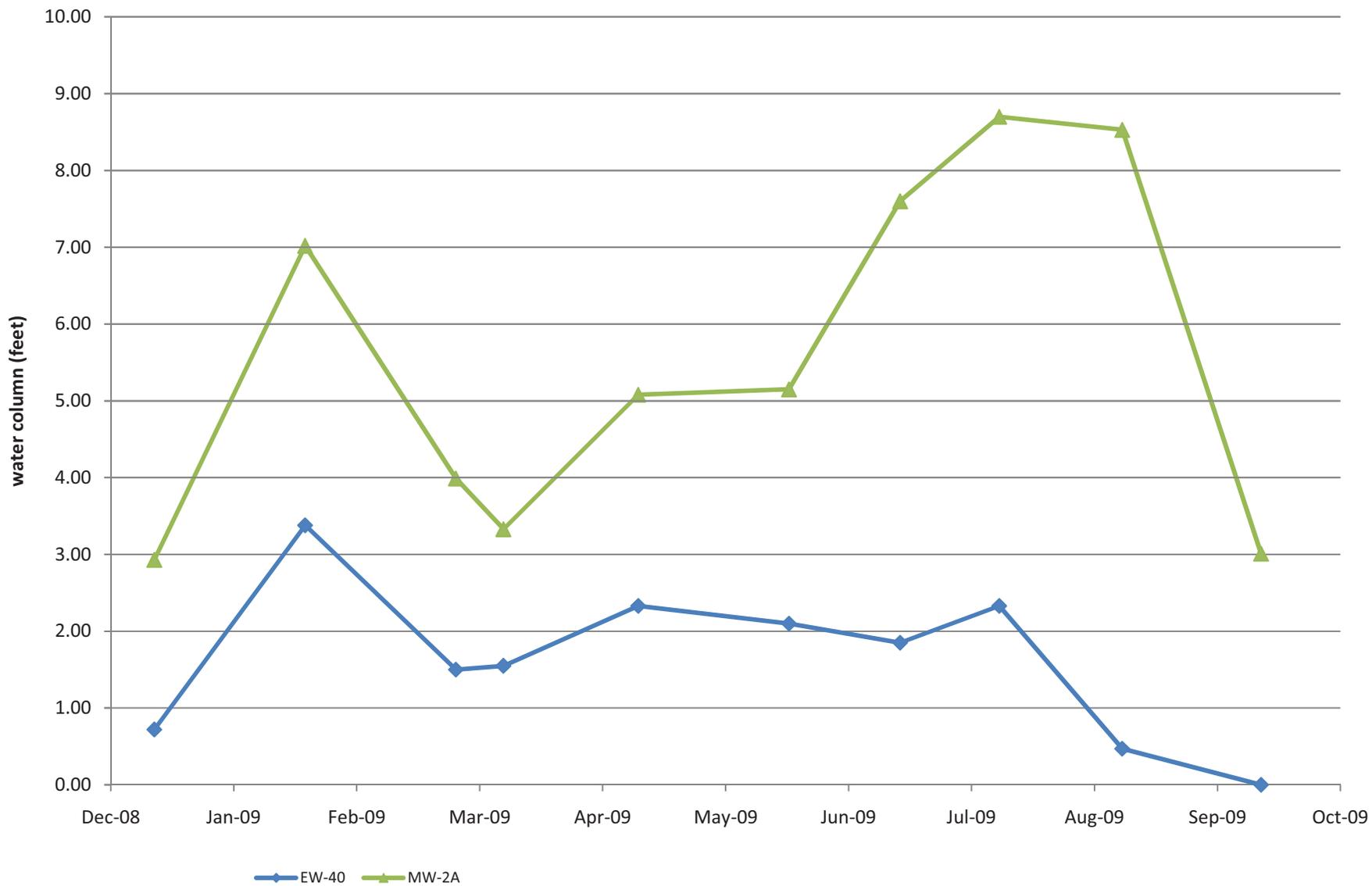
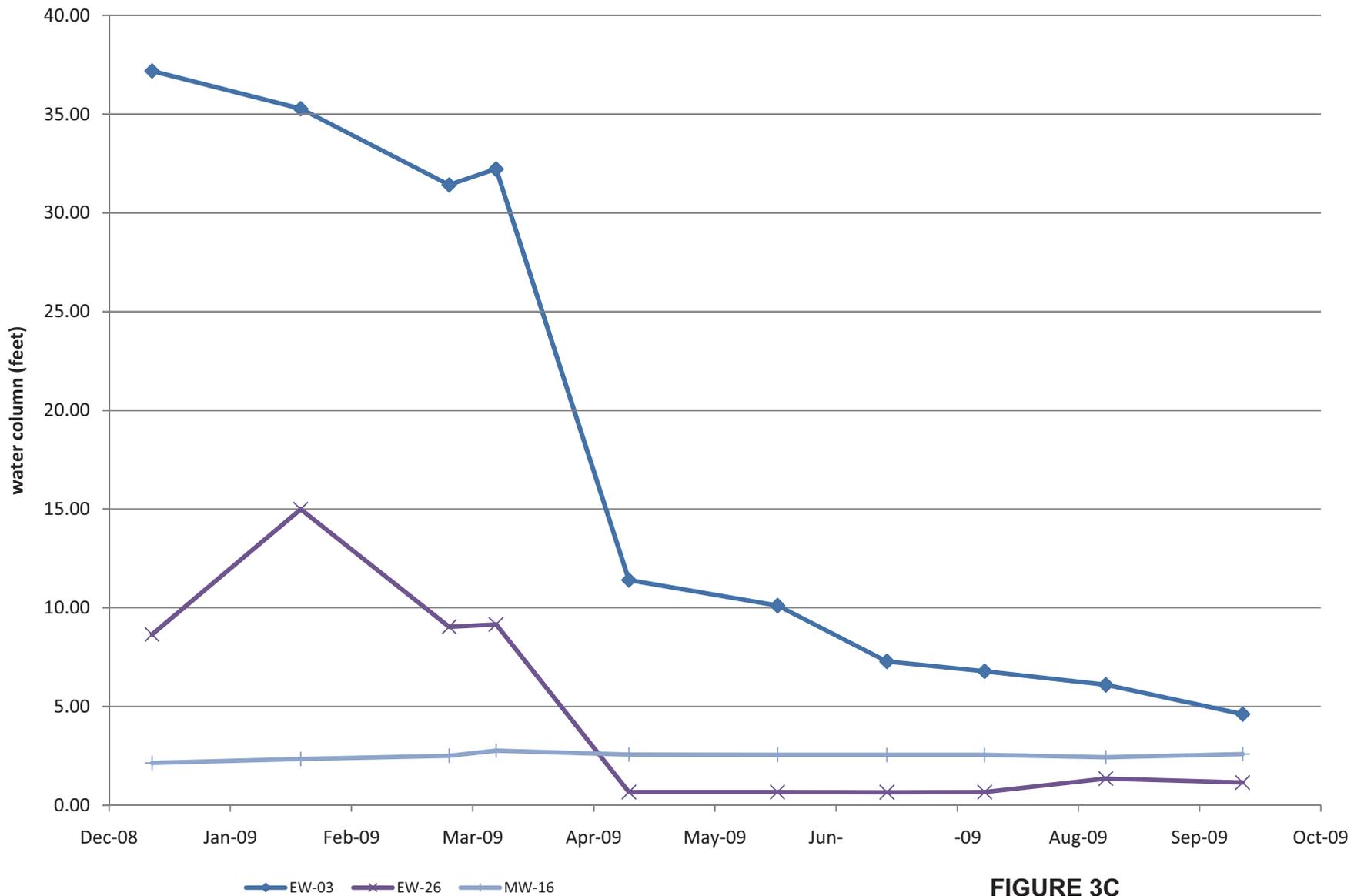


FIGURE 3A
TOTAL GALLONS PUMPED FROM
PERCHED AQUIFER EXTRACTION
WELLS PER WEEK
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII



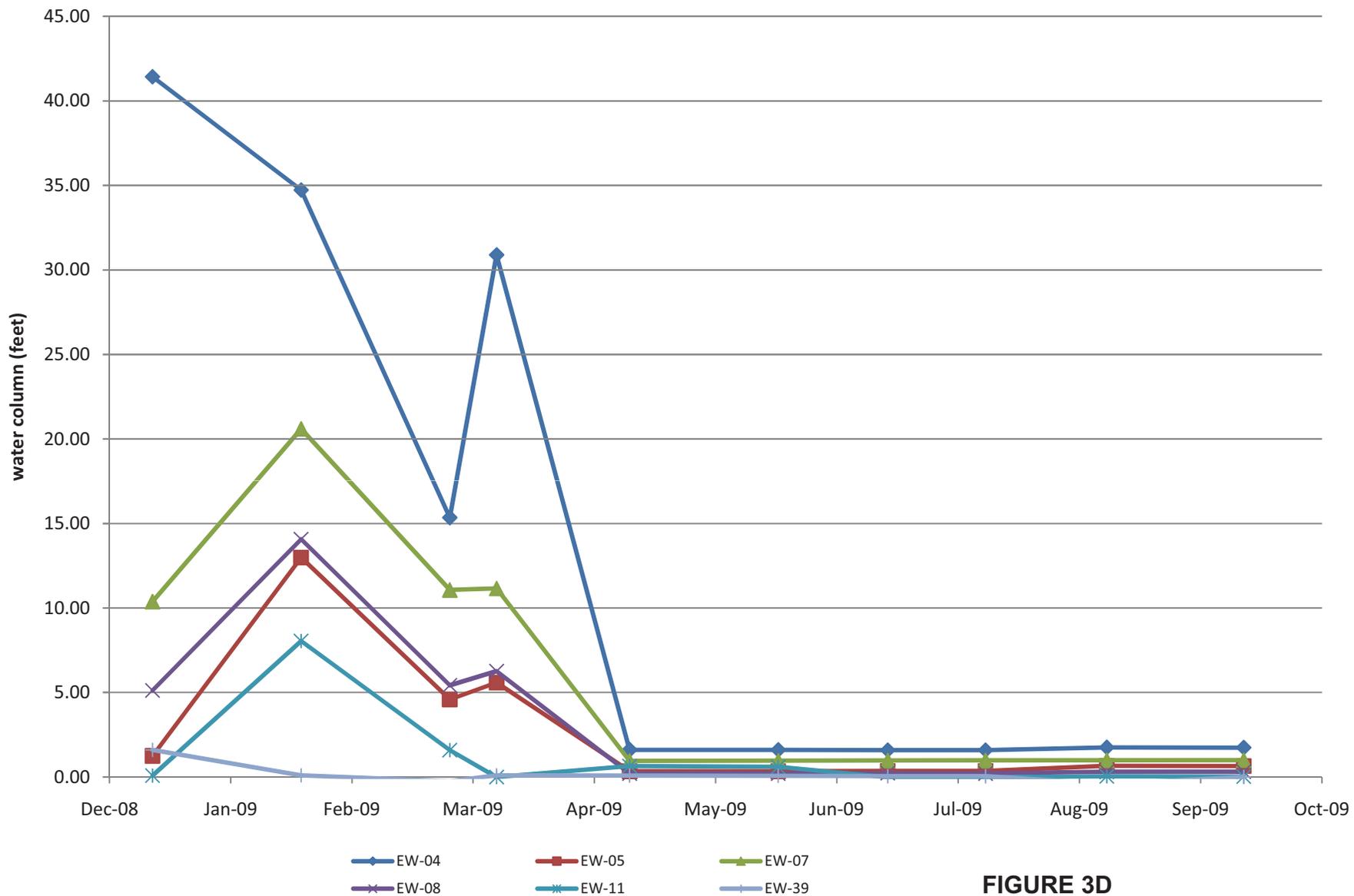
Note: Active SVE on header 1 since March 11, 2009.
 SVE deactivated September 10, 2009

FIGURE 3B
MONTHLY WATER COLUMN
HEIGHT FOR SVE-ONLY WELLS
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII



Note: Active SVE on header 5 between July 2008 and March 2009. SVE deactivated on March 10, 2009.

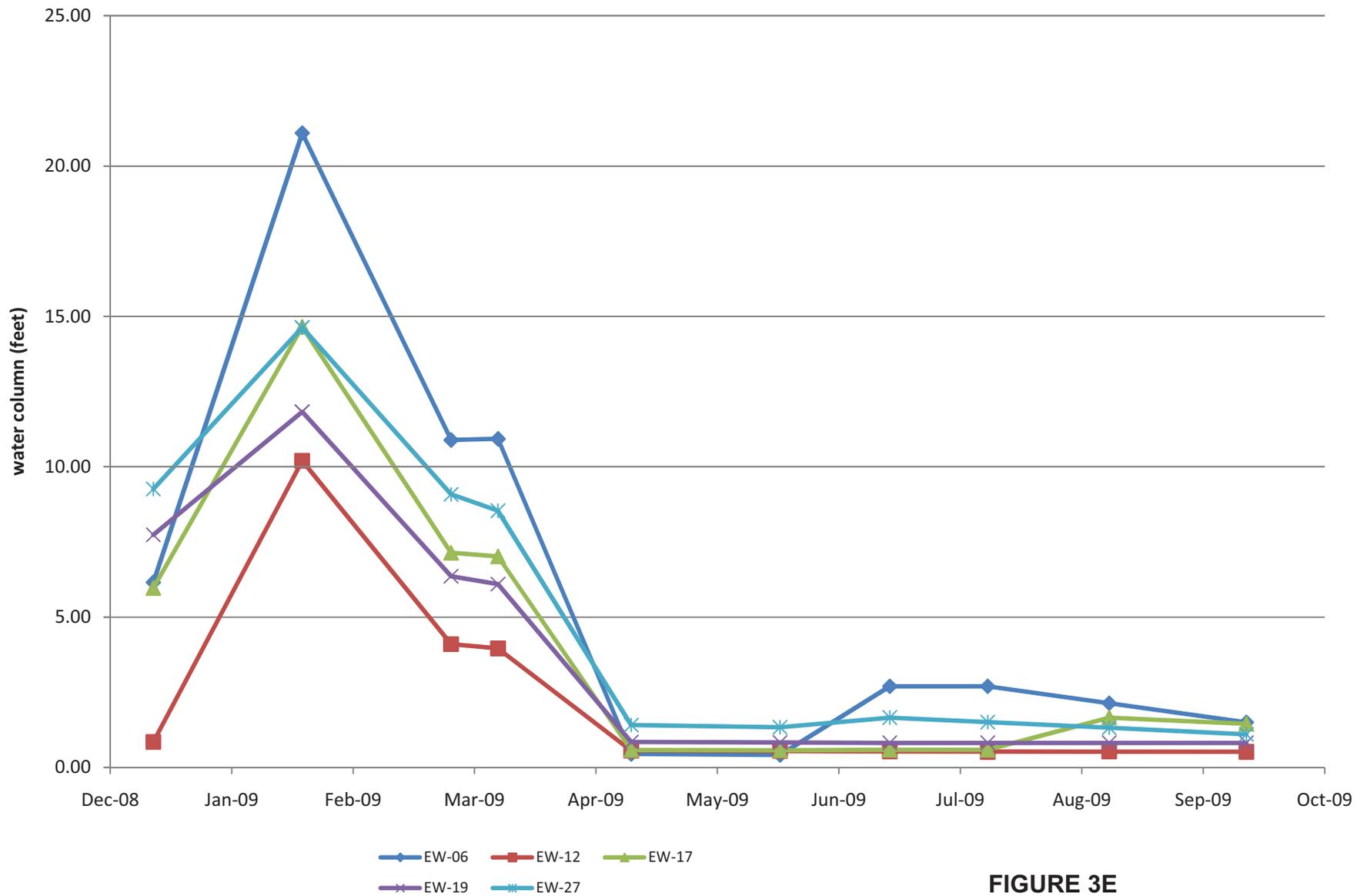
FIGURE 3C
MONTHLY WATER COLUMN
HEIGHT FOR SVE-ONLY WELLS
HEADER 5
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII



Note: Active SVE on header 6 between July 2008 and March 2009. SVE deactivated on March 10, 2009.

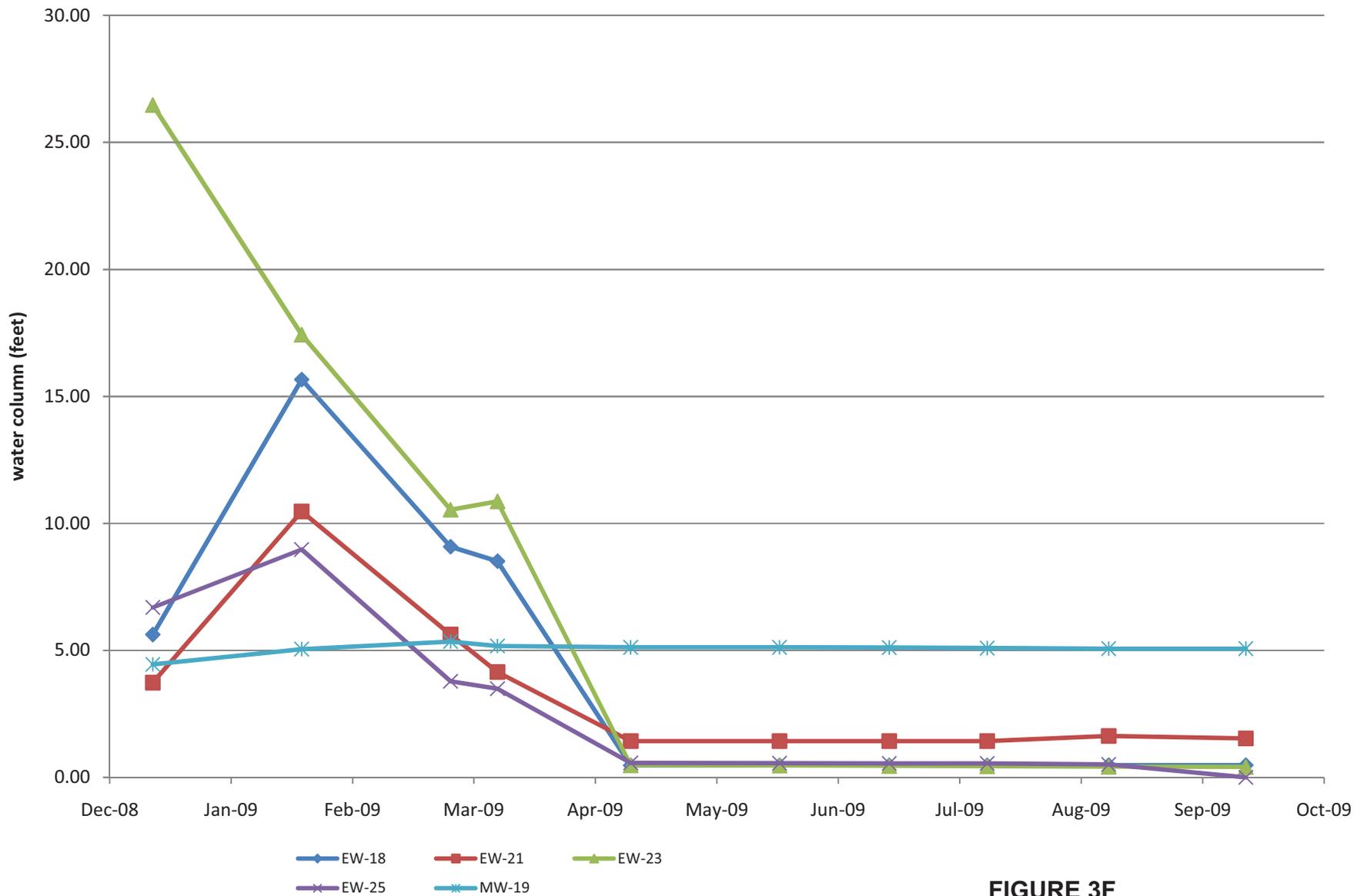
FIGURE 3D
MONTHLY WATER COLUMN
HEIGHT FOR SVE-ONLY WELLS
HEADER 6

FIVE-YEAR REVIEW REPORT FOR DEL MONTE CORPORATION OAHU PLANTATION SUPERFUND SITE, KUNIA, HAWAII



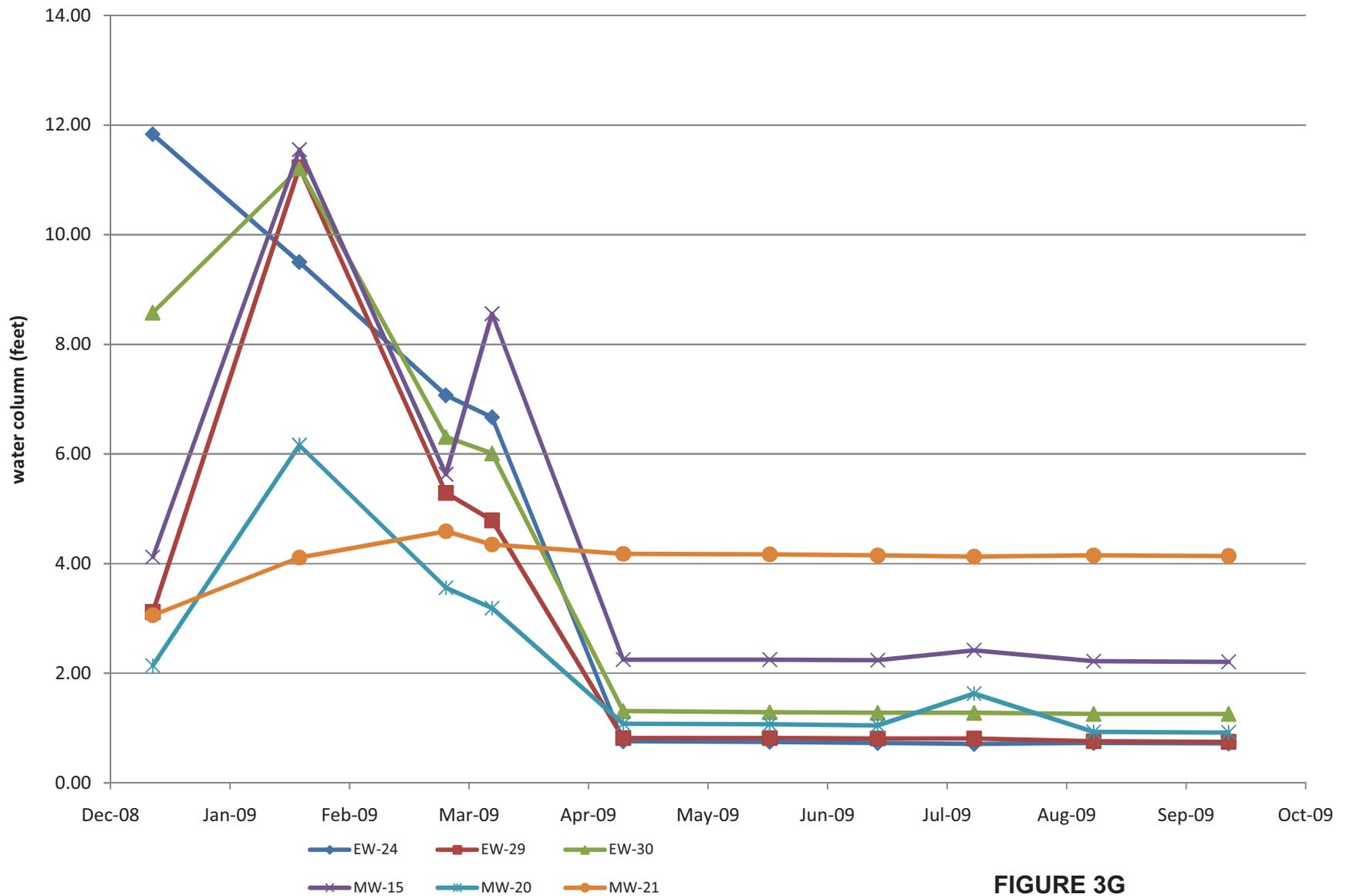
Note: Active SVE on header 7 between June 2008 and March 2009. SVE deactivated on March 10, 2009.

FIGURE 3E
MONTHLY WATER COLUMN
HEIGHT FOR SVE-ONLY WELLS
HEADER 7
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII



Note: Active SVE on header 8 between June 2008 and March 2009. SVE deactivated on March 10, 2009.

FIGURE 3F
MONTHLY WATER COLUMN
HEIGHT FOR SVE-ONLY WELLS
HEADER 8
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII



Note: Active SVE on header 9 between June 2008 and March 2009. SVE deactivated on March 10, 2009.

FIGURE 3G
MONTHLY WATER COLUMN
HEIGHT FOR SVE-ONLY WELLS
HEADER 9
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII

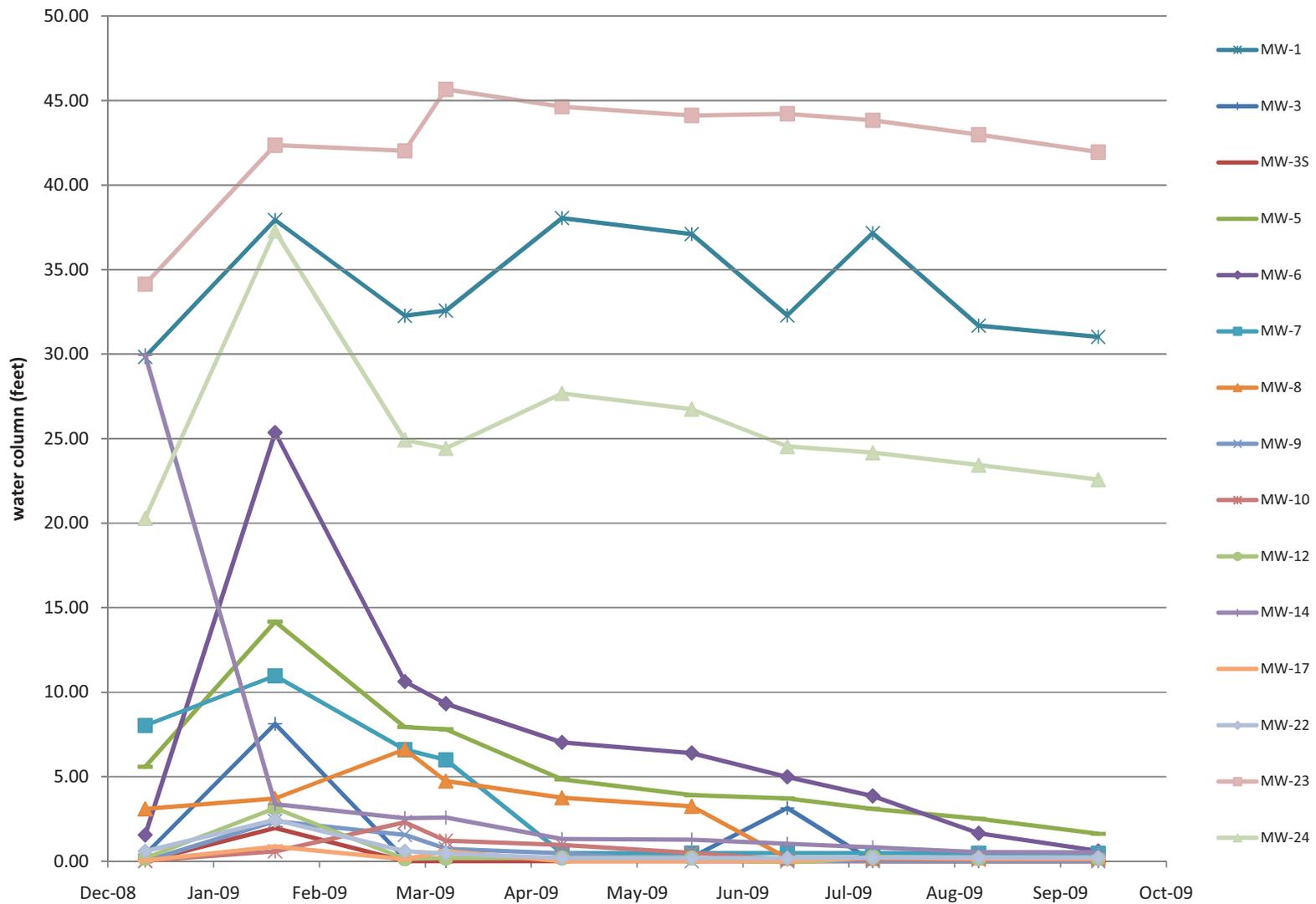
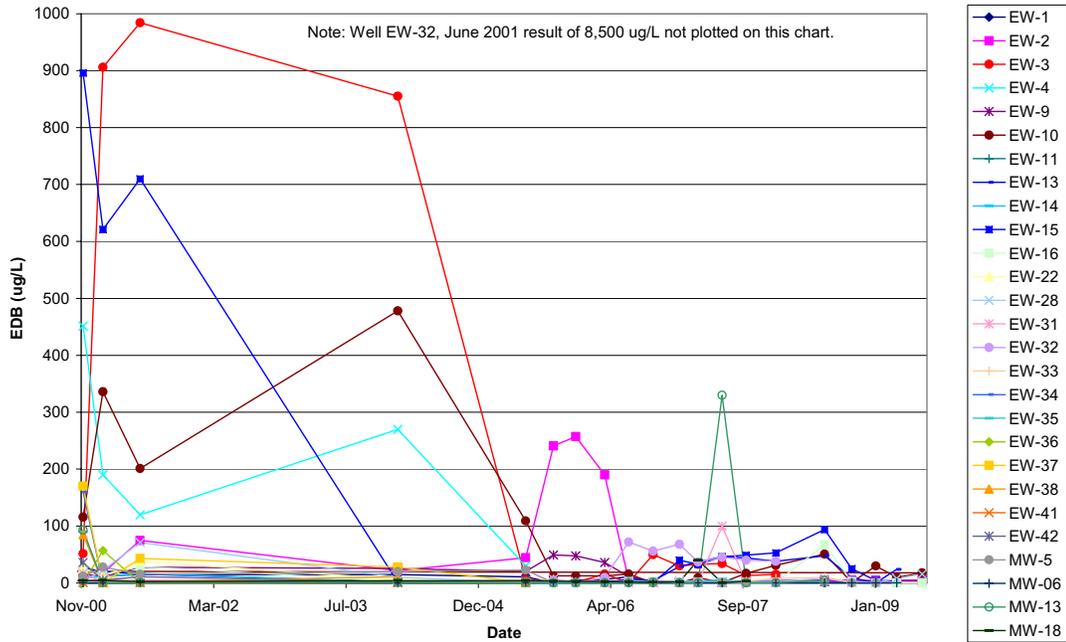
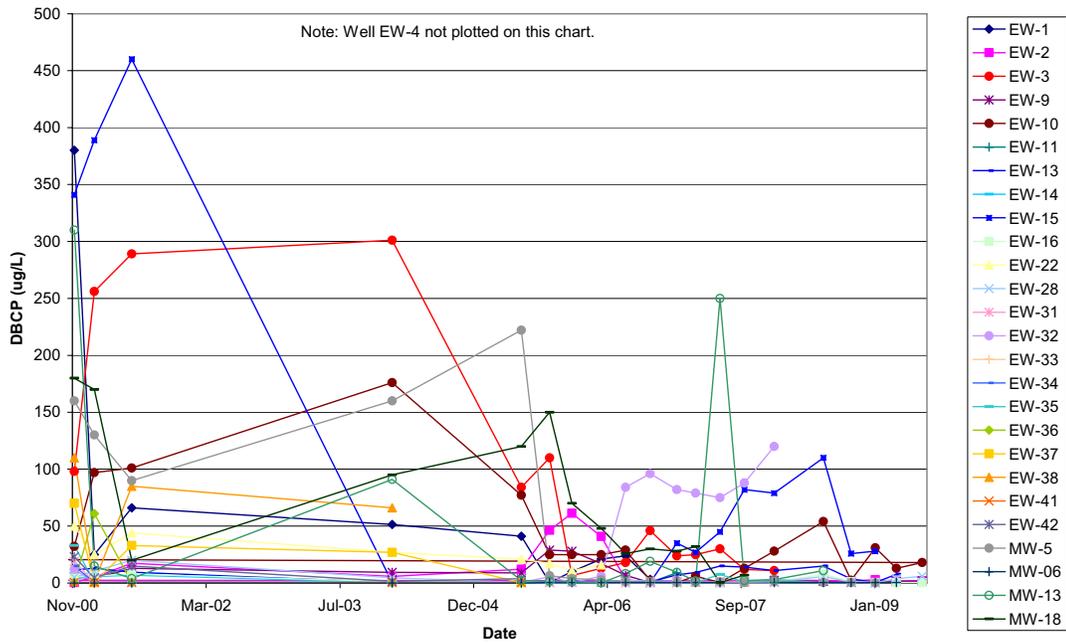


FIGURE 3H
MONTHLY WATER COLUMN
HEIGHT FOR PERCHED
MONITORING WELLS
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII

EDB Concentrations Perched Aquifer Wells

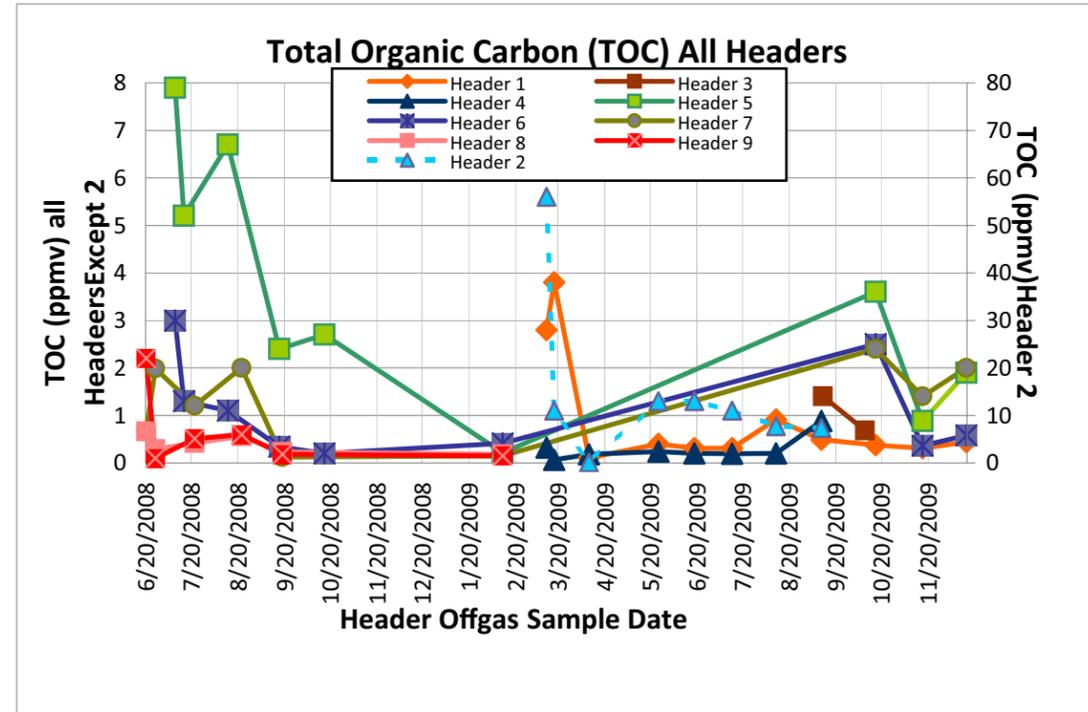
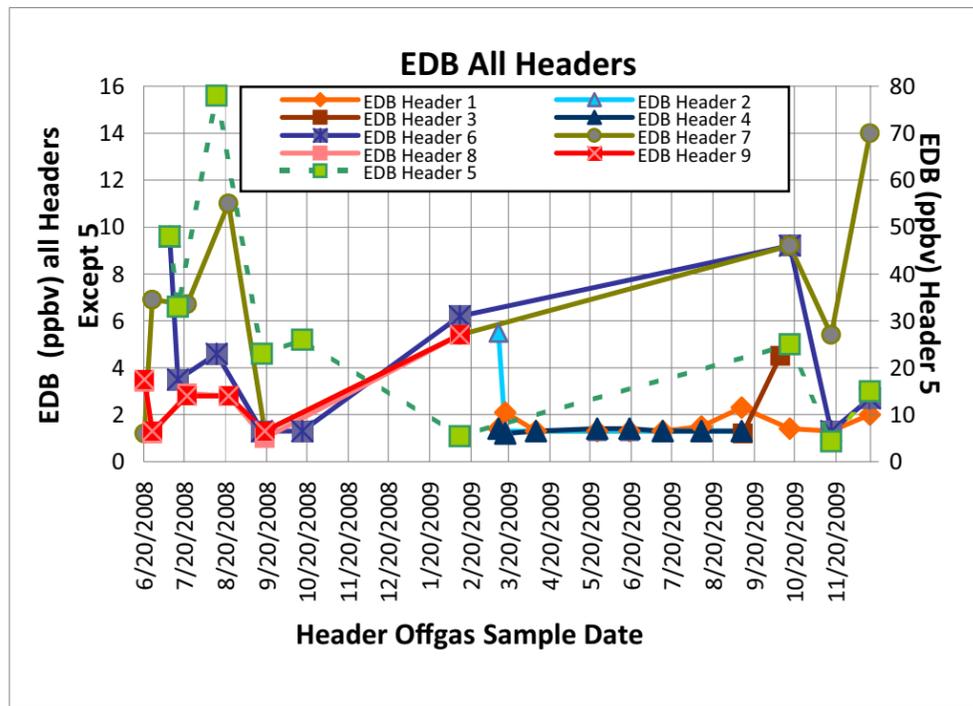
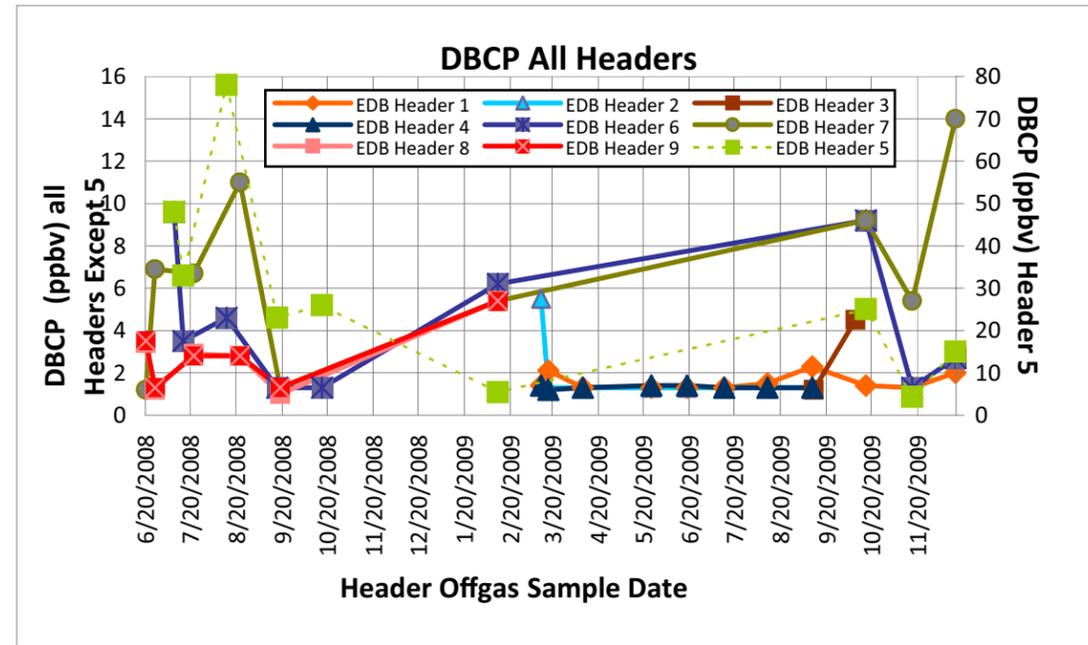
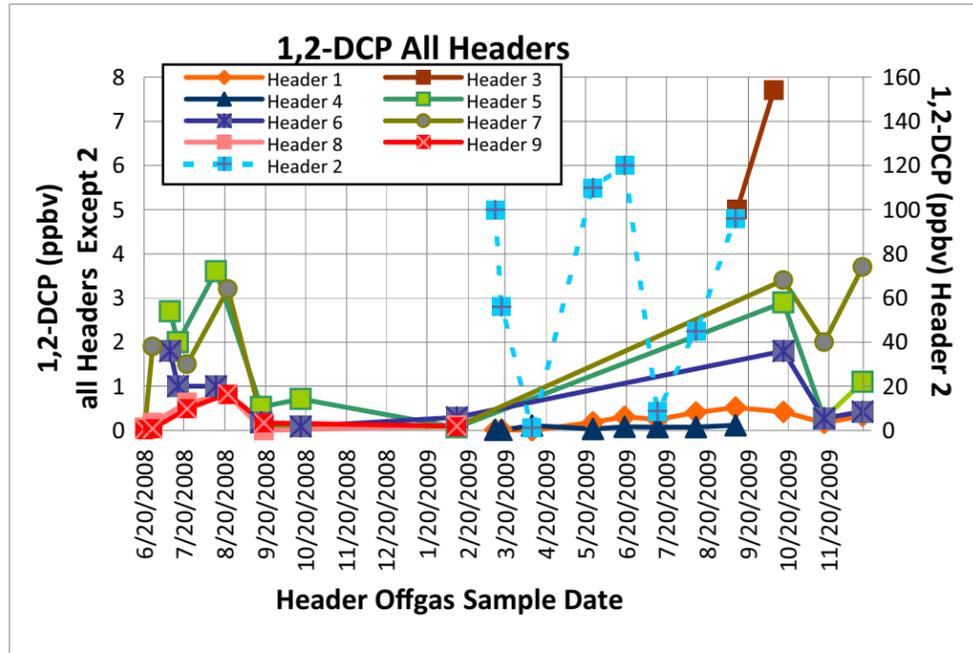


DBCP Concentrations Perched Aquifer Wells



DBCP = dibromochloropropane, EDB = ethylene dibromide.

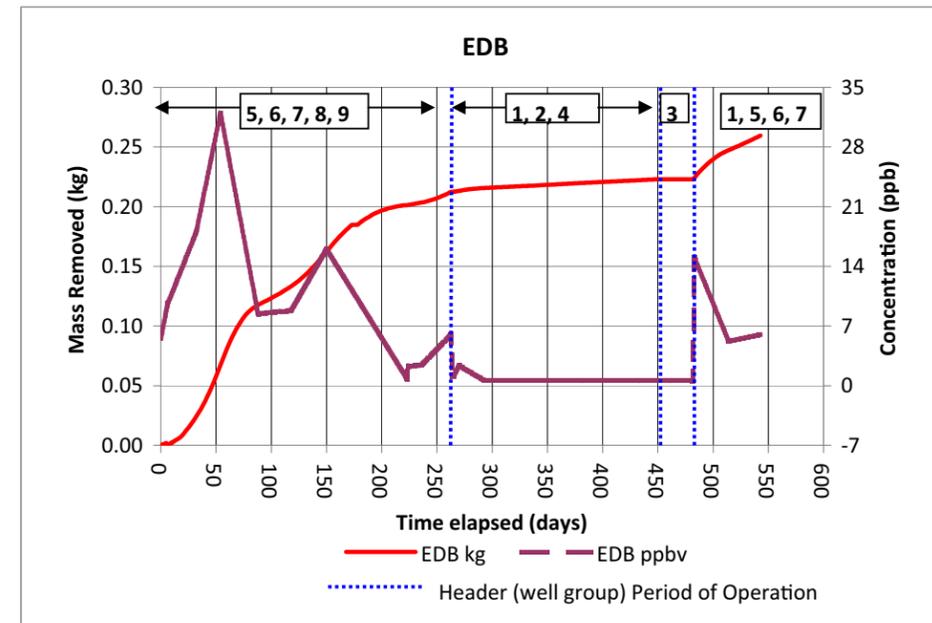
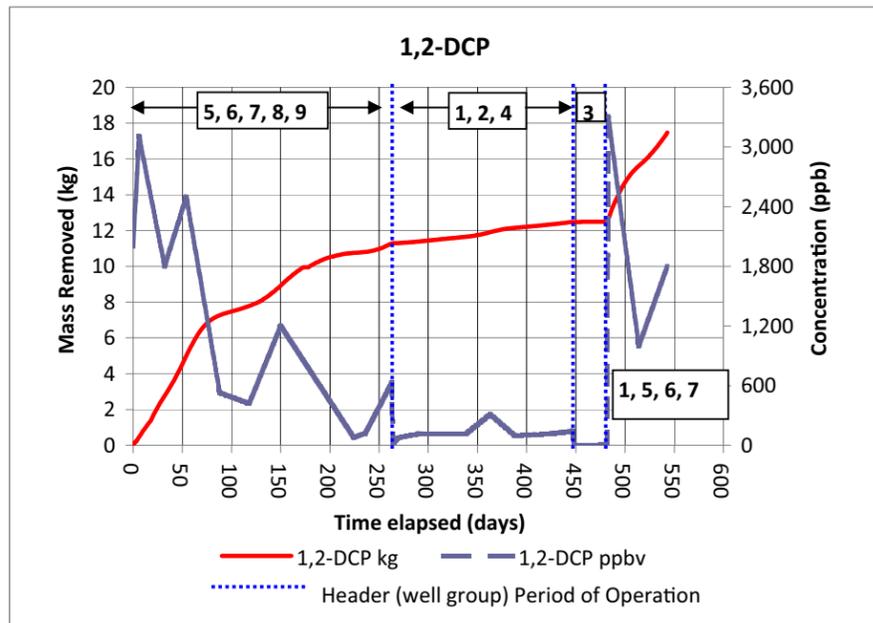
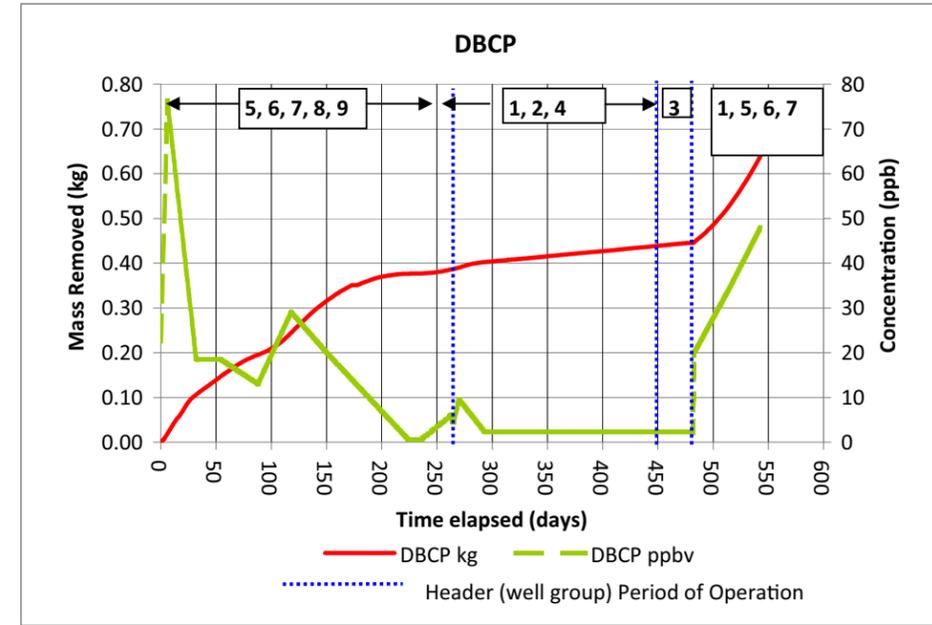
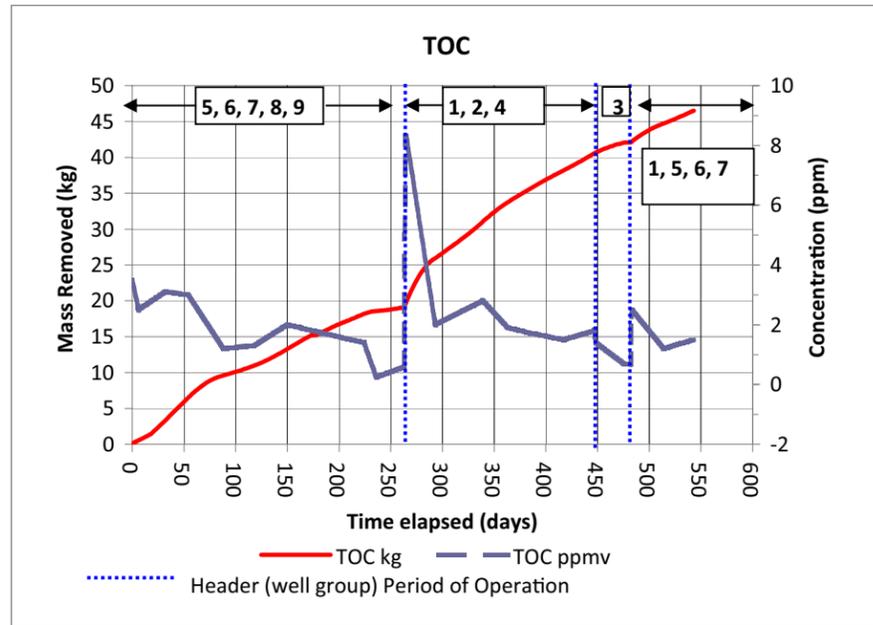
FIGURE 4
EDB AND DBCP CONCENTRATION
TRENDS IN PERCHED WELLS
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII



Note:

- 1) Headers 5, 6, 7, 8 and 9 were operated June/July 08 (startup) through March 10, 2009.
- 2) Headers 1, 2, and 4 were operated (startup) February 09 through September 09.
- 3) Header 3 was operated September 09 (startup).
- 4) Headers 1, 5, 6, and 7 were operated October 09 through December 09. This was the first time rebound from inoperation of previously activated headers could be observed.
- 5) 1,2-DCP = 1,2-dichloropropane, DBCP = dibromochloropropane, EDB = ethylene dibromide, ppmv = parts per million by volume, ppbv, parts per million by volume.

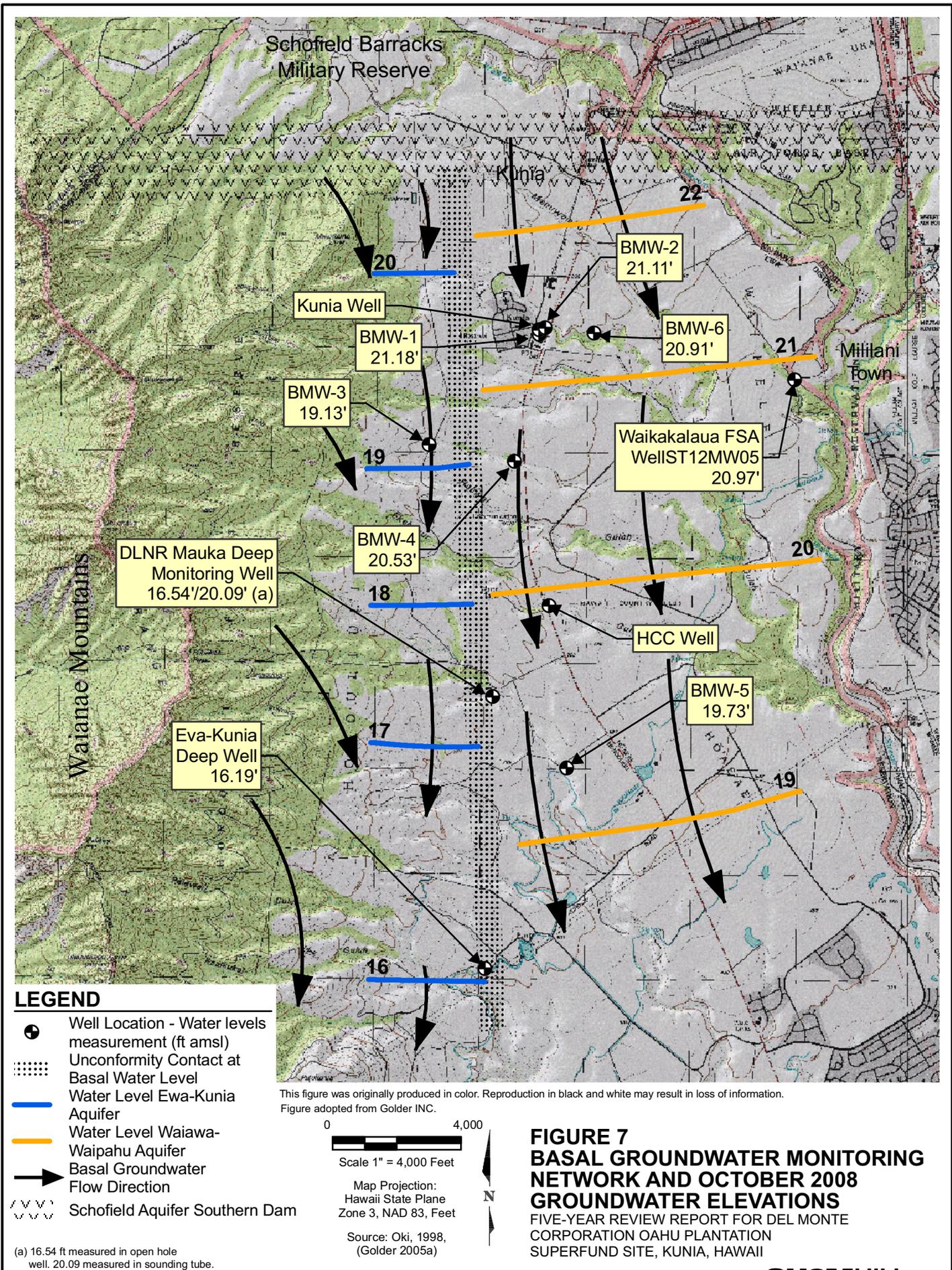
FIGURE 5
COC CONCENTRATIONS WITHIN
INDIVIDUAL SVE HEADERS
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII



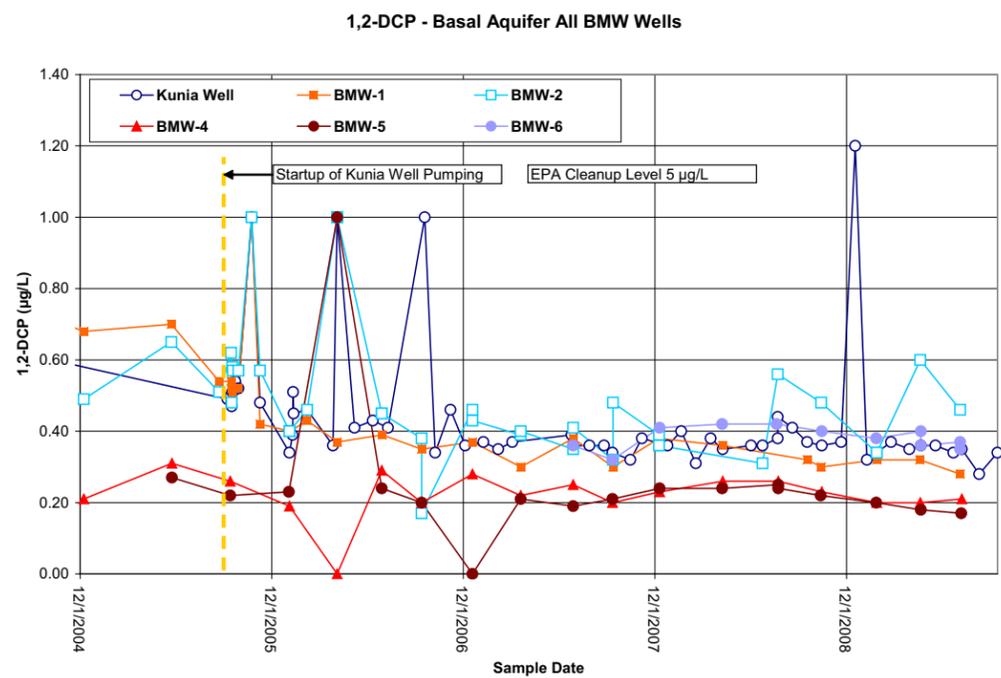
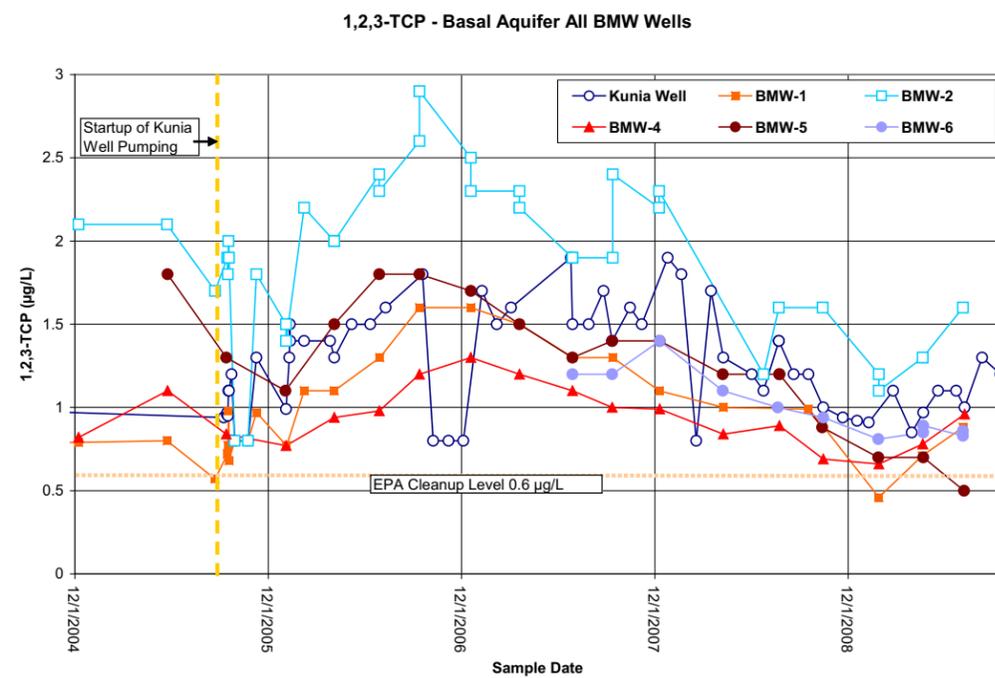
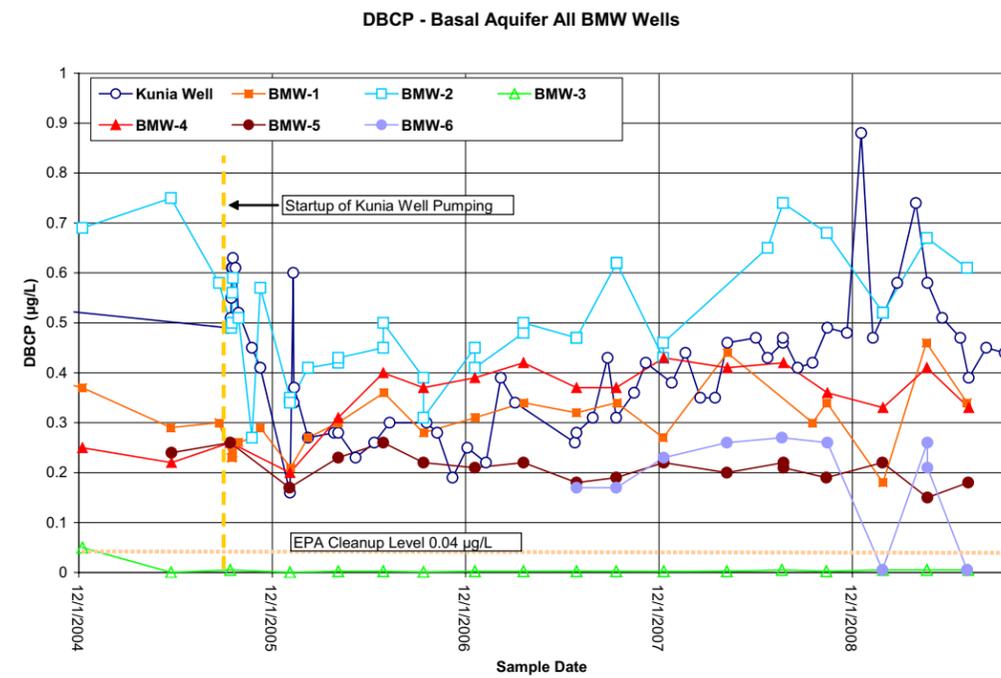
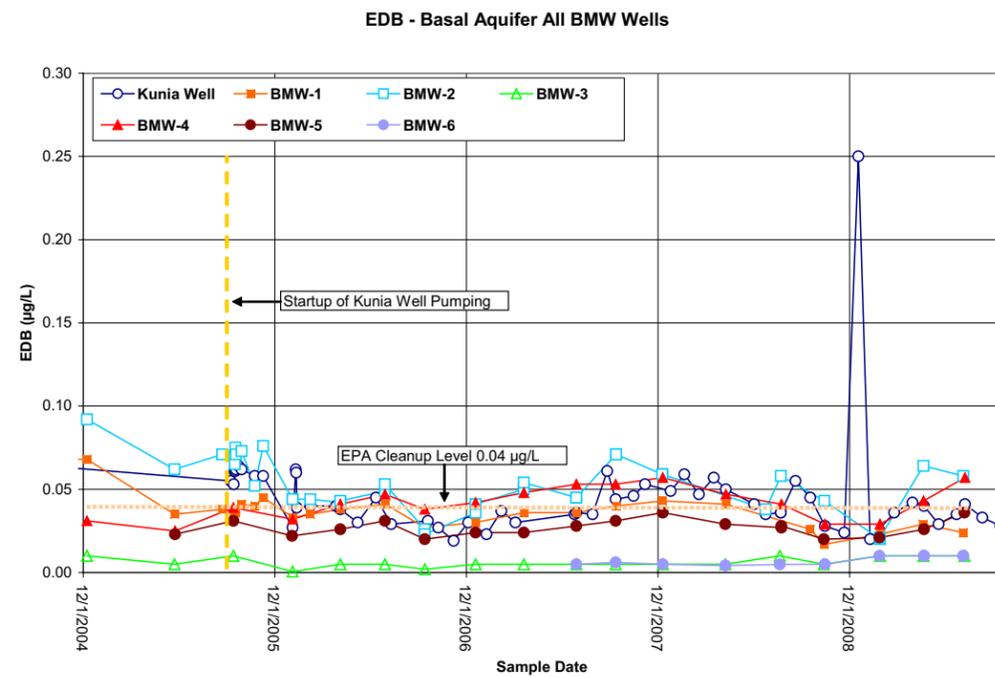
Note:

1. SVE initiated Day 0 on headers 7, 8, and 9. Headers 5 and 6 brought online on Day 8. These headers required additional dewatering of Perched Aquifer before startup.
2. SVE switched to headers 1, 2, and 4 on Day 263, after mass removal appeared to be diminishing with headers 5, 6, 7, 8, and 9 online.
3. SVE switched to header 3 on Day 447 for 1-month trial period. Operation of header 3 with other headers is not possible due to higher permeability backfill soil in this area.
4. SVE switched to headers 1, 5, 6, and 7 on Day 482.
5. At day 482, startup and testing of all 9 headers was completed.
6. Switching to first operation of headers 1, 5, 6, and 7 (day 482) is the first opportunity to observe the potential for rebound with cycling of headers.
7. 1,2-DCP = 1,2-dichloropropane, DBCP = dibromochloropropane, EDB = ethylene dibromide, ppmv = parts per million by volume, ppbv, parts per million by volume.

FIGURE 6
COMBINED CONCENTRATION
AND CUMULATIVE COC MASS
REMOVED BY SVE
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII



(a) 16.54 ft measured in open hole well. 20.09 measured in sounding tube.



Note: 1,2-DCP = 1,2-dichloropropane, DBCP = dibromochloropropane, 1,2,3-TCP = 1,2,3 trichloropropane, EDB = ethylene dibromide, µg/L = micrograms per liter.

FIGURE 8
COC CONCENTRATIONS WITHIN THE KUNIA AND
KOOLAU BASALT BASAL AQUIFER WELLS
 FIVE-YEAR REVIEW REPORT FOR DEL MONTE
 CORPORATION OAHU PLANTATION
 SUPERFUND SITE, KUNIA, HAWAII

Appendix E
Institutional Controls Evaluation
Memorandum

Del Monte (Oahu Plantation) Superfund Site 5-Year Review

Institutional Controls Evaluation

PREPARED FOR: United States Environmental Protection Agency (EPA), Region IX

PREPARED BY: CH2M HILL

DATE: March 10, 2010

Institutional controls (ICs) are non-engineered methods, such as administrative or legal controls, by which public access to contaminated environmental media is restricted. This technical memorandum summarizes the results of an evaluation of ICs for the Del Monte (Oahu Plantation) Superfund Site (the Del Monte Site, or the Site) located in Kunia, Hawaii.

Background

A Record of Decision (ROD) was issued for the Del Monte Site in September 2003. In addition to institutional controls, the U.S. Environmental Protection Agency (EPA) has selected two active remediation remedies to address soil and groundwater contamination:

- Remediation of shallow groundwater (perched aquifer) and contaminated subsurface soil in the Kunia Village Source Area from approximately 20 feet below ground surface (bgs) to 100 feet bgs by dewatering of the perched aquifer through groundwater extraction, implementing soil vapor extraction (SVE), and minimizing perched groundwater recharge through a vegetated cover and stormwater diversion system.
- Remediation of deep groundwater (basal aquifer) by phased pump and treat, starting at the Kunia Well, with contingent monitored natural attenuation (MNA).

Institutional controls, in the form of land and/or water use restrictions, are an integral part of each of these components of the remedial action in order to prevent any exposure of the public to contaminants at the Site while cleanup levels have not been achieved, as well as to prevent any interference with any aspect of the remedial action. ICs of access and deed restrictions were included as part of the remedies. It should be noted that actual access controls such as fences and "No Trespassing" signage are considered physical controls and should be categorized as engineering controls. Therefore, the only true institutional controls from the ROD are the deed restrictions.

A Consent Decree was lodged on June 8, 2007 (EPA, 2007) that requires monitoring of institutional controls at the site to verify that property owners and lessees have not undertaken any construction in the source area or the well restriction area that has damaged or interfered with basal groundwater monitoring or extraction wells. Following is the summary of the ICs in the Consent Decree:

Restrictions to the Source Area:

- The Source Area shall not be used in any manner that causes a threat to public health. Until Certification of Completion of the Work by EPA, the Source Area can not be used or redeveloped for residential use; used as a hospital, school for people aged 21 and under, or day care center; or other uses by sensitive receptors, as defined by EPA's risk assessment.
- Construction is not permitted on the Source Area that damages or interferes with any equipment or other components of the Remedy for the Perched Aquifer and Deep Soils, including the vegetative soil cap, groundwater extraction and monitoring wells and conveyance pipelines, the soil vapor extraction system, the phytoremediation treatment units and the basal groundwater treatment system.

Restrictions to the Well Restriction Area (Refer to Figures in Attachment 2):

- Prior to Certification of Completion of the Work by EPA, an application cannot be filed for a Water-Use Permit to draw water from a well located in the Well Restriction Area without prior written approval of EPA. The owner shall notify EPA as well as the Hawaii Commission on Water Resource Management and shall file an objection to the issuance of a Water-Use Permit with the Water Resource Management Commission.
- Prior to Certification of Completion of the Work by EPA, construction is not permitted in the Well Restriction Area that damages or interferes with any equipment or other components of the Remedy for the Basal Aquifer, including the groundwater monitoring wells.
- In order to assist EPA in monitoring the effectiveness of the institutional controls at the Site, an Institutional Controls Annual Report will be submitted annually to EPA.
- Prior written approval of EPA is needed for modification of institutional controls in the Consent Decree, including modification to the boundaries of the Site or Well Restriction Area or the Source Area.

The former property owner, James Campbell Company LLC (JCC), prepared Institutional Controls Annual Reports for 2008 and 2009 (LFR, 2009a and 2009b) to demonstrate to EPA that the new property owners and lessees are complying with the requirements of the Consent Decree. A summary of the findings of the Institutional Controls Annual Reports and recent developments (JCC, 2008a; 2008b; 2009) follows (refer to the figures in Attachment 2 for section map):

- Hawaii Agricultural Research Center (HARC) purchased the Kunia village on November 17, 2009.
- Army Hawaii Family Housing, LLC purchased Sections 7 and 9 on December 10, 2008.
- Kunia Agricultural Park purchased Section 8 on January 23, 2008.
- Syngenta Hawaii, LLC purchased Section 6 on September 3, 2008.
- No applications for well installation or water use permits within the well restriction area have been submitted in the last two years.

- The perched and basal aquifer remediation systems are intact and operational and no construction or other activities have interfered with the functioning of the basal monitoring wells.

During sale of portions of the Del Monte Superfund site, Limited Warranty Deeds with Covenants and Reservation of Rights were agreed upon by JCC and the new owners. Among other agreements, drainage issues were addressed which included development of property to accept drainage from upslope lands and to avoid damage to adjoining lands from surface water runoff.

This is the first five-year review for the Site since the ROD was issued in 2003 (EPA, 2003). As part of this five-year review, title reports were obtained for the Site. The title reports identify the site as Tax Map keys 9-2-004 (parcels 001, 003, 005, 006), 9-2-005 (parcels 001 and 002), and 9-4-004-005. Declaration of Environmental Restrictions (Well Restriction Area) and Declaration of Covenants regarding Water Allocation and Easements are properly recorded as evidenced from the reports (Attachment 1). Prohibited use and activities include, but are not restricted to, application for permit to withdraw water from a well in the well restricted area without prior EPA approval, and construction in the well restriction area that damages components of the remedy. The restrictions set forth in the declaration run with the property and are binding on all occupants. Attachment 1 presents detailed title reports for each parcel including Declaration of Environmental Restrictions.

Based upon review of various documents, interviews with key personnel and the site inspection, it appears that the institutional controls, as well as the engineered controls, are currently functioning as intended.

The title reports and declarations are included as Attachment 1. A Well Restriction Area Map and a Section Map are included as Attachment 2.

Deficiencies and Recommendations

There are no known deficiencies related to the institutional controls set forth in the ROD for the Del Monte Site. The institutional controls remain protective of human health and the environment.

References

- James Campbell Company LLC (JCC). 2008a. Letter to United States Environmental Protection Agency for purchase of Section 8 by Kunia Agricultural Park *Re: Institutional Controls consent Decree for the Del Monte Superfund Site, Civil Action no: CV-07-00308*. June 6.
- James Campbell Company LLC (JCC). 2008b. Letter to United States Environmental Protection Agency for purchase of Section 6 by Syngenta Hawaii, LLC *Re: Institutional Controls Consent Decree for the Del Monte Superfund Site, Civil Action no: CV-07-00308*. September 15.

James Campbell Company LLC (JCC). 2009. Letter to United States Environmental Protection Agency for purchase of Kunia village by Hawaii Agricultural Research Center *Re: Institutional Controls Consent Decree for the Del Monte Superfund Site, Civil Action no: CV-07-00308*. December 4.

LFR Inc. 2009a. *2008 Institutional Controls Annual Report, Del Monte Pineapple Plantation Superfund Site, Kunia, Oahu, Hawaii*. March 6.

LFR Inc. 2009b. *2009 Institutional Controls Annual Report, Del Monte Pineapple Plantation Superfund Site, Kunia, Oahu, Hawaii*. October 14.

United States Environmental Protection Agency (EPA). 2003. *Record of Decision, Del Monte Corporation, Oahu Plantation Superfund Site, Kunia, Hawaii*. September

United States Environmental Protection Agency (EPA). 2007. *Consent Decree. United States of America v. James Campbell Company, LLC*. Lodged June 8, 2007.

Attachment 1
Title Reports

STATUS REPORT

Maximum liability limited to
\$3,500.00

This report (and any revisions thereto) is issued solely for the convenience of the titleholder, the titleholder's agent, counsel, purchaser or mortgagee, or the person ordering it.

SCHEDULE A

Title Guaranty of Hawaii, Incorporated, hereby reports that, subject to those matters set forth in Schedule "B" hereof, the title to the estate or interest to the land described in Schedule "C" hereof is vested in:

SYNGENTA HAWAII, LLC,
a Hawaii limited liability company,
as to LOT 881,
and
FAT LAW'S FARM, INC.,
a Hawaii corporation,
as to an undivided 60% interest,
LAW TIENG'S FARM LLC,
a Hawaii limited liability company,
as to an undivided 20% interest,
TONY TAN LAW and
MANYVONE LAW,
husband and wife,
as Tenants by the Entirety,
as to an undivided 10% interest, and
HAE VIENGGKHOU and
PHOUANGPHET VIENGGKHOU,
husband and wife,
as Tenants by the Entirety,
as to an undivided 10% interest,
as to LOT 882-A,
as Fee Owner

SCHEDULE A CONTINUED

This report is dated as of February 5, 2010 at 8:00 a.m.

Inquiries concerning this report
should be directed to
OFELIA LOPEZ.
Email olopez@tghawaii.com
Fax (808) 521-0210
Telephone (808) 533-5831.
Refer to Order No. 201004417B.

**SCHEDULE B
EXCEPTIONS**

1. Real Property Taxes, if any, that may be due and owing.

-Parcel First (LOT 881):- is(are) covered by Tax Key: (1) 9-2-004-011.

-Parcel Second (LOT 882-A):- is(are) covered by Tax Key: (1) 9-2-004-010.

-Note:- Attention is invited to the fact that the premises covered herein may be subject to possible rollback or retroactive property taxes.

2. -AS TO PARCEL FIRST (LOT 881):-

(A) Any rights or interests which may exist or arise by reason of the following facts shown on survey map prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying LLC, dated January 16, 2007:

Barb wire fence crosses into subject lot and adjoining lot, ownership unknown.

(B) Any claim or boundary dispute which may exist or arise by reason of the failure of the GRANT OF NONEXCLUSIVE EASEMENTS (ACCESS, WATERLINE AND OTHER UTILITY PURPOSES) dated September 3, 2008, filed as Land Court Document No. 3785832, referred to in Schedule C, to locate with certainty the boundaries of the easement area which is approximately one hundred fifteen (115) feet wide extending approximately fifty-seven and one-half (57-1/2) feet on each side of the centerline graphically shown on Exhibit A attached thereto, described in said instrument.

3. -AS TO PARCEL SECOND (LOT 882-A):-

(A) DESIGNATION OF EASEMENT "49" (40 feet wide)

SHOWN : on Map 10, as set forth by Land Court Order No. 4113, filed August 5, 1940

SCHEDULE B CONTINUED

Said Easement "49" was amended by Land Court Order No. [17969](#), filed April 1, 1960, to reduce the width from 40 feet to 30 feet.

(B) Water rights, claims or title to water, whether or not shown by the public records.

(C) Encroachments or any other matters as shown on survey map prepared by KEVIN K. KEA, Land Surveyor, with Ace Land Surveying LLC, dated December 11, 2007.

(D) The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF SITE ACCESS; JOINDER

DATED : _____, 2007
FILED : Land Court Document No. [3676945](#)
RECORDED : Document No. [2007-193800](#)

(E) The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF ENVIRONMENTAL RESTRICTIONS
(WELL RESTRICTION AREA); JOINDER

DATED : _____, 2007
FILED : Land Court Document No. [3676946](#)
RECORDED : Document No. [2007-193801](#)

(F) Unrecorded leases described below and matters arising from or affecting the same:

(a) Lease of Right of Way dated December 8, 1937, in favor of Hawaiian Electric Company Inc. (Easement No. E00782800), the term of which is month to month, subject to earlier termination pursuant to terms thereof.

SCHEDULE B CONTINUED

(b) Access in favor of The Nature Conservancy, as set forth in unrecorded lease dated April 18, 1990 (Lease No. L00758700), as amended, the term of which expires on April 18, 2020, subject to earlier termination pursuant to the terms thereof, affecting Easement "49".

(G) The terms and provisions contained in the following:

INSTRUMENT : LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

DATED : as of January 23, 2008

FILED : Land Court Document No. [3704219](#)

(H) REAL PROPERTY MORTGAGE; SECURITY AGREEMENT; ASSIGNMENT OF RENTS AND FINANCING STATEMENT

MORTGAGOR : FAT LAW'S FARM, INC., a Hawaii corporation, LAW TIENG'S FARM LLC, a Hawaii limited liability company, TONY TAN LAW and MANYVONE LAW, husband and wife, and HAE (NMN) VIENGKHOU and PHOUANGPHET (NMN) VIENGKHOU, husband and wife

MORTGAGEE : BRIDGEVIEW CAPITAL SOLUTIONS, L.L.C., a Delaware limited liability company

DATED : January 23, 2008

FILED : Land Court Document No. [3704221](#)

AMOUNT : \$3,954,000.00

(I) FINANCING STATEMENT

DEBTOR : LAW TIENG'S FARM LLC, a Hawaii limited liability company, FAT LAW'S FARM, INC., a Hawaii for profit corporation, TONY TAN LAW, MANYVONE LAW, HAE VIENGKHOU and PHOUANGPHET VIENGKHOU

SECURED

PARTY : BRIDGEVIEW CAPITAL SOLUTIONS, L.L.C.

SCHEDULE B CONTINUED

RECORDED : Document No. [2008-009772](#)
RECORDED ON: January 23, 2008

(J) FINANCING STATEMENT

DEBTOR : LAW TIENG'S FARM LLC, a Hawaii limited liability company, FAT LAW'S FARM, INC., a Hawaii for profit corporation, TONY TAN LAW, MANYVONE LAW, HAE VIENGKHOU and PHOUANGPHET VIENGKHOU

SECURED PARTY : BRIDGEVIEW CAPITAL SOLUTIONS, L.L.C.

RECORDED : Document No. [2008-009773](#)
RECORDED ON: January 23, 2008

(K) MORTGAGE

MORTGAGOR : FAT LAW'S FARM, INC., a Hawaii corporation, LAW TIENG'S FARM LLC, a Hawaii limited liability company, TONY TAN LAW and MANYVONE LAW, husband and wife, and HAE VIENGKHOU and PHOUANGPHET VIENGKHOU, husband and wife

MORTGAGEE : AMERICAN FARM MORTGAGE COMPANY, INC., a Tennessee corporation

DATED : January 23, 2008
FILED : Land Court Document No. [3704222](#)
AMOUNT : \$3,596,000.00

(L) FINANCING STATEMENT

DEBTOR : FAT LAW'S FARM, INC.; LAW TIENG'S FARM LLC; TONY LAW; MANYVONE LAW; HAE VIENGKHOU; PHOUANGPHET VIENGKHOU

SECURED PARTY : AMERICAN FARM MORTGAGE COMPANY, INC.

RECORDED : Document No. [2008-010732](#)
RECORDED ON: January 24, 2008

SCHEDULE B CONTINUED

(M) FINANCING STATEMENT

DEBTOR : FAT LAW'S FARM, INC.; LAW TIENG'S FARM LLC;
TONY LAW; MANYVONE LAW; HAE VIENGGKHOU;
PHOUANGPHET VIENGGKHOU

SECURED
PARTY : AMERICAN FARM MORTGAGE COMPANY, LLC

RECORDED : Document No. [2008-010733](#)
RECORDED ON: January 24, 2008

(N) GRANT

TO : SYNGENTA HAWAII, LLC, a Hawaii limited
liability company

DATED : September 3, 2008
FILED : Land Court Document No. [3785841](#)
GRANTING : the right, in the nature of a nonexclusive
easement for waterline easement (25 feet wide)

(O) GRANT

TO : GILL-OLSON JOINT VENTURE, a Hawaii Joint
Venture

DATED : September 30, 2009
FILED : Land Court Document No. [3903238](#)
GRANTING : the right, in the nature of a nonexclusive
easement over said Easement "49" for access
and utility purposes

(P) GRANT

TO : EDMUND C. OLSON, as Trustee of the Edmund C.
Olson Trust No. 2 under agreement dated August
21, 1985

DATED : September 30, 2009
FILED : Land Court Document No. [3903244](#)

SCHEDULE B CONTINUED

GRANTING : the right, in the nature of a nonexclusive
easement over said Easement "49" for access
and utility purposes

(Q) GRANT

TO : THE TRUST FOR PUBLIC LAND, a California
nonprofit public benefit corporation

DATED : September 30, 2009

FILED : Land Court Document No. [3903248](#)

GRANTING : the right, in the nature of a nonexclusive
easement over said Easement "49" for access
and utility purposes

(R) TAX LIEN

BY : UNITED STATES OF AMERICA, DEPARTMENT OF
TREASURY, INTERNAL REVENUE SERVICE

AGAINST : LAW TIENG'S FARM LLC | JOHNSON CHOI

DATED : December 17, 2009

RECORDED : Document No. [2009-196907](#)

AMOUNT : \$11,771.97

4. The terms and provisions contained in the following:

INSTRUMENT : TRUSTEES LIMITED WARRANTY DEED

DATED : November 1, 2006

FILED : Land Court Document No. [3505988](#)

RECORDED : Document No. [2006-198463](#)

SCHEDULE B CONTINUED

5. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF COVENANTS REGARDING WATER ALLOCATION
AND EASEMENTS

DATED : December 13, 2007
FILED : Land Court Document No. [3694441](#)
RECORDED : Document No. [2007-219110](#)

Said Declaration amended and restated in its entirety by
instrument dated August 21, 2008, filed as Land Court Document
No. [3782044](#), and recorded as Document No. [2008-133157](#).

6. The terms and provisions contained in the following:

INSTRUMENT : LIMITED WARRANTY DEED WITH COVENANTS AND
RESERVATION OF RIGHTS

DATED : September 3, 2008
FILED : Land Court Document No. [3785831](#)

7. Claims arising out of customary and traditional rights and
practices, including without limitation those exercised for
subsistence, cultural, religious, access or gathering purposes,
as provided for in the Hawaii Constitution or the Hawaii Revised
Statutes.

END OF SCHEDULE B

SCHEDULE C

-PARCEL FIRST:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT 881, area 11.129 acres, more or less, as shown on Map [110](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased;

Together with access over Lots 878 and L, as set forth by Land Court Order No. [17936](#), filed March 17, 1960;

Being the land(s) described in Transfer Certificate of Title No. 921,365 issued to SYNGENTA HAWAII, LLC, a Hawaii limited liability company.

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

GRANTOR : JAMES CAMPBELL COMPANY LLC, a Delaware limited liability company

GRANTEE : SYNGENTA HAWAII, LLC, a Hawaii limited liability company

DATED : September 3, 2008

FILED : Land Court Document No. [3785831](#)

Together with a nonexclusive easement for vehicular and pedestrian access to and from Kunia Road (a public highway) and for waterline and other utility purposes, as granted by GRANT OF NONEXCLUSIVE EASEMENTS (ACCESS, WATERLINE AND OTHER UTILITY PURPOSES) dated September 3, 2008, filed as Land Court Document No. [3785832](#); and subject to the terms and provisions contained therein. Said easement over an easement area approximately one hundred fifteen (115) feet wide extending approximately fifty-seven and one-half (57 1/2) feet on each side of the center line graphically shown on Exhibit A attached thereto, and located within the land described in Exhibit B attached thereto.

SCHEDULE C CONTINUED

-PARCEL SECOND:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT 882-A, area 425.963 acres, more or less, as shown on Map [110](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased;

Being the lands(s) described in Transfer Certificate of Title No. 892,761 issued to FAT LAW'S FARM, INC., a Hawaii corporation, as to an undivided 60% interest, LAW TIENG'S FARM LLC, a Hawaii limited liability company, as to an undivided 20% interest, TONY TAN LAW and MANYVONE LAW, husband and wife, as Tenants by the Entirety, as to an undivided 10% interest, and HAE VIENGKHOU and PHOUANGPHET VIENGKHOU, husband and wife, as Tenants by the Entirety, as to the remaining undivided 10% interest, as Tenants in Common.

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

GRANTOR : JAMES CAMPBELL COMPANY LLC, a Delaware limited liability company

GRANTEE : FAT LAW'S FARM, INC., a Hawaii corporation, as to an undivided sixty percent (60%) interest, LAW TIENG'S FARM LLC, a Hawaii limited liability company, as to an undivided twenty percent (20%) interest, TONY TAN LAW and MANYVONE LAW, husband and wife, as Tenants by the Entirety, as to an undivided ten percent (10%) interest, and HAE VIENGKHOU and PHOUANGPHET VIENGKHOU, husband and wife, as Tenants by the Entirety, as to the remaining undivided ten percent (10%) interest, as Tenants in Common

DATED : as of January 23, 2008

FILED : Land Court Document No. [3704219](#)

END OF SCHEDULE C

GENERAL NOTES

1. There is hereby omitted from any covenants, conditions and reservations contained herein any covenant or restriction based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law. Lawful restrictions under state or federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

GUIDELINES FOR THE ISSUANCE OF INSURANCE

- A. Taxes shown in Schedule B are as of the date such information is available from the taxing authority. Evidence of payment of all taxes and assessments subsequent to such date must be provided prior to recordation.
 - B. Evidence of authority regarding the execution of all documents pertaining to the transaction is required prior to recordation. This includes corporate resolutions, copies of partnership agreements, powers of attorney and trust instruments.
 - C. If an entity (corporation, partnership, limited liability company, etc.) is not registered in Hawaii, evidence of its formation and existence under the laws where such entity is formed must be presented prior to recordation.
 - D. If the transaction involves a construction loan, the following is required:
 - (1) a letter confirming that there is no construction prior to recordation; or
 - (2) if there is such construction, appropriate indemnity agreements, financial statements and other relevant information from the owner, developer, general contractor and major sub-contractors must be submitted to the Title Company for approval at least one week prior to the anticipated date of recordation.
- Forms are available upon request from Title Guaranty of Hawaii.
- E. Chapter 669, Hawaii Revised Statutes, sets forth acceptable tolerances for discrepancies in structures or improvements relative to private property boundaries for various classes of real property. If your survey map shows a position discrepancy that falls within the tolerances of Chapter 669, call your title officer as affirmative coverage may be available to insured lenders.
 - F. The right is reserved to make additional exceptions and/or requirements upon examination of all documents submitted in connection with this transaction.
 - G. If a policy of title insurance is issued, it will exclude from coverage all matters set forth in Schedule B of this report and in the printed Exclusions from Coverage contained in an ALTA policy or in the Hawaii Standard Owner's Policy, as applicable. Different forms may have different exclusions and should be reviewed. Copies of the policy forms are available upon request from Title Guaranty of Hawaii or on our website at www.tghawaii.com.

DATE PRINTED: 2/19/2010

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: SYNGENTA HAWAII LLC
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.
(1) 9 2 004 011 0000

CLASS: 5 AREA ASSESSED: 11.129 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2009

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$	0
EXEMPTION	\$	0
NET VALUE	\$	0
LAND	\$	142,600
EXEMPTION	\$	0
NET VALUE	\$	142,600
TOTAL NET VALUE	\$	142,600

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 9/30/2009

Tax Year	Installment	Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2009	2	406.41				406.41	PENDING
2009	1	406.41				406.41	PAID

Total Amount Due: 406.41

Penalty and Interest Computed to: 9/30/2009

DATE PRINTED: 2/19/2010

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: FAT LAW'S FARM INC
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.
(1) 9 2 004 010 0000

CLASS: 5 AREA ASSESSED: 425.963 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2009

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$	0
EXEMPTION	\$	0
NET VALUE	\$	0
LAND	\$	797,000
EXEMPTION	\$	0
NET VALUE	\$	797,000
TOTAL NET VALUE	\$	797,000

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 9/30/2009

Tax Year	Installment	Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2009	2	2,271.45				2,271.45	PENDING
2009	1	2,271.45	136.29	48.15		2,455.89	DELINQUENT
						Total Amount Due:	4,727.34

Penalty and Interest Computed to: 9/30/2009

STATUS REPORT

Maximum liability limited to
\$3,500.00

This report (and any revisions thereto) is issued solely for the convenience of the titleholder, the titleholder's agent, counsel, purchaser or mortgagee, or the person ordering it.

SCHEDULE A

Title Guaranty of Hawaii, Incorporated, hereby reports that, subject to those matters set forth in Schedule "B" hereof, the title to the estate or interest to the land described in Schedule "C" hereof is vested in:

SYNGENTA HAWAII, LLC,
a Hawaii limited liability company,
as Fee Owner

This report is dated as of February 5, 2010 at 8:00 a.m.

Inquiries concerning this report should be directed to OFELIA LOPEZ.
Email olopez@tghawaii.com
Fax (808) 521-0210
Telephone (808) 533-5831.
Refer to Order No. 201004417C.

**SCHEDULE B
EXCEPTIONS**

1. Real Property Taxes, if any, that may be due and owing.

Tax Key: [\(1\) 9-2-004-003](#) Area Assessed: 19.296 acres

-Note:- Attention is invited to the fact that the premises covered herein may be subject to possible rollback or retroactive property taxes.

2. The terms and provisions contained in the following:

INSTRUMENT : TRUSTEES LIMITED WARRANTY DEED

DATED : November 1, 2006

FILED : Land Court Document No. [3505988](#)

RECORDED : Document No. [2006-198463](#)

3. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF SITE ACCESS; JOINDER

DATED : --- (acknowledged October 15, 2007, October 30, 2007, and November 2, 2007)

FILED : Land Court Document No. [3676945](#)

RECORDED : Document No. [2007-193800](#)

4. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF ENVIRONMENTAL RESTRICTIONS (WELL RESTRICTION AREA)

DATED : --- (acknowledged October 15, 2007, October 30, 2007, and November 2, 2007)

FILED : Land Court Document No. [3676946](#)

RECORDED : Document No. [2007-193801](#)

SCHEDULE B CONTINUED

5. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF COVENANTS REGARDING WATER ALLOCATION
AND EASEMENTS

DATED : December 13, 2007
FILED : Land Court Document No. [3694441](#)
RECORDED : Document No. [2007-219110](#)

Said Declaration amended and restated in its entirety by
instrument dated August 21, 2008, filed as Land Court Document
No. [3782044](#), and recorded as Document No. [2008-133157](#).

6. The terms and provisions contained in the following:

INSTRUMENT : LIMITED WARRANTY DEED WITH COVENANTS AND
RESERVATION OF RIGHTS

DATED : September 3, 2008
FILED : Land Court Document No. [3785831](#)

7. Claims arising out of customary and traditional rights and
practices, including without limitation those exercised for
subsistence, cultural, religious, access or gathering purposes,
as provided for in the Hawaii Constitution or the Hawaii Revised
Statutes.

8. Any claim or boundary dispute which may exist or arise by reason
of the failure of the GRANT OF NONEXCLUSIVE EASEMENTS (ACCESS,
WATERLINE AND OTHER UTILITY PURPOSES) dated September 3, 2008,
filed as Land Court Document No. [3785832](#), referred to in Schedule
C, to locate with certainty the boundaries of the easement area
which is approximately one hundred fifteen (115) feet wide
extending approximately fifty-seven and one-half (57-1/2) feet on
each side of the centerline graphically shown on Exhibit A
attached thereto, described in said instrument.

SCHEDULE B CONTINUED

9. The unrecorded leases and permit and matters arising from or affecting the same, described as follows:

Lease of Right of Way dated December 8, 1937, in favor of Hawaiian Electric Company, Inc. (Easement No. E00782800), the term of which is month to month, subject to earlier termination pursuant to the terms thereof.

END OF SCHEDULE B

SCHEDULE C

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT M-9-A, area 19.296 acres, more or less, as shown on Map [6](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased.

Being the land(s) described in Transfer Certificate of Title No. 921,358 issued to SYNGENTA HAWAII, LLC, a Hawaii limited liability company.

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

GRANTOR : JAMES CAMPBELL COMPANY LLC, a Delaware limited liability company

GRANTEE : SYNGENTA HAWAII, LLC, a Hawaii limited liability company

DATED : September 3, 2008

FILED : Land Court Document No. [3785831](#)

Together with a nonexclusive easement for vehicular and pedestrian access to and from Kunia Road (a public highway) and for waterline and other utility purposes, as granted by GRANT OF NONEXCLUSIVE EASEMENTS (ACCESS, WATERLINE AND OTHER UTILITY PURPOSES) dated September 3, 2008, filed as Land Court Document No. [3785832](#); and subject to the terms and provisions contained therein. Said easement over an easement area approximately one hundred fifteen (115) feet wide extending approximately fifty-seven and one-half (57 1/2) feet on each side of the center line graphically shown on Exhibit A attached thereto, and located within the land described in Exhibit B attached thereto.

END OF SCHEDULE C

GENERAL NOTES

1. There is hereby omitted from any covenants, conditions and reservations contained herein any covenant or restriction based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law. Lawful restrictions under state or federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

GUIDELINES FOR THE ISSUANCE OF INSURANCE

- A. Taxes shown in Schedule B are as of the date such information is available from the taxing authority. Evidence of payment of all taxes and assessments subsequent to such date must be provided prior to recordation.
 - B. Evidence of authority regarding the execution of all documents pertaining to the transaction is required prior to recordation. This includes corporate resolutions, copies of partnership agreements, powers of attorney and trust instruments.
 - C. If an entity (corporation, partnership, limited liability company, etc.) is not registered in Hawaii, evidence of its formation and existence under the laws where such entity is formed must be presented prior to recordation.
 - D. If the transaction involves a construction loan, the following is required:
 - (1) a letter confirming that there is no construction prior to recordation; or
 - (2) if there is such construction, appropriate indemnity agreements, financial statements and other relevant information from the owner, developer, general contractor and major sub-contractors must be submitted to the Title Company for approval at least one week prior to the anticipated date of recordation.
- Forms are available upon request from Title Guaranty of Hawaii.
- E. Chapter 669, Hawaii Revised Statutes, sets forth acceptable tolerances for discrepancies in structures or improvements relative to private property boundaries for various classes of real property. If your survey map shows a position discrepancy that falls within the tolerances of Chapter 669, call your title officer as affirmative coverage may be available to insured lenders.
 - F. The right is reserved to make additional exceptions and/or requirements upon examination of all documents submitted in connection with this transaction.
 - G. If a policy of title insurance is issued, it will exclude from coverage all matters set forth in Schedule B of this report and in the printed Exclusions from Coverage contained in an ALTA policy or in the Hawaii Standard Owner's Policy, as applicable. Different forms may have different exclusions and should be reviewed. Copies of the policy forms are available upon request from Title Guaranty of Hawaii or on our website at www.tghawaii.com.

DATE PRINTED: 2/19/2010

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: SYNGENTA HAWAII LLC
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.
(1) 9 2 004 003 0000

CLASS: 5 AREA ASSESSED: 19.296 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2009

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$	0	
EXEMPTION	\$	0	
NET VALUE	\$	0	
LAND	\$	36,100	AGRICULTURAL USE VALUE
EXEMPTION	\$	0	
NET VALUE	\$	36,100	
TOTAL NET VALUE	\$	36,100	

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 9/30/2009

Tax Year	Installment	Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2009	2	102.88				102.88	PENDING
2009	1	102.89				102.89	PAID
2008	2	83.79				83.79	PAID
2008	1	83.79				83.79	PAID

Total Amount Due: 102.88

Penalty and Interest Computed to: 9/30/2009

STATUS REPORT

Maximum liability limited to
\$3,500.00

This report (and any revisions thereto) is issued solely for the convenience of the titleholder, the titleholder's agent, counsel, purchaser or mortgagee, or the person ordering it.

SCHEDULE A

Title Guaranty of Hawaii, Incorporated, hereby reports that, subject to those matters set forth in Schedule "B" hereof, the title to the estate or interest to the land described in Schedule "C" hereof is vested in:

SYNGENTA HAWAII, LLC,
a Hawaii limited liability company,
as to LOTS 171 and 416, and
JAMES CAMPBELL COMPANY, LLC,
a Delaware limited liability company,
as to LOT M-8-B,
as Fee Owner

This report is dated as of February 5, 2010 at 8:00 a.m.

Inquiries concerning this report should be directed to OFELIA LOPEZ.
Email olopez@tghawaii.com
Fax (808) 521-0210
Telephone (808) 533-5831.
Refer to Order No. 201004417D.

**SCHEDULE B
EXCEPTIONS**

1. Real Property Taxes, if any, that may be due and owing.

Parcel First and Second is(are) covered by Tax Key: [\(1\) 9-2-004-012](#).

Parcel Third is(are) covered by Tax Key: [\(1\) 9-2-004-013](#).

-Note:- Attention is invited to the fact that the premises covered herein may be subject to possible rollback or retroactive property taxes.

2. -AS LOT 171:-

Any rights or interests which may exist or arise by reason of the following facts shown on survey map prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying LLC, dated January 16, 2007:

- (A) Old leaning barb wire fence meanders between adjoining lot and subject lot, ownership unknown; and
- (B) Old leaning barb wire fence crosses between adjoining lot and subject lot, ownership unknown.

3. -AS TO LOT 416:-

(A) GRANT

TO : EDMUND C. OLSON, as Trustee of the Edmund C. Olson Trust No. 2 under agreement dated August 21, 1985

DATED : July 14, 2006

FILED : Land Court Document No. [3452986](#)

GRANTING : a nonexclusive easement for vehicular and pedestrian access to and from Kunia Road (a public highway) and for waterline and other utility purposes

SCHEDULE B CONTINUED

(B) GRANT

TO : MONSANTO COMPANY, a Delaware corporation

DATED : July 18, 2007

FILED : Land Court Document No. [3630150](#)

GRANTING : a nonexclusive easement for vehicular and pedestrian access to and from Kunia Road (a public highway) and for waterline and other utility purposes

(C) Any rights or interests which may exist or arise by reason of the following facts shown on survey map prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying LLC, dated January 16, 2007:

- (1) Barb wire fence appurtenant to adjoining lot extends 36.1' into subject lot; and
- (2) Barb wire fence meanders across subject lot and adjoining lot, for its entire length, ownership is unknown.

(D) The terms and provisions contained in the following:

INSTRUMENT : ENCROACHMENT AGREEMENT AND LICENSE

DATED : December 8, 2008

FILED : Land Court Document No. [3813697](#)

PARTIES : EDMUND C. OLSON, as Trustee of the Edmund C. Olson Trust No. 2 under agreement dated August 21, 1985; and SYNGENTA HAWAII, LLC, a Hawaii limited liability company

RE : a portion of waterline crossing portion of Lot 416

4. -AS TO LOT M-8-B:-

SCHEDULE B CONTINUED

(A) DESIGNATION OF EASEMENT "49" (40 feet wide)

SHOWN : on Maps 10 and 23, as set forth by Land Court Order No. [4113](#), filed August 5, 1940

Said Easement "49" was amended by Land Court Order No. [17969](#), filed April 1, 1960, to reduce the width of said easement from 40 feet to 30 feet.

(B) -AS TO EASEMENT "49":-

Access rights in favor of Lot 17534 (as shown on Map [1338](#)), as set forth by Land Court Order No. [172495](#), filed October 22, 2007.

(C) The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF SITE ACCESS; JOINDER

DATED : ----, 2007 (acknowledged October 15, 2007, October 30, 2007 and November 2, 2007)

FILED : Land Court Document No. [3676945](#)

RECORDED : Document No. [2007-193800](#)

Joinders by UNITED STATES ENVIRONMENTAL PROTECTION AGENCY and DEL MONTE FRESH PRODUCE (HAWAII), INC., a Delaware corporation.

(D) The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF ENVIRONMENTAL RESTRICTION (WELL RESTRICTION AREA); JOINDER

DATED : ----, 2007 (acknowledged October 15, 2007, October 30, 2007 and November 2, 2007)

FILED : Land Court Document No. [3676946](#)

RECORDED : Document No. [2007-193801](#)

Joinders by UNITED STATES ENVIRONMENTAL PROTECTION AGENCY and DEL MONTE FRESH PRODUCE (HAWAII), INC., a Delaware corporation.

SCHEDULE B CONTINUED

(E) GRANT OF PRIVATE WATERLINE EASEMENT

TO : SYNGENTA HAWAII, LLC, a Hawaii limited liability company

DATED : September 3, 2008

FILED : Land Court Document No. [3785842](#)

GRANTING : a nonexclusive easement for underground water pipeline(s) through the easement area shown on map attached thereto as Exhibit "A"

(F) GRANT OF NONEXCLUSIVE EASEMENT (ACCESS ONLY)

TO : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company

DATED : December 10, 2008

FILED : Land Court Document No. [3812213](#)

GRANTING : a nonexclusive easement solely for vehicular and pedestrian access in favor of Lot 17846 of Land Court Application No. 1069, as shown on Map [1370](#), said easement shown on map attached thereto as Exhibit "A"

(G) GRANT OF NONEXCLUSIVE EASEMENT (ACCESS AND UTILITY PURPOSES)

TO : GILL-OLSON JOINT VENTURE, a Hawaii Joint Venture

DATED : September 30, 2009

FILED : Land Court Document No. [3903239](#)

GRANTING : a nonexclusive easement over said Easement "49" solely for vehicular and pedestrian access to and from Kunia Road (a public highway) and for utility purposes, in favor of the Benefitted Property more particularly described therein

(H) GRANT OF NONEXCLUSIVE EASEMENT (ACCESS AND UTILITY PURPOSES)

SCHEDULE B CONTINUED

TO : EDMUND C. OLSON, AS TRUSTEE OF THE EDMUND C. OLSON TRUST NO. 2 UNDER AGREEMENT DATED AUGUST 21, 1985

DATED : September 30, 2009

FILED : Land Court Document No. [3903245](#)

GRANTING : a nonexclusive easement over said Easement "49" solely for vehicular and pedestrian access to and from Kunia Road (a public highway) and for utility purposes, in favor of Lot 12006 (as shown on Map [885](#))

(I) GRANT OF NONEXCLUSIVE EASEMENT (ACCESS AND UTILITY PURPOSES)

TO : THE TRUST FOR PUBLIC LAND, a California nonprofit public benefit corporation

DATED : September 30, 2009

FILED : Land Court Document No. [3903249](#)

GRANTING : a nonexclusive easement over said Easement "49" solely for vehicular and pedestrian access to and from Kunia Road (a public highway) and for utility purposes, in favor of Lot 18717 (as shown on Map [1468](#))

(J) GRANT OF NONEXCLUSIVE EASEMENT (ACCESS ONLY)

TO : THE TRUST FOR PUBLIC LAND, a California nonprofit public benefit corporation

DATED : September 30, 2009

FILED : Land Court Document No. [3903251](#)

GRANTING : a nonexclusive easement solely for vehicular and pedestrian access in favor of Lot 18717 (as shown on Map [1468](#)), provided that the use of the easement area by the general public is prohibited

SCHEDULE B CONTINUED

(K) Claims arising out of the failure to convey the land described herein together with an easement or right of access.

-Note:- This will be deleted from the policy if such conveyance occurs prior to the policy date.

(L) Water rights, claims or title to water, whether or not shown by the public records.

(M) Discrepancies, conflicts in boundary lines, shortage in area, encroachments or any other matters which a correct survey or archaeological study would disclose.

(N) Any unrecorded leases and matters arising from or affecting the same.

5. The terms and provisions contained in the following:

INSTRUMENT : TRUSTEES LIMITED WARRANTY DEED

DATED : November 1, 2006

FILED : Land Court Document No. [3505988](#)

RECORDED : Document No. [2006-198463](#)

6. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF COVENANTS REGARDING WATER ALLOCATION AND EASEMENTS

DATED : December 13, 2007

FILED : Land Court Document No. [3694441](#)

RECORDED : Document No. [2007-219110](#)

Said Declaration amended and restated in its entirety by instrument dated August 21, 2008, filed as Land Court Document No. [3782044](#), and recorded as Document No. [2008-133157](#).

SCHEDULE B CONTINUED

7. Claims arising out of customary and traditional rights and practices, including without limitation those exercised for subsistence, cultural, religious, access or gathering purposes, as provided for in the Hawaii Constitution or the Hawaii Revised Statutes.

8. -AS TO LOTS 171 AND 416:-

(A) The terms and provisions contained in the following:

INSTRUMENT : LIMITED WARRANTY DEED WITH COVENANTS AND
RESERVATION OF RIGHTS

DATED : September 3, 2008

FILED : Land Court Document No. [3785831](#)

(B) -AS TO LOTS 171 AND 416:-

Any claim or boundary dispute which may exist or arise by reason of the failure of the GRANT OF NONEXCLUSIVE EASEMENTS (ACCESS, WATERLINE AND OTHER UTILITY PURPOSES) dated September 3, 2008, filed as Land Court Document No. [3785832](#), referred to in Schedule C, to locate with certainty the boundaries of the easement area which is approximately one hundred fifteen (115) feet wide extending approximately fifty-seven and one-half (57-1/2) feet on each side of the centerline graphically shown on Exhibit A attached thereto, described in said instrument.

END OF SCHEDULE B

SCHEDULE C

-PARCEL FIRST:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT 171, area 1.319 acres, more or less, as shown on Map [27](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased.

Being the land(s) described in Transfer Certificate of Title No. 921,360 issued to SYNGENTA HAWAII, LLC, a Hawaii limited liability company.

-PARCEL SECOND:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT 416, area 91.99 acres, more or less, as shown on Map [76](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased.

Together with access to Kunia Road over existing roads within Lot 170, as set forth by Land Court Order No. [15399](#), filed May 14, 1957.

-Note:- Lot 170 was subdivided into Lots 878, 879, and 880, as shown on Map [109](#), by Land Court Order No. [17935](#), filed March 17, 1960.

Being the land(s) described in Transfer Certificate of Title No. 921,361 issued to SYNGENTA HAWAII, LLC, a Hawaii limited liability company.

SCHEDULE C CONTINUED

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED WITH
COVENANTS AND RESERVATION OF RIGHTS

GRANTOR : JAMES CAMPBELL COMPANY LLC, a Delaware limited
liability company

GRANTEE : SYNGENTA HAWAII, LLC, a Hawaii limited liability
company

DATED : September 3, 2008

FILED : Land Court Document No. [3785831](#)

Together with a nonexclusive easement for vehicular and pedestrian access to and from Kunia Road (a public highway) and for waterline and other utility purposes, as granted by GRANT OF NONEXCLUSIVE EASEMENTS (ACCESS, WATERLINE AND OTHER UTILITY PURPOSES) dated September 3, 2008, filed as Land Court Document No. [3785832](#); and subject to the terms and provisions contained therein. Said easement over an easement area approximately one hundred fifteen (115) feet wide extending approximately fifty-seven and one-half (57 1/2) feet on each side of the center line graphically shown on Exhibit A attached thereto, and located within the land described in Exhibit B attached thereto.

-PARCEL THIRD:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT M-8-B, area 854.23 acres, more or less, as shown on Map [5](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased;

Being the lands(s) described in Transfer Certificate of Title No. 830,900 issued to JAMES CAMPBELL COMPANY LLC, a Delaware limited liability company.

SCHEDULE C CONTINUED

BEING THE PREMISES ACQUIRED BY TRUSTEES LIMITED WARRANTY DEED

GRANTOR : C.R. CHURCHILL, D.A. HEENAN, RICHARD W. GUSHMAN, II
and RONALD J. ZLATOPER, the duly appointed,
qualified and acting Trustees under the Will and of
the Estate of James Campbell, deceased, acting in
their fiduciary and not in their individual
capacities

GRANTEE : JAMES CAMPBELL COMPANY LLC, a Delaware limited
liability company

DATED : November 1, 2006

FILED : Land Court Document No. [3505988](#)

END OF SCHEDULE C

GENERAL NOTES

1. There is hereby omitted from any covenants, conditions and reservations contained herein any covenant or restriction based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law. Lawful restrictions under state or federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

GUIDELINES FOR THE ISSUANCE OF INSURANCE

- A. Taxes shown in Schedule B are as of the date such information is available from the taxing authority. Evidence of payment of all taxes and assessments subsequent to such date must be provided prior to recordation.
- B. Evidence of authority regarding the execution of all documents pertaining to the transaction is required prior to recordation. This includes corporate resolutions, copies of partnership agreements, powers of attorney and trust instruments.
- C. If an entity (corporation, partnership, limited liability company, etc.) is not registered in Hawaii, evidence of its formation and existence under the laws where such entity is formed must be presented prior to recordation.
- D. If the transaction involves a construction loan, the following is required:
 - (1) a letter confirming that there is no construction prior to recordation; or
 - (2) if there is such construction, appropriate indemnity agreements, financial statements and other relevant information from the owner, developer, general contractor and major sub-contractors must be submitted to the Title Company for approval at least one week prior to the anticipated date of recordation.

Forms are available upon request from Title Guaranty of Hawaii.

- E. Chapter 669, Hawaii Revised Statutes, sets forth acceptable tolerances for discrepancies in structures or improvements relative to private property boundaries for various classes of real property. If your survey map shows a position discrepancy that falls within the tolerances of Chapter 669, call your title officer as affirmative coverage may be available to insured lenders.
- F. The right is reserved to make additional exceptions and/or requirements upon examination of all documents submitted in connection with this transaction.
- G. If a policy of title insurance is issued, it will exclude from coverage all matters set forth in Schedule B of this report and in the printed Exclusions from Coverage contained in an ALTA policy or in the Hawaii Standard Owner's Policy, as applicable. Different forms may have different exclusions and should be reviewed. Copies of the policy forms are available upon request from Title Guaranty of Hawaii or on our website at www.tghawaii.com.

DATE PRINTED: 2/24/2010

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: SYNGENTA HAWAII LLC
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.
(1) 9 2 004 012 0000

CLASS: 5 AREA ASSESSED: 93.309 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2009

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$	0
EXEMPTION	\$	0
NET VALUE	\$	0
LAND	\$	174,600
EXEMPTION	\$	0
NET VALUE	\$	174,600
TOTAL NET VALUE	\$	174,600

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 9/30/2009

Tax Year	Installment	Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2009	2	497.61				497.61	PENDING
2009	1	497.61				497.61	PAID
						Total Amount Due:	497.61

Penalty and Interest Computed to: 9/30/2009

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DATE PRINTED: 2/24/2010

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: JAMES CAMPBELL COMPANY LLC
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.
(1) 9 2 004 013 0000

CLASS: 5 AREA ASSESSED: 854.230 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2009

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING \$ 0
EXEMPTION \$ 0
NET VALUE \$ 0
LAND \$ 10,636,100
EXEMPTION \$ 0
NET VALUE \$ 10,636,100
TOTAL NET VALUE \$ 10,636,100

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 9/30/2009

Tax Year	Installment	Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2009	2	30,312.88				26,220.00	PENDING
2009	1	30,312.89				30,312.89	PAID
						Total Amount Due:	26,220.00

Penalty and Interest Computed to: 9/30/2009

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STATUS REPORT

Maximum liability limited to
\$3,500.00

This report (and any revisions thereto) is issued solely for the convenience of the titleholder, the titleholder's agent, counsel, purchaser or mortgagee, or the person ordering it.

SCHEDULE A

Title Guaranty of Hawaii, Incorporated, hereby reports that, subject to those matters set forth in Schedule "B" hereof, the title to the estate or interest to the land described in Schedule "C" hereof is vested in:

SYNGENTA HAWAII, LLC,
a Hawaii limited liability company,
as Fee Owner

This report is dated as of February 5, 2010 at 8:00 p.m.

Inquiries concerning this report should be directed to OFELIA LOPEZ.
Email olopez@tghawaii.com
Fax (808) 521-0210
Telephone (808) 533-5831.
Refer to Order No. 201004417E.

**SCHEDULE B
EXCEPTIONS**

1. Real Property Taxes, if any, that may be due and owing.

Tax Key: [\(1\) 9-2-004-006](#) Area Assessed: 724.893 acres

-Note:- Attention is invited to the fact that the premises covered herein may be subject to possible rollback or retroactive property taxes.

2. -AS TO LOT 878:-

(A) Access rights in favor of Lot 881, as set forth by Land Court Order No. [17936](#), filed March 17, 1960.

(B) Any rights or interests which may exist or arise by reason of the following facts shown on survey map prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying LLC, dated January 16, 2007:

- (1) Old leaning barb wire fence crosses between adjoining lot and subject lot, ownership unknown;
- (2) Barb wire fence crosses through subject lot and adjoining lot, ownership unknown;
- (3) Rip rap crosses through subject lot and adjoining lot, ownership unknown; and
- (4) Exposed pipe crosses through subject lot, ownership unknown.

3. -AS TO LOT 879:-

(A) DESIGNATION OF EASEMENT "290" (75 feet wide)

PURPOSE : electric powerline
SHOWN : on Map [131](#), as set forth by Land Court Order No. [20062](#), filed May 16, 1962

SCHEDULE B CONTINUED

(B) DESIGNATION OF EASEMENT "292" (75 feet wide)

PURPOSE : electric powerline
SHOWN : on Map [131](#), as set forth by Land Court Order No. [20062](#), filed May 16, 1962

(C) GRANT

TO : THE HAWAIIAN ELECTRIC COMPANY, LIMITED, a Hawaii corporation, now known as HAWAIIAN ELECTRIC COMPANY, INC.

DATED : November 16, 1962
FILED : Land Court Document No. [322521](#)
GRANTING : a perpetual right of way in the nature of an easement for utility purposes, over said Easements "290" and "292"

Said Grant was amended by instrument dated October 21, 1977, filed as Land Court Document No. [962648](#).

(D) GRANT

TO : EDMUND C. OLSON, as Trustee of the Edmund C. Olson Trust No. 2 under agreement dated August 21, 1985

DATED : July 14, 2006
FILED : Land Court Document No. [3452986](#)
GRANTING : a nonexclusive easement for vehicular and pedestrian access to and from Kunia Road (a public highway) and for waterline and other utility purposes

(E) Any rights or interests which may exist or arise by reason of the following facts shown on survey map prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying LLC, dated January 16, 2007:

Exposed pipe crosses through subject lot, ownership is unknown.

SCHEDULE B CONTINUED

(F) GRANT

TO : EDMUND C. OLSON, as Trustee of the EDMUND C. TRUST
NO. 2 under agreement dated August 21, 1985, and
MONSANTO COMPANY, a Delaware corporation

DATED : September 3, 2008

FILED : Land Court Document No. [3585840](#)

GRANTING : a nonexclusive easement in common with the Grantor
and others, for private overhead electrical power
line purposes only, which easement area is
approximately twenty-five (25) feet wide and
graphically shown as Easement "E-5" and Easement
"E-7" on Exhibit A attached thereto

-NOTE:- Above Easements "E-5" and "E-7" are not designated and
filed in Land Court Application No. 1069, in the Office
of the Assistant Registrar of the Land Court of the
State of Hawaii.

(G) GRANT

TO : MONSANTO COMPANY, a Delaware corporation

DATED : July 18, 2007

FILED : Land Court Document No. [3630150](#)

GRANTING : a nonexclusive easement for vehicular and
pedestrian access to and from Kunia Road (a public
highway) and for waterline and other utility
purposes

(H) GRANT

TO : EDMUND C. OLSON, as Trustee of the Edmund C. Olson
Trust No. 2 under Agreement dated August 21, 1985;
MONSANTO COMPANY, a Delaware corporation

DATED : September 3, 2008

FILED : Land Court Document No. [3785840](#)

GRANTING : an easement over said Easements "E-5" and "E-7" for
electrical purposes.

SCHEDULE B CONTINUED

(I) The terms and provisions contained in the following:

INSTRUMENT : ENCROACHMENT AGREEMENT AND LICENSE

DATED : December 8, 2008

FILED : Land Court Document No. [3813697](#)

PARTIES : EDMUND C. OLSON, as Trustee of the Edmund C. Olson Trust No. 2 under agreement dated August 21, 1985; and SYNGENTA HAWAII, LLC, a Hawaii limited liability company

RE : a portion of waterline crossing portion of Lot 879

4. -AS TO LOT 880:-

(A) Well designated as BMW-5, as shown on survey map prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying LLC, dated January 16, 2007.

(B) Any rights or interests which may exist or arise by reason of the following facts shown on survey map prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying LLC, dated January 16, 2007:

Rip rap crosses through subject and adjoining lot, ownership unknown.

5. -AS TO LOTS 878, 879, and 880:-

Easement or access rights in favor of Lot 416, as shown on Map [76](#), as set forth by Land Court Order No. [15399](#), filed May 14, 1957.

6. The terms and provisions contained in the following:

INSTRUMENT : TRUSTEES LIMITED WARRANTY DEED

DATED : November 1, 2006

FILED : Land Court Document No. [3505988](#)

RECORDED : Document No. [2006-198463](#)

SCHEDULE B CONTINUED

7. -AS TO LOTS 169 and 880:-

(A) The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF SITE ACCESS; JOINDER
DATED : --- (acknowledged October 15, 2007, October 30,
2007, and November 2, 2007)
FILED : Land Court Document No. [3676945](#)
RECORDED : Document No. [2007-193800](#)

(B) The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF ENVIRONMENTAL RESTRICTIONS (WELL
RESTRICTION AREA)
DATED : --- (acknowledged October 15, 2007, October 30,
2007, and November 2, 2007)
FILED : Land Court Document No. [3676946](#)
RECORDED : Document No. [2007-193801](#)

8. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF COVENANTS REGARDING WATER ALLOCATION
AND EASEMENTS
DATED : December 13, 2007
FILED : Land Court Document No. [3694441](#)
RECORDED : Document No. [2007-219110](#)

Said Declaration amended and restated in its entirety by
instrument dated August 21, 2008, filed as Land Court Document
No. [3782044](#), and recorded as Document No. [2008-133157](#).

9. -AS TO LOTS 878 and 880:-

SCHEDULE B CONTINUED

GRANT

TO : (a) FAT LAW'S FARM, INC., a Hawaii corporation, as to an undivided sixty percent (60%) interest, (b) LAW TIENG'S FARM LLC, a Hawaii limited liability company, as to an undivided twenty percent (20%) interest, (c) TONY TAN LAW and MANYVONE LAW, husband and wife, as to an undivided ten percent (10%) interest, as Tenants by the Entirety, and (d) HAE VIENGKHOU and PHOUANGPHET VIENGKHOU, husband and wife, as to an undivided ten percent (10%) interest, as Tenants by the Entirety, as Tenants in Common

DATED : January 23, 2008

FILED : Land Court Document No. [3704220](#)

GRANTING : a perpetual nonexclusive easement for water pipeline purposes as shown on the map attached therein

10. The terms and provisions contained in the following:

INSTRUMENT : LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

DATED : September 3, 2008

FILED : Land Court Document No. [3785831](#)

11. Claims arising out of customary and traditional rights and practices, including without limitation those exercised for subsistence, cultural, religious, access or gathering purposes, as provided for in the Hawaii Constitution or the Hawaii Revised Statutes.

12. Any claim or boundary dispute which may exist or arise by reason of the failure of the GRANT OF NONEXCLUSIVE EASEMENTS (ACCESS, WATERLINE AND OTHER UTILITY PURPOSES) dated September 3, 2008, filed as Land Court Document No. [3785832](#), referred to in Schedule C, to locate with certainty the boundaries of the easement area which is approximately one hundred fifteen (115) feet wide extending approximately fifty-seven and one-half (57-1/2) feet on each side of the centerline graphically shown on Exhibit A attached thereto, described in said instrument.

SCHEDULE B CONTINUED

13. The unrecorded leases and permit and matters arising from or affecting the same, described as follows:

(A) -AS TO LOT 169 ONLY:-

Lease of Right of Way dated December 8, 1937, in favor of Hawaiian Electric Company, Inc. (Easement No. E00782800), the term of which is month to month, subject to earlier termination pursuant to the terms thereof.

(B) -AS TO LOT 879 ONLY:-

Well Construction Permit dated May 10, 2001 (Ewa-Kunia Mauka Deep Monitor, State of Hawaii Well No. 2404-01) issued by the Commission on Water Resource Management, State of Hawaii, Department of Land and Natural Resources, to the State of Hawaii, Department of Land and Natural Resources, for construction of a deep water monitoring well (Agreement No. A01191300), the term of which expired on May 7, 2003.

END OF SCHEDULE B

SCHEDULE C

-PARCEL FIRST:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT 169, area 0.693 acre, more or less, as shown on Map [27](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased.

Being the land(s) described in Transfer Certificate of Title No. 921,359 issued to SYNGENTA HAWAII, LLC, a Hawaii limited liability company.

-PARCEL SECOND:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT 878, area 432.503 acres, more or less, as shown on Map [109](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased;

Together with access to Kunia Road over Lot L, as set forth by Land Court Order No. [17935](#), filed March 17, 1960;

Being the land(s) described in Transfer Certificate of Title No. 921,362 issued to SYNGENTA HAWAII, LLC, a Hawaii limited liability company.

-PARCEL THIRD:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

SCHEDULE C CONTINUED

LOT 879, area 198.580 acres, more or less, as shown on Map [109](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased;

Together with access to Kunia Road over Lot L, as set forth by Land Court Order No. [17935](#), filed March 17, 1960;

Being the land(s) described in Transfer Certificate of Title No. 921,363 issued to SYNGENTA HAWAII, LLC, a Hawaii limited liability company.

-PARCEL FOURTH:-

All of that certain parcel of land situate Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT 880, area 93.117 acres, more or less, as shown on Map [109](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased.

Being the land(s) described in Transfer Certificate of Title No. 921,364 issued to SYNGENTA HAWAII, LLC, a Hawaii limited liability company.

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

GRANTOR : JAMES CAMPBELL COMPANY LLC, a Delaware limited liability company

GRANTEE : SYNGENTA HAWAII, LLC, a Hawaii limited liability company

DATED : September 3, 2008

FILED : Land Court Document No. [3785831](#)

SCHEDULE C CONTINUED

-AS TO PARCELS FIRST THROUGH FOURTH:-

Together with a nonexclusive easement for vehicular and pedestrian access to and from Kunia Road (a public highway) and for waterline and other utility purposes, as granted by GRANT OF NONEXCLUSIVE EASEMENTS (ACCESS, WATERLINE AND OTHER UTILITY PURPOSES) dated September 3, 2008, filed as Land Court Document No. [3785832](#); and subject to the terms and provisions contained therein. Said easement over an easement area approximately one hundred fifteen (115) feet wide extending approximately fifty-seven and one-half (57 1/2) feet on each side of the center line graphically shown on Exhibit A attached thereto, and located within the land described in Exhibit B attached thereto.

END OF SCHEDULE C

GENERAL NOTES

1. There is hereby omitted from any covenants, conditions and reservations contained herein any covenant or restriction based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law. Lawful restrictions under state or federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

GUIDELINES FOR THE ISSUANCE OF INSURANCE

- A. Taxes shown in Schedule B are as of the date such information is available from the taxing authority. Evidence of payment of all taxes and assessments subsequent to such date must be provided prior to recordation.
 - B. Evidence of authority regarding the execution of all documents pertaining to the transaction is required prior to recordation. This includes corporate resolutions, copies of partnership agreements, powers of attorney and trust instruments.
 - C. If an entity (corporation, partnership, limited liability company, etc.) is not registered in Hawaii, evidence of its formation and existence under the laws where such entity is formed must be presented prior to recordation.
 - D. If the transaction involves a construction loan, the following is required:
 - (1) a letter confirming that there is no construction prior to recordation; or
 - (2) if there is such construction, appropriate indemnity agreements, financial statements and other relevant information from the owner, developer, general contractor and major sub-contractors must be submitted to the Title Company for approval at least one week prior to the anticipated date of recordation.
- Forms are available upon request from Title Guaranty of Hawaii.
- E. Chapter 669, Hawaii Revised Statutes, sets forth acceptable tolerances for discrepancies in structures or improvements relative to private property boundaries for various classes of real property. If your survey map shows a position discrepancy that falls within the tolerances of Chapter 669, call your title officer as affirmative coverage may be available to insured lenders.
 - F. The right is reserved to make additional exceptions and/or requirements upon examination of all documents submitted in connection with this transaction.
 - G. If a policy of title insurance is issued, it will exclude from coverage all matters set forth in Schedule B of this report and in the printed Exclusions from Coverage contained in an ALTA policy or in the Hawaii Standard Owner's Policy, as applicable. Different forms may have different exclusions and should be reviewed. Copies of the policy forms are available upon request from Title Guaranty of Hawaii or on our website at www.tghawaii.com.

DATE PRINTED: 2/22/2010

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: SYNGENTA HAWAII LLC
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.
(1) 9 2 004 006 0000

CLASS: 5 AREA ASSESSED: 724.893 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2009

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$	2,600	
EXEMPTION	\$	0	
NET VALUE	\$	2,600	
LAND	\$	1,356,300	AGRICULTURAL USE VALUE
EXEMPTION	\$	0	
NET VALUE	\$	1,356,300	
TOTAL NET VALUE	\$	1,358,900	

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 9/30/2009

Tax Year	Installment	Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2009	2	3,872.86				3,872.86	PENDING
2009	1	3,872.87				3,872.87	PAID
2008	2	963.58				963.58	PAID
2008	1	963.59				963.59	PAID

Total Amount Due: 3,872.86

Penalty and Interest Computed to: 9/30/2009

STATUS REPORT

Maximum liability limited to
\$3,500.00

This report (and any revisions thereto) is issued solely for the convenience of the titleholder, the titleholder's agent, counsel, purchaser or mortgagee, or the person ordering it.

SCHEDULE A

Title Guaranty of Hawaii, Incorporated, hereby reports that, subject to those matters set forth in Schedule "B" hereof, the title to the estate or interest to the land described in Schedule "C" hereof is vested in:

ARMY HAWAII FAMILY HOUSING LLC,
a Delaware limited liability company,
as Fee Owner

This report is dated as of February 5, 2010 at 8:00 a.m.

Inquiries concerning this report should be directed to OFELIA LOPEZ.
Email olopez@tghawaii.com
Fax (808) 521-0210
Telephone (808) 533-5831.
Refer to Order No. 201004417F.

**SCHEDULE B
EXCEPTIONS**

1. Real Property Taxes, if any, that may be due and owing.

Tax Key: [\(1\) 9-2-005-001](#) Area Assessed: 3.983 acres

-Note:- Attention is invited to the fact that the premises covered herein may be subject to possible rollback or retroactive property taxes.

2. The terms and provisions contained in the following:

INSTRUMENT : TRUSTEES LIMITED WARRANTY DEED

DATED : November 1, 2006

FILED : Land Court Document No. [3505988](#)

RECORDED : Document No. [2006-198463](#)

3. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF SITE ACCESS; JOINDER

DATED : _____, 2007 (acknowledged October 15, 2007, October 30, 2007 and November 2, 2007)

FILED : Land Court Document No. [3676945](#)

RECORDED : Document No. [2007-193800](#)

4. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF COVENANTS REGARDING WATER ALLOCATION AND EASEMENTS

DATED : December 13, 2007

FILED : Land Court Document No. [3694441](#)

RECORDED : Document No. [2007-219110](#)

SCHEDULE B CONTINUED

Said above Declaration has been amended and restated by AMENDED AND RESTATED DECLARATION OF COVENANTS REGARDING WATER ALLOCATION AND EASEMENTS dated August 21, 2008, filed as Land Court Document No. [3782044](#), recorded as Document No. [2008-133157](#).

5. The terms and provisions contained in the following:

INSTRUMENT : LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

DATED : as of December 10, 2008
FILED : Land Court Document No. [3812212](#)
RECORDED : Document No. [2008-185856](#)

6. REAL PROPERTY LEASEHOLD MORTGAGE, SECURITY AGREEMENT, ASSIGNMENT OF RENTS AND LEASES, FIXTURE FILING AND FINANCING STATEMENT

MORTGAGOR : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company

MORTGAGEE : U.S. BANK NATIONAL ASSOCIATION, a national banking association

DATED : April 1, 2005, effective as of April 26, 2005
FILED : Land Court Document No. [3258660](#)
RECORDED : Document No. [2005-082364](#)
AMOUNT : \$1,597,500,000.00 - covers the land described herein, besides other land

ABOVE MORTGAGE AMENDED BY INSTRUMENT

DATED : as of December 10, 2008
FILED : Land Court Document No. [3812214](#)
RECORDED : Document No. [2008-185857](#)
RE : to add the land described in Schedule C to the Mortgage

SCHEDULE B CONTINUED

7. The terms and provisions contained in the following:

INSTRUMENT : ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS

DATED : April 1, 2005

RECORDED : Document No. [2005-082365](#)

PARTIES : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company, as "Assignor", and U.S. BANK NATIONAL ASSOCIATION, not in its individual capacity, but solely as Trustee under a Trust Indenture dated as of April 1, 2005, as "Assignee"

RE : all rights, title and interest of Assignor to insure the payment and performance of the Mortgage

(Not noted on Transfer Certificate(s) of Title referred to herein)

ABOVE ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS AMENDED BY INSTRUMENT

DATED : as of December 10, 2008

RECORDED : Document No. [2008-185858](#)

RE : to add the land described in Schedule C

(Not noted on Transfer Certificate(s) of Title referred to herein)

8. SECOND REAL PROPERTY LEASEHOLD MORTGAGE, SECURITY AGREEMENT, ASSIGNMENT OF RENTS AND LEASES, FIXTURE FILING AND FINANCING STATEMENT

MORTGAGOR : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company

MORTGAGEE : MBIA INSURANCE CORPORATION, a stock insurance corporation duly organized and existing under the laws of the State of New York, as indenture trustee

DATED : April 1, 2005, effective as of April __, 2005

FILED : Land Court Document No. [3258661](#)

RECORDED : Document No. [2005-082366](#)

SCHEDULE B CONTINUED

AMOUNT : obligations pursuant to Reimbursement Agreement dated April 1, 2005 - covers the land described herein, besides other land

ABOVE MORTGAGE AMENDED BY INSTRUMENT

DATED : as of December 10, 2008
FILED : Land Court Document No. [3812215](#)
RECORDED : Document No. [2008-185859](#)
RE : to add the land described in Schedule C to the Mortgage

9. The terms and provisions contained in the following:

INSTRUMENT : SECOND ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS

DATED : April 1, 2005
RECORDED : Document No. [2005-082367](#)
PARTIES : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company, as "Assignor", and MBIA INSURANCE CORPORATION, a New York stock insurance corporation, as "Assignee"
RE : all rights, title and interest of Assignor to insure the payment and performance of the Reimbursement Agreement dated April 1, 2005 and the Second Mortgage

(Not noted on Transfer Certificate(s) of Title referred to herein)

ABOVE SECOND ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS AMENDED BY INSTRUMENT

DATED : as of December 10, 2008
RECORDED : Document No. [2008-185860](#)
RE : to add the land described in Schedule C

(Not noted on Transfer Certificate(s) of Title referred to herein)

SCHEDULE B CONTINUED

10. Encroachments or any other matters which a survey prepared after November 27, 2006 would disclose.

11. Unrecorded leases and agreements, and matters arising from or affecting the same.

12. LEASE UNRECORDED

LESSOR : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company

LESSEE : MONSANTO COMPANY, a Delaware corporation

DATED : October 30, 2009

TERM : Commence on November 1, 2009, and shall end on October 31, 2039, unless earlier terminated

MEMORANDUM OF LEASE dated October 30, 2009, filed as Land Court Document No. [3916672](#), recorded as Document No. [2009-176891](#)

SUBORDINATION, NON-DISTURBANCE AND ATTORNMENMENT AGREEMENT dated October 30, 2009, recorded as Document No. [2009-176892](#), filed as Land Court Document No. [3916673](#), by and between U.S. BANK NATIONAL ASSOCIATION, "Mortgagee", ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company, "Landlord", and MONSANTO COMPANY, a Delaware corporation, "Tenant"; re: said Lease is subject and subordinate to the lien of Mortgage filed as Land Court Document No. [3258660](#), recorded as Document No. [2005-082364](#).

SCHEDULE B CONTINUED

SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT dated October 30, 2009, recorded as Document No. [2009-176893](#), by and between NATIONAL PUBLIC FINANCE GUARANTEE CORPORATION, a stock insurance corporation, duly organized and existing under the laws of the State of Illinois, as reinsurer of one or more financial guaranty insurance policies pursuant to the Quota Share Reinsurance Agreement, effective as of January 1, 2009, by and between MBIA Insurance Corporation and MBIA Insurance Corp. of Illinois, now known as Nation Public Finance Guarantee Corporation, "Mortgagee", ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company, "Landlord", and MONSANTO COMPANY, a Delaware corporation, "Tenant"; re: said Lease is subject and subordinate to the lien of Mortgage filed as Land Court Document No. [3258661](#), recorded as Document No. [2005-082366](#).

(Not noted on Transfer Certificate(s) of Title referred to herein)

END OF SCHEDULE B

SCHEDULE C

-PARCEL FIRST:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT M-4, area 3.307 acres, more or less, as shown on Map [4](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased.

Being the land(s) described in Transfer Certificate of Title No. 930,576 issued to ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company.

-PARCEL SECOND:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT M-5, area 0.676 acre, more or less, as shown on Map [4](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased.

Being the land(s) described in Transfer Certificate of Title No. 930,577 issued to ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company.

SCHEDULE C CONTINUED

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED WITH
COVENANTS AND RESERVATION OF RIGHTS

GRANTOR : JAMES CAMPBELL COMPANY LLC, a Delaware limited
liability company

GRANTEE : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited
liability company

DATED : as of December 10, 2008

FILED : Land Court Document No. [3812212](#)

RECORDED : Document No. [2008-185856](#)

END OF SCHEDULE C

GENERAL NOTES

1. There is hereby omitted from any covenants, conditions and reservations contained herein any covenant or restriction based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law. Lawful restrictions under state or federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

GUIDELINES FOR THE ISSUANCE OF INSURANCE

- A. Taxes shown in Schedule B are as of the date such information is available from the taxing authority. Evidence of payment of all taxes and assessments subsequent to such date must be provided prior to recordation.
 - B. Evidence of authority regarding the execution of all documents pertaining to the transaction is required prior to recordation. This includes corporate resolutions, copies of partnership agreements, powers of attorney and trust instruments.
 - C. If an entity (corporation, partnership, limited liability company, etc.) is not registered in Hawaii, evidence of its formation and existence under the laws where such entity is formed must be presented prior to recordation.
 - D. If the transaction involves a construction loan, the following is required:
 - (1) a letter confirming that there is no construction prior to recordation; or
 - (2) if there is such construction, appropriate indemnity agreements, financial statements and other relevant information from the owner, developer, general contractor and major sub-contractors must be submitted to the Title Company for approval at least one week prior to the anticipated date of recordation.
- Forms are available upon request from Title Guaranty of Hawaii.
- E. Chapter 669, Hawaii Revised Statutes, sets forth acceptable tolerances for discrepancies in structures or improvements relative to private property boundaries for various classes of real property. If your survey map shows a position discrepancy that falls within the tolerances of Chapter 669, call your title officer as affirmative coverage may be available to insured lenders.
 - F. The right is reserved to make additional exceptions and/or requirements upon examination of all documents submitted in connection with this transaction.
 - G. If a policy of title insurance is issued, it will exclude from coverage all matters set forth in Schedule B of this report and in the printed Exclusions from Coverage contained in an ALTA policy or in the Hawaii Standard Owner's Policy, as applicable. Different forms may have different exclusions and should be reviewed. Copies of the policy forms are available upon request from Title Guaranty of Hawaii or on our website at www.tghawaii.com.

DATE PRINTED: 2/22/2010

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: JAMES CAMPBELL COMPANY LLC
LEASED TO : OAHU SUGAR CO LTD

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.
(1) 9 2 005 001 0000

CLASS: 0,5 AREA ASSESSED: 3.983 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2009

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$	46,700	
EXEMPTION	\$	0	
NET VALUE	\$	46,700	
LAND	\$	36,400	AGRICULTURAL USE VALUE
EXEMPTION	\$	0	
NET VALUE	\$	36,400	
TOTAL NET VALUE	\$	83,100	

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 9/30/2009

Tax Year	Installment	Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2009	2	253.77				253.77	PENDING
2009	1	253.78				253.78	PAID
2008	2	130.24	13.02	7.16		150.42	PAID
2008	1	130.25				130.25	PAID
Total Amount Due:						253.77	

Penalty and Interest Computed to: 9/30/2009

DATE PRINTED: 2/22/2010

CLASS BREAKDOWN FOR TAX MAP KEY BELOW:

		TAX MAP KEY				
DIVISION	ZONE	SECTION	PLAT	PARCEL	HPR NO.	
(1)	9	2	005	001	0000	
CLASS: 0		AREA ASSESSED:			3.983 AC	
BUILDING		\$		0		
EXEMPTION		\$		0		
NET VALUE		\$		0		
LAND		\$	12,100	AGRICULTURAL USE VALUE		
EXEMPTION		\$		0		
NET VALUE		\$	12,100			
TOTAL NET VALUE		\$	12,100			

		TAX MAP KEY				
DIVISION	ZONE	SECTION	PLAT	PARCEL	HPR NO.	
(1)	9	2	005	001	0000	
CLASS: 5		AREA ASSESSED:			.000 AC	
BUILDING		\$	46,700			
EXEMPTION		\$		0		
NET VALUE		\$	46,700			
LAND		\$	24,300	AGRICULTURAL USE VALUE		
EXEMPTION		\$		0		
NET VALUE		\$	24,300			
TOTAL NET VALUE		\$	71,000			

STATUS REPORT

Maximum liability limited to
\$3,500.00

This report (and any revisions thereto) is issued solely for the convenience of the titleholder, the titleholder's agent, counsel, purchaser or mortgagee, or the person ordering it.

SCHEDULE A

Title Guaranty of Hawaii, Incorporated, hereby reports that, subject to those matters set forth in Schedule "B" hereof, the title to the estate or interest to the land described in Schedule "C" hereof is vested in:

ARMY HAWAII FAMILY HOUSING LLC,
a Delaware limited liability company,
as to Lot 17846,
HAWAII AGRICULTURE RESEARCH CENTER,
a Hawaii nonprofit corporation,
as to Lot 17847,
as Fee Owner

This report is dated as of February 5, 2010 at 8:00 a.m.

Inquiries concerning this report should be directed to OFELIA LOPEZ.
Email olopez@tghawaii.com
Fax (808) 521-0210
Telephone (808) 533-5831.
Refer to Order No. 201004417G.

**SCHEDULE B
EXCEPTIONS**

1. Real Property Taxes, if any, that may be due and owing.

-PARCEL FIRST:- is(are) covered by Tax Key: [\(1\) 9-2-005-022](#).

-PARCEL SECOND:- is(are) covered by Tax Key: [\(1\) 9-2-005-023](#).

-Note:- Attention is invited to the fact that the premises covered herein may be subject to possible rollback or retroactive property taxes.

2. DESIGNATION OF EASEMENT "24"

SHOWN : on Map [9](#), as set forth by Land Court Order No. [3052](#), filed March 14, 1938

3. GRANT

TO : STATE OF HAWAII

DATED : March 31, 1938

FILED : Land Court Document No. [43225](#)

GRANTING : an easement over said Easement "24"

4. -AS TO LOT 17846:-

(A) DESIGNATION OF EASEMENT "103"

SHOWN : on Map [50](#), as set forth by Land Court Order No. [9534](#), filed April 20, 1950

(B) DESIGNATION OF EASEMENT "104"

SHOWN : on Map [50](#), as set forth by Land Court Order No. [9534](#), filed April 20, 1950

SCHEDULE B CONTINUED

(C) GRANT

TO : UNITED STATES OF AMERICA

DATED : August 23, 1950

FILED : Land Court Document No. [122254](#)

GRANTING : a perpetual and exclusive easement for Military purposes over said Easements "103" and "104"

(D) LEASE OF RIGHT OF WAY

TO : HAWAIIAN ELECTRIC COMPANY, INC.

DATED : November 25, 1959

FILED : Land Court Document No. [260885](#)

LEASING : a right of way in the nature of an easement for utility purposes; said easement being twenty-five (25) feet wide, extending twelve and one-half (12-1/2) feet on each side of the center line, as shown on Map [1006](#)-734 of the Lessee, attached thereto.

(E) LEASE OF RIGHT OF WAY

TO : HAWAIIAN ELECTRIC COMPANY, INC. and HAWAIIAN TELEPHONE COMPANY, now known as HAWAIIAN TELCOM, INC.

DATED : February 10, 1961

FILED : Land Court Document No. [271300](#)

LEASING : a right of way in the nature of an easement for utility purposes; said easement being twenty-five (25) feet wide, extending twelve and one-half (12-1/2) feet on each side of the center line, as shown on Map [60](#)-40 of Lessee The Hawaii Electric Company, Limited, attached thereto

(F) LEASE OF RIGHT OF WAY

TO : HAWAIIAN TELEPHONE COMPANY, now known as HAWAIIAN TELCOM, INC.

DATED : December 11, 1964

FILED : Land Court Document No. [351850](#)

LEASING : a right of way in the nature of an easement for utility purposes

SCHEDULE B CONTINUED

Subject to the rights of the United States of America as set forth in Grant of Easement dated August 23, 1950, filed as Land Court Document No. [122254](#).

(G) LEASE OF RIGHT OF WAY

TO : HAWAIIAN TELEPHONE COMPANY, now known as HAWAIIAN
TELCOM, INC.

DATED : December 1, 1968

FILED : Land Court Document No. [804694](#)

LEASING : a right of way in the nature of an easement for
utility purposes being twenty-five (25) by thirty-
five (35) feet (repeater sites) as shown on Exhibits
"A" and "F" attached thereto

(H) GRANT

TO : HAWAIIAN ELECTRIC COMPANY, INC.

DATED : June 6, 1996

FILED : Land Court Document No. [2331471](#)

GRANTING : a perpetual right and easement for utility purposes
being twenty-five (25) feet wide extending 12-1/2
feet on each side of the centerline located as
shown on Map [79](#)-19 attached thereto

(I) GRANT

TO : HAWAIIAN ELECTRIC COMPANY, INC.

DATED : June 10, 1998

FILED : Land Court Document No. [2490187](#)

GRANTING : a perpetual right and easement for utility purposes
being twenty-five (25) feet wide extending 12-1/2
feet on each side of the centerline located as
shown on Map [79](#)-19D attached thereto

SCHEDULE B CONTINUED

(J) Any rights or interest which may exist or arise by reason of the following facts shown on survey map prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying LLC, last revised November 27, 2006:

- (1) Utility box appurtenant to adjoining lot lies entirely within subject lot.
- (2) Chain link fences appurtenant to adjoining lots lie within subject lot.
- (3) Electric poles and overhead lines appurtenant to adjoining lots cross into subject lot.
- (4) Barb wire fence appurtenant to subject lot crosses into adjoining lot.
- (5) AC driveway.
- (6) Concrete driveway.
- (7) Overhead line crosses subject lot.

(K) Reservoir as shown on survey map prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying LLC, last revised November 27, 2006.

(L) Rights of others who may have easement or access rights in the land described in Schedule C.

(M) The terms and provisions contained in the following:

INSTRUMENT : LIMITED WARRANTY DEED WITH COVENANTS AND
RESERVATION OF RIGHTS

DATED : as of December 10, 2008
FILED : Land Court Document No. [3812212](#)
RECORDED : Document No. [2008-185856](#)

SCHEDULE B CONTINUED

(N) REAL PROPERTY LEASEHOLD MORTGAGE, SECURITY AGREEMENT,
ASSIGNMENT OF RENTS AND LEASES, FIXTURE FILING AND FINANCING
STATEMENT

MORTGAGOR : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited
liability company

MORTGAGEE : U.S. BANK NATIONAL ASSOCIATION, a national banking
association

DATED : April 1, 2005, effective as of April 26, 2005

FILED : Land Court Document No. [3258660](#)

RECORDED : Document No. [2005-082364](#)

AMOUNT : \$1,597,500,000.00 - covers the land described
herein, besides other land

ABOVE MORTGAGE AMENDED BY INSTRUMENT

DATED : as of December 10, 2008

FILED : Land Court Document No. [3812214](#)

RECORDED : Document No. [2008-185857](#)

RE : to add the land described in Schedule C to the
Mortgage

(O) The terms and provisions contained in the following:

INSTRUMENT : ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS

DATED : April 1, 2005

RECORDED : Document No. [2005-082365](#)

PARTIES : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited
liability company, as "Assignor", and U.S. BANK
NATIONAL ASSOCIATION, not in its individual
capacity, but solely as Trustee under a Trust
Indenture dated as of April 1, 2005, as "Assignee"

RE : all rights, title and interest of Assignor to
insure the payment and performance of the Mortgage

(Not noted on Transfer Certificate(s) of Title referred to
herein)

SCHEDULE B CONTINUED

ABOVE ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS AMENDED
BY INSTRUMENT

DATED : as of December 10, 2008
RECORDED : Document No. [2008-185858](#)
RE : to add the land described in Schedule C

(Not noted on Transfer Certificate(s) of Title referred to
herein)

(P) SECOND REAL PROPERTY LEASEHOLD MORTGAGE, SECURITY AGREEMENT,
ASSIGNMENT OF RENTS AND LEASES, FIXTURE FILING AND FINANCING
STATEMENT

MORTGAGOR : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited
liability company

MORTGAGEE : MBIA INSURANCE CORPORATION, a stock insurance
corporation duly organized and existing under the
laws of the State of New York, as indenture trustee

DATED : April 1, 2005, effective as of April __, 2005
FILED : Land Court Document No. [3258661](#)
RECORDED : Document No. [2005-082366](#)
AMOUNT : obligations pursuant to Reimbursement Agreement
dated April 1, 2005 - covers the land described
herein, besides other land

ABOVE MORTGAGE AMENDED BY INSTRUMENT

DATED : as of December 10, 2008
FILED : Land Court Document No. [3812215](#)
RECORDED : Document No. [2008-185859](#)
RE : to add the land described in Schedule C to the
Mortgage

SCHEDULE B CONTINUED

(Q) The terms and provisions contained in the following:

INSTRUMENT : SECOND ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS

DATED : April 1, 2005

RECORDED : Document No. [2005-082367](#)

PARTIES : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company, as "Assignor", and MBIA INSURANCE CORPORATION, a New York stock insurance corporation, as "Assignee"

RE : all rights, title and interest of Assignor to insure the payment and performance of the Reimbursement Agreement dated April 1, 2005 and the Second Mortgage

(Not noted on Transfer Certificate(s) of Title referred to herein)

ABOVE SECOND ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS AMENDED BY INSTRUMENT

DATED : as of December 10, 2008

RECORDED : Document No. [2008-185860](#)

RE : to add the land described in Schedule C

(Not noted on Transfer Certificate(s) of Title referred to herein)

(R) GRANT

TO : HAWAII AGRICULTURE RESEARCH CENTER, a Hawaii nonprofit corporation

DATED : November 11, 2009

FILED : Land Court Document No. [3916315](#)

GRANTING : the right, in the nature of a nonexclusive easement for utility purposes over said easement area located within Lot 17846

SCHEDULE B CONTINUED

(S) LEASE UNRECORDED

LESSOR : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company

LESSEE : MONSANTO COMPANY, a Delaware corporation

DATED : October 30, 2009

TERM : Commence on November 1, 2009, and shall end on October 31, 2039, unless earlier terminated

MEMORANDUM OF LEASE dated October 30, 2009, filed as Land Court Document No. [3916672](#), recorded as Document No. [2009-176891](#)

SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT dated October 30, 2009, recorded as Document No. [2009-176892](#), filed as Land Court Document No. [3916673](#), by and between U.S. BANK NATIONAL ASSOCIATION, "Mortgagee", ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company, "Landlord", and MONSANTO COMPANY, a Delaware corporation, "Tenant"; re: said Lease is subject and subordinate to the lien of Mortgage filed as Land Court Document No. [3258660](#), recorded as Document No. [2005-082364](#).

SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT dated October 30, 2009, recorded as Document No. [2009-176893](#), by and between NATIONAL PUBLIC FINANCE GUARANTEE CORPORATION, a stock insurance corporation, duly organized and existing under the laws of the State of Illinois, as reinsurer of one or more financial guaranty insurance policies pursuant to the Quota Share Reinsurance Agreement, effective as of January 1, 2009, by and between MBIA Insurance Corporation and MBIA Insurance Corp. of Illinois, now known as Nation Public Finance Guarantee Corporation, "Mortgagee", ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company, "Landlord", and MONSANTO COMPANY, a Delaware corporation, "Tenant"; re: said Lease is subject and subordinate to the lien of Mortgage filed as Land Court Document No. [3258661](#), recorded as Document No. [2005-082366](#).

(Not noted on Transfer Certificate(s) of Title referred to herein)

SCHEDULE B CONTINUED

5. -AS TO LOT 17847:-

(A) Various Kunia Camps as shown on Tax Map.

(B) LEASE OF RIGHT OF WAY

TO : HAWAIIAN TELEPHONE COMPANY, now known as HAWAIIAN
TELCOM, INC.

DATED : October 31, 1957

FILED : Land Court Document No. [211436](#)

LEASING : for utility purposes, terminating June 30, 1979, and
thereafter from year to year

(C) LEASE OF RIGHT OF WAY

TO : HAWAIIAN ELECTRIC COMPANY, INC. and HAWAIIAN
TELEPHONE COMPANY, now known as HAWAIIAN TELCOM,
INC.

DATED : September 20, 1960

FILED : Land Court Document No. [266064](#)

LEASING : a right of way in the nature of an easement for
utility purposes; said easement being twenty-five
(25) feet wide, extending twelve and one-half (12-
1/2) feet on each side of the center line, as shown
on Map [60](#)-78 of Lessee The Hawaiian Electric
Company, Limited, attached thereto

(D) LEASE OF RIGHT OF WAY

TO : HAWAIIAN ELECTRIC COMPANY, INC. and HAWAIIAN
TELEPHONE COMPANY, now known as HAWAIIAN TELCOM,
INC.

DATED : February 10, 1961

FILED : Land Court Document No. [271300](#)

LEASING : a right of way in the nature of an easement for
utility purposes; said easement being twenty-five
(25) feet wide, extending twelve and one-half (12-
1/2) feet on each side of the center line, as shown
on Map [60](#)-40 of Lessee The Hawaii Electric Company,
Limited, attached thereto

(E) Water rights, claims or title to water, whether or not shown
by the public records.

SCHEDULE B CONTINUED

(F) GRANT

TO : THE TRUST FOR PUBLIC LAND, a California nonprofit
public benefit corporation

DATED : September 30, 2009

FILED : Land Court Document No. [3903250](#)

GRANTING : the right, in the nature of a nonexclusive easement
over the easement area located within Lot 17847

(G) The terms and provisions contained in the following:

INSTRUMENT : LIMITED WARRANTY DEED

DATED : November 11, 2009

FILED : Land Court Document No. [3916314](#)

6. The terms and provisions contained in the following:

INSTRUMENT : TRUSTEES LIMITED WARRANTY DEED

DATED : November 1, 2006

FILED : Land Court Document No. [3505988](#)

RECORDED : Document No. [2006-198463](#)

7. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF SITE ACCESS; JOINDER

DATED : _____, 2007 (acknowledged October 15, 2007,
October 30, 2007 and November 2, 2007)

FILED : Land Court Document No. [3676945](#)

RECORDED : Document No. [2007-193800](#)

RE : environmental covenant

8. The terms and provisions contained in the following:

SCHEDULE B CONTINUED

INSTRUMENT : DECLARATION OF ENVIRONMENTAL RESTRICTIONS (WELL
RESTRICTION AREA); JOINDER

DATED : _____, 2007 (acknowledged October 15, 2007,
October 30, 2007 and November 2, 2007)

FILED : Land Court Document No. [3676946](#)

RECORDED : Document No. [2007-193801](#)

9. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF COVENANTS REGARDING WATER ALLOCATION
AND EASEMENTS

DATED : December 13, 2007

FILED : Land Court Document No. [3694441](#)

RECORDED : Document No. [2007-219110](#)

Said above Declaration has been amended and restated by AMENDED
AND RESTATED DECLARATION OF COVENANTS REGARDING WATER ALLOCATION
AND EASEMENTS dated August 21, 2008, filed as Land Court Document
No. [3782044](#), recorded as Document No. [2008-133157](#).

10. Encroachments or any other matters as shown on survey map
prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying
LLC, dated ---, last revised November 27, 2006.
11. Encroachments or any other matters which a survey prepared after
November 27, 2006 would disclose.
12. Any unrecorded leases and agreements, and matters arising from or
affecting the same.
13. Claims arising out of customary and traditional rights and
practices, including without limitation those exercised for
subsistence, cultural, religious, access or gathering purposes,
as provided for in the Hawaii Constitution or the Hawaii Revised
Statutes.

END OF SCHEDULE B

SCHEDULE C

-PARCEL FIRST:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT 17846, GROSS area 2,542.363 acres, LESS Lots M-2, 17847, M-4, M-5, M-13, M-1-B and M-1-A-2, Exclusions 38, 39 and 40, area 146.402 acres, NET area 2,395.961 acres, more or less, as shown on Map [1370](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased;

Being the land(s) described in Transfer Certificate of Title No. 930,578 issued to ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company.

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

GRANTOR : JAMES CAMPBELL COMPANY LLC, a Delaware limited liability company

GRANTEE : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company

DATED : as of December 10, 2008

FILED : Land Court Document No. [3812212](#)

RECORDED : Document No. [2008-185856](#)

-AS TO LOT 17846:-

Together with a nonexclusive easement over Lot M-8-B, more particularly described therein, for vehicular and pedestrian access (parking of vehicles within the easement area is prohibited), granted by instrument dated December 10, 2008, filed as Land Court Document No. [3812213](#); and subject to the terms and provisions contained therein.

SCHEDULE C CONTINUED

-PARCEL SECOND:-

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, State of Hawaii, described as follows:

LOT 17847, area 119.086 acres, more or less, as shown on Map [1370](#), filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, deceased.

Being the land(s) described in Transfer Certificate of Title No. 964,710 issued to HAWAII AGRICULTURE RESEARCH CENTER, a Hawaii nonprofit corporation.

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

GRANTOR : JAMES CAMPBELL COMPANY LLC, a Delaware limited liability company

GRANTEE : HAWAII AGRICULTURE RESEARCH CENTER, a Hawaii nonprofit corporation

DATED : November 11, 2009

FILED : Land Court Document No. [3916314](#)

END OF SCHEDULE C

GENERAL NOTES

1. There is hereby omitted from any covenants, conditions and reservations contained herein any covenant or restriction based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law. Lawful restrictions under state or federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

GUIDELINES FOR THE ISSUANCE OF INSURANCE

- A. Taxes shown in Schedule B are as of the date such information is available from the taxing authority. Evidence of payment of all taxes and assessments subsequent to such date must be provided prior to recordation.
 - B. Evidence of authority regarding the execution of all documents pertaining to the transaction is required prior to recordation. This includes corporate resolutions, copies of partnership agreements, powers of attorney and trust instruments.
 - C. If an entity (corporation, partnership, limited liability company, etc.) is not registered in Hawaii, evidence of its formation and existence under the laws where such entity is formed must be presented prior to recordation.
 - D. If the transaction involves a construction loan, the following is required:
 - (1) a letter confirming that there is no construction prior to recordation; or
 - (2) if there is such construction, appropriate indemnity agreements, financial statements and other relevant information from the owner, developer, general contractor and major sub-contractors must be submitted to the Title Company for approval at least one week prior to the anticipated date of recordation.
- Forms are available upon request from Title Guaranty of Hawaii.
- E. Chapter 669, Hawaii Revised Statutes, sets forth acceptable tolerances for discrepancies in structures or improvements relative to private property boundaries for various classes of real property. If your survey map shows a position discrepancy that falls within the tolerances of Chapter 669, call your title officer as affirmative coverage may be available to insured lenders.
 - F. The right is reserved to make additional exceptions and/or requirements upon examination of all documents submitted in connection with this transaction.
 - G. If a policy of title insurance is issued, it will exclude from coverage all matters set forth in Schedule B of this report and in the printed Exclusions from Coverage contained in an ALTA policy or in the Hawaii Standard Owner's Policy, as applicable. Different forms may have different exclusions and should be reviewed. Copies of the policy forms are available upon request from Title Guaranty of Hawaii or on our website at www.tghawaii.com.

DATE PRINTED: 2/22/2010

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: JAMES CAMPBELL COMPANY LLC
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.
(1) 9 2 005 022 0000

CLASS: 0,4,5 AREA ASSESSED: 2395.961 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2009

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING \$ 51,300
EXEMPTION \$ 0
NET VALUE \$ 51,300
LAND \$ 29,259,600
EXEMPTION \$ 0
NET VALUE \$ 29,259,600
TOTAL NET VALUE \$ 29,310,900

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 9/30/2009

Tax Year	Installment	Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2009	2	122,187.94				122,187.94	PENDING
2009	1	122,187.94				122,187.94	PAID
						Total Amount Due:	122,187.94

Penalty and Interest Computed to: 9/30/2009

DATE PRINTED: 2/22/2010

CLASS BREAKDOWN FOR TAX MAP KEY BELOW:

		TAX MAP KEY				
DIVISION	ZONE	SECTION	PLAT	PARCEL	HPR NO.	
(1)	9	2	005	022	0000	
CLASS: 0		AREA ASSESSED:			2309.810 AC	
BUILDING				\$	0	
EXEMPTION				\$	0	
NET VALUE				\$	0	
LAND				\$	27,475,200	
EXEMPTION				\$	0	
NET VALUE				\$	27,475,200	
TOTAL NET VALUE				\$	27,475,200	

		TAX MAP KEY				
DIVISION	ZONE	SECTION	PLAT	PARCEL	HPR NO.	
(1)	9	2	005	022	0000	
CLASS: 4		AREA ASSESSED:			1.973 AC	
BUILDING				\$	43,700	
EXEMPTION				\$	0	
NET VALUE				\$	43,700	
LAND				\$	12,000	
EXEMPTION				\$	0	
NET VALUE				\$	12,000	
TOTAL NET VALUE				\$	55,700	

		TAX MAP KEY				
DIVISION	ZONE	SECTION	PLAT	PARCEL	HPR NO.	
(1)	9	2	005	022	0000	
CLASS: 5		AREA ASSESSED:			84.178 AC	
BUILDING				\$	7,600	
EXEMPTION				\$	0	
NET VALUE				\$	7,600	
LAND				\$	1,772,400	
EXEMPTION				\$	0	
NET VALUE				\$	1,772,400	
TOTAL NET VALUE				\$	1,780,000	

DATE PRINTED: 2/22/2010

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: JAMES CAMPBELL COMPANY LLC
LEASED TO :

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.
(1) 9 2 005 023 0000

CLASS: 0,3,5 AREA ASSESSED: 5,187,386 SF

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2009

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING \$ 3,961,200
EXEMPTION \$ 0
NET VALUE \$ 3,961,200
LAND \$ 3,165,400
EXEMPTION \$ 0
NET VALUE \$ 3,165,400
TOTAL NET VALUE \$ 7,126,600

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 9/30/2009

Tax Year	Installment	Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2009	2	23,426.77				23,426.77	PENDING
2009	1	23,426.77				23,426.77	PAID
						Total Amount Due:	23,426.77

Penalty and Interest Computed to: 9/30/2009

DATE PRINTED: 2/22/2010

CLASS BREAKDOWN FOR TAX MAP KEY BELOW:

		TAX MAP KEY				
DIVISION	ZONE	SECTION	PLAT	PARCEL	HPR NO.	
(1)	9	2	005	023	0000	
CLASS: 0		AREA ASSESSED:			2,023,493 SF	
BUILDING		\$		0		
EXEMPTION		\$		0		
NET VALUE		\$		0		
LAND		\$	552,600			
EXEMPTION		\$		0		
NET VALUE		\$	552,600			
TOTAL NET VALUE		\$	552,600			

		TAX MAP KEY				
DIVISION	ZONE	SECTION	PLAT	PARCEL	HPR NO.	
(1)	9	2	005	023	0000	
CLASS: 3		AREA ASSESSED:			43,560 SF	
BUILDING		\$	4,800			
EXEMPTION		\$	0			
NET VALUE		\$	4,800			
LAND		\$	694,400			
EXEMPTION		\$	0			
NET VALUE		\$	694,400			
TOTAL NET VALUE		\$	699,200			

		TAX MAP KEY				
DIVISION	ZONE	SECTION	PLAT	PARCEL	HPR NO.	
(1)	9	2	005	023	0000	
CLASS: 5		AREA ASSESSED:			3,120,333 SF	
BUILDING		\$	3,956,400			
EXEMPTION		\$	0			
NET VALUE		\$	3,956,400			
LAND		\$	1,918,400			
EXEMPTION		\$	0			
NET VALUE		\$	1,918,400			
TOTAL NET VALUE		\$	5,874,800			

STATUS REPORT

Maximum liability limited to
\$3,500.00

This report (and any revisions thereto) is issued solely for the convenience of the titleholder, the titleholder's agent, counsel, purchaser or mortgagee, or the person ordering it.

SCHEDULE A

Title Guaranty of Hawaii, Incorporated, hereby reports that, subject to those matters set forth in Schedule "B" hereof, the title to the estate or interest to the land described in Schedule "C" hereof is vested in:

ARMY HAWAII FAMILY HOUSING LLC,
a Delaware limited liability company,
as Fee Owner

This report is dated as of February 5, 2010 at 8:00 a.m.

Inquiries concerning this report should be directed to OFELIA LOPEZ.
Email olopez@tghawaii.com
Fax (808) 521-0210
Telephone (808) 533-5831.
Refer to Order No. 201004417A.

**SCHEDULE B
EXCEPTIONS**

1. Real Property Taxes, if any, that may be due and owing.

Tax Key: [\(1\) 9-4-004-005](#) Area Assessed: 0.274 acre

2. Reservation in favor of the State of Hawaii of all mineral and metallic mines.

3. Electrical overhead line appurtenant road right of way crosses through subject parcel for a total distance of 592.0 feet, as shown on survey map prepared by Kevin K. Kea, Land Surveyor, with Ace Land Surveying LLC, dated revised October 31, 2006.

4. The terms and provisions contained in the following:

INSTRUMENT : TRUSTEES LIMITED WARRANTY DEED

DATED : November 1, 2006

FILED : Land Court Document No. [3505988](#)

RECORDED : Document No. [2006-198463](#)

5. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF SITE ACCESS; JOINDER

DATED : _____, 2007 (acknowledged October 15, 2007, October 30, 2007 and November 2, 2007)

FILED : Land Court Document No. [3676945](#)

RECORDED : Document No. [2007-193800](#)

SCHEDULE B CONTINUED

6. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF ENVIRONMENTAL RESTRICTIONS (WELL RESTRICTION AREA); JOINDER

DATED : _____, 2007 (acknowledged October 15, 2007, October 30, 2007 and November 2, 2007)

FILED : Land Court Document No. [3676946](#)

RECORDED : Document No. [2007-193801](#)

7. The terms and provisions contained in the following:

INSTRUMENT : DECLARATION OF COVENANTS REGARDING WATER ALLOCATION AND EASEMENTS

DATED : December 13, 2007

FILED : Land Court Document No. [3694441](#)

RECORDED : Document No. [2007-219110](#)

Said above Declaration has been amended and restated by AMENDED AND RESTATED DECLARATION OF COVENANTS REGARDING WATER ALLOCATION AND EASEMENTS dated August 21, 2008, filed as Land Court Document No. [3782044](#), recorded as Document No. [2008-133157](#).

8. The terms and provisions contained in the following:

INSTRUMENT : LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

DATED : as of December 10, 2008

FILED : Land Court Document No. [3812212](#)

RECORDED : Document No. [2008-185856](#)

9. REAL PROPERTY LEASEHOLD MORTGAGE, SECURITY AGREEMENT, ASSIGNMENT OF RENTS AND LEASES, FIXTURE FILING AND FINANCING STATEMENT

MORTGAGOR : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company

SCHEDULE B CONTINUED

MORTGAGEE : U.S. BANK NATIONAL ASSOCIATION, a national banking association

DATED : April 1, 2005, effective as of April 26, 2005

FILED : Land Court Document No. [3258660](#)

RECORDED : Document No. [2005-082364](#)

AMOUNT : \$1,597,500,000.00 - covers the land described herein, besides other land

ABOVE MORTGAGE AMENDED BY INSTRUMENT

DATED : December 10, 2008

FILED : Land Court Document No. [3812214](#)

RECORDED : Document No. [2008-185857](#)

RE : to add the land described in Schedule C to said above Mortgage

10. The terms and provisions contained in the following:

INSTRUMENT : ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS

DATED : April 1, 2005

RECORDED : Document No. [2005-082365](#)

PARTIES : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company, as "Assignor", and U.S. BANK NATIONAL ASSOCIATION, not in its individual capacity, but solely as Trustee under a Trust Indenture dated as of April 1, 2005, as "Assignee"

RE : all rights, title and interest of Assignor to insure the payment and performance of the Mortgage

ABOVE ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS AMENDED BY INSTRUMENT

DATED : as of December 10, 2008

RECORDED : Document No. [2008-185858](#)

RE : to add the land described in Schedule C to said above Assignment of Leases, Rents and Security Deposits

SCHEDULE B CONTINUED

11. SECOND REAL PROPERTY LEASEHOLD MORTGAGE, SECURITY AGREEMENT, ASSIGNMENT OF RENTS AND LEASES, FIXTURE FILING AND FINANCING STATEMENT

MORTGAGOR : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company

MORTGAGEE : MBIA INSURANCE CORPORATION, a stock insurance corporation duly organized and existing under the laws of the State of New York, as indenture trustee

DATED : April 1, 2005, effective as of April __, 2005

FILED : Land Court Document No. [3258661](#)

RECORDED : Document No. [2005-082366](#)

AMOUNT : obligations pursuant to Reimbursement Agreement dated April 1, 2005 - covers the land described herein, besides other land

ABOVE MORTGAGE AMENDED BY INSTRUMENT

DATED : as of December 10, 2008

FILED : Land Court Document No. [3812215](#)

RECORDED : Document No. [2008-185859](#)

RE : to add the land described in Schedule C to said above Mortgage

12. The terms and provisions contained in the following:

INSTRUMENT : SECOND ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS

DATED : April 1, 2005

RECORDED : Document No. [2005-082367](#)

PARTIES : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company, as "Assignor", and MBIA INSURANCE CORPORATION, a New York stock insurance corporation, as "Assignee"

RE : all rights, title and interest of Assignor to insure the payment and performance of the Reimbursement Agreement dated April 1, 2005 and the Second Mortgage

SCHEDULE B CONTINUED

ABOVE SECOND ASSIGNMENT OF LEASES, RENTS AND SECURITY DEPOSITS
AMENDED BY INSTRUMENT

DATED : as of December 10, 2008
RECORDED : Document No. [2008-185860](#)
RE : to add the land described in Schedule C to said
above Second Assignment of Leases, Rents and
Security Deposits

13. Encroachments or any other matters which a survey prepared after November 27, 2006 would disclose.
14. Unrecorded leases and agreements, and matters arising from or affecting the same.

END OF SCHEDULE B

SCHEDULE C

All of that certain parcel of land (being portion of the land(s) described in and covered by Royal Patent Number 4490, Land Commission Award 10,474, Apana 9 to N. Namauu) situate, lying and being on the westerly side of Kunia Road at Hoaeae, District of Ewa, City and County of Honolulu, State of Hawaii, being PARCEL 5, and thus bounded and described August 8, 1988, to wit:

Beginning at the north corner of this parcel of land and on the westerly side of Kunia Road, the coordinates of said point of beginning referred to Government Survey Triangulation Station "KAPUAI NEW" being 22,750.96 feet north and 4,331.52 feet east, thence running by azimuths measured clockwise from true South:

1. Along the westerly side of Kunia Road, on a curve to the left with a radius of 2,894.90 feet, the azimuth and distance of the chord being:

345° 29' 57" 611.81 feet;
2. 159° 26' 573.67 feet along Lot M-1-A-1 of Land Application 1069;
3. 221° 12' 30" 73.38 feet along Lot M-1-A-1 of Land Court Application 1069 to the point of beginning and containing an area of 11,930 square feet, more or less.

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED WITH COVENANTS AND RESERVATION OF RIGHTS

GRANTOR : JAMES CAMPBELL COMPANY LLC, a Delaware limited liability company

GRANTEE : ARMY HAWAII FAMILY HOUSING LLC, a Delaware limited liability company

SCHEDULE C CONTINUED

DATED : as of December 10, 2008
FILED : Land Court Document No. [3812212](#)
RECORDED : Document No. [2008-185856](#)

END OF SCHEDULE C

GENERAL NOTES

1. There is hereby omitted from any covenants, conditions and reservations contained herein any covenant or restriction based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law. Lawful restrictions under state or federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

GUIDELINES FOR THE ISSUANCE OF INSURANCE

- A. Taxes shown in Schedule B are as of the date such information is available from the taxing authority. Evidence of payment of all taxes and assessments subsequent to such date must be provided prior to recordation.
 - B. Evidence of authority regarding the execution of all documents pertaining to the transaction is required prior to recordation. This includes corporate resolutions, copies of partnership agreements, powers of attorney and trust instruments.
 - C. If an entity (corporation, partnership, limited liability company, etc.) is not registered in Hawaii, evidence of its formation and existence under the laws where such entity is formed must be presented prior to recordation.
 - D. If the transaction involves a construction loan, the following is required:
 - (1) a letter confirming that there is no construction prior to recordation; or
 - (2) if there is such construction, appropriate indemnity agreements, financial statements and other relevant information from the owner, developer, general contractor and major sub-contractors must be submitted to the Title Company for approval at least one week prior to the anticipated date of recordation.
- Forms are available upon request from Title Guaranty of Hawaii.
- E. Chapter 669, Hawaii Revised Statutes, sets forth acceptable tolerances for discrepancies in structures or improvements relative to private property boundaries for various classes of real property. If your survey map shows a position discrepancy that falls within the tolerances of Chapter 669, call your title officer as affirmative coverage may be available to insured lenders.
 - F. The right is reserved to make additional exceptions and/or requirements upon examination of all documents submitted in connection with this transaction.
 - G. If a policy of title insurance is issued, it will exclude from coverage all matters set forth in Schedule B of this report and in the printed Exclusions from Coverage contained in an ALTA policy or in the Hawaii Standard Owner's Policy, as applicable. Different forms may have different exclusions and should be reviewed. Copies of the policy forms are available upon request from Title Guaranty of Hawaii or on our website at www.tghawaii.com.

DATE PRINTED: 2/19/2010

STATEMENT OF ASSESSED VALUES AND REAL PROPERTY TAXES DUE

NAME OF OWNER: JAMES CAMPBELL COMPANY LLC
LEASED TO : OAHU SUGAR CO LTD

TAX MAP KEY

DIVISION ZONE SECTION PLAT PARCEL HPR NO.
(1) 9 4 004 005 0000

CLASS: 5 AREA ASSESSED: .274 AC

ASSESSED VALUES FOR CURRENT YEAR TAXES: 2009

The records of this division show the assessed values and taxes on the property designated by Tax Key shown above are as follows:

BUILDING	\$	0	
EXEMPTION	\$	0	
NET VALUE	\$	0	
LAND	\$	15,000	HIGHEST & BEST USE
EXEMPTION	\$	0	
NET VALUE	\$	15,000	
TOTAL NET VALUE	\$	15,000	

Installment (1 - due 8/20; 2 - due 2/20) Tax Info As Of - 9/30/2009

Tax Year	Installment	Tax Amount	Penalty Amount	Interest Amount	Other Amount	Total Amount	
2009	2	50.00				50.00	PENDING
2009	1	50.00				50.00	PAID
2008	2	50.00	5.00	2.75		57.75	PAID
2008	1	50.00				50.00	PAID
Total Amount Due:						50.00	

Penalty and Interest Computed to: 9/30/2009

DOUBLE SYSTEM

X
2003
3A cr's
C



L-545 STATE OF HAWAII
OFFICE OF ASSISTANT REGISTRAR
RECORDED
NOV 02, 2007 01:00 PM
Doc No(s) 3676946
on Cert(s) AS LISTED HEREIN



R-811 STATE OF HAWAII
BUREAU OF CONVEYANCES
RECORDED
NOV 02, 2007 01:00 PM
Doc No(s) 2007-193801



/s/ CARL T. WATANABE
ASSISTANT REGISTRAR



/s/ CARL T. WATANABE
REGISTRAR OF CONVEYANCES

20 2/2 Z9 R811

20 2/2 Z9 L545

LAND COURT

REGULAR SYSTEM

Return By Mail Pick-Up To:

CARLSMITH BALL LLP
Pacific Tower, Suite 2200
1001 Bishop Street
Honolulu, Hawaii 96813

Attention: Eric A. James
Telephone: (808) 523-2500

TITLE OF DOCUMENT:

Agreement No. AD2079200
DECLARATION OF ENVIRONMENTAL RESTRICTIONS (WELL RESTRICTION AREA);
JOINDER

PARTIES TO DOCUMENT:

Declarant: **JAMES CAMPBELL COMPANY LLC**, a Delaware limited liability company
The James Campbell Building, 1001 Kamokila Boulevard, Kapolei, Hawaii 96707

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IX, 75 Hawthorne Street, San Francisco, California 94105

DEL MONTE FRESH PRODUCE (HAWAII), INC., a Delaware corporation

94-1000 Kunia Road, Kunia, Hawaii 96759

TAX MAP KEY(S):

(Oahu) 9-2-004: parcel 001, 003, 005, 006
(Oahu) 9-2-005: parcel 001 (por.), 002 (por.)
(Oahu) 9-4-004-005

Certificate of Title Nos. 830,900; 830,905; 830,906; 830,911; 830,913;
830,914; 830,916

(This document consists of 16 pages.)

DECLARATION OF ENVIRONMENTAL RESTRICTIONS (WELL RESTRICTION AREA)

THIS DECLARATION OF ENVIRONMENTAL RESTRICTIONS (the "Declaration") is made as of _____, 2007, by **JAMES CAMPBELL COMPANY LLC**, a Delaware limited liability company (the "**Declarant**"), whose address is the James Campbell Building, 1001 Kamokila Boulevard, Kapolei, Hawaii 96707, with reference to the following:

STATEMENT OF FACTS

A. Declarant is fee owner of that certain real property located in Honolulu, Ewa, Oahu, State of Hawaii, more particularly described in **Exhibit B** attached hereto and incorporated herein by reference (together with the improvements thereon at any time, the "**Property**").

B. Declarant currently leases the Property, together with other lands (collectively the "**Leased Lands**"), to Del Monte Fresh Produce (Hawaii), Inc, a Delaware corporation ("**Tenant**") under that certain unrecorded Amended and Restated Lease dated January 5, 1995, as amended ("**Lease**"), which has a term that expires December 31, 2008.

C. The United States Environmental Protection Agency ("**EPA**") placed portions of the Leased Lands on the National Priorities List in December 1994, designating them as a "**Superfund Site**" referred to as the Del Monte Corporation (Oahu Plantation) Superfund Site.

D. The Tenant has entered into a consent decree with the EPA dated September 27, 2005 ("**Del Monte Consent Decree**") under which Tenant has agreed to perform certain response actions on portions of the Property as provided therein. The contamination includes contaminated deep ground water approximately 800 feet below the ground surface ("**Basal Aquifer**").

E. As detailed in the Remedial Investigation Report issued in November 1998 ("**RI**"), the Feasibility Study issued in February 2003 ("**FS**") and the Record of Decision issued on September 25, 2003 by the EPA ("**ROD**"), the Basal Aquifer is contaminated with the hazardous substances 1,2-dibromo-3-chloropropane ("**DBCP**"), ethylene dibromide ("**EDB**") and 1,2,3-trichloropropane ("**TCP**"). The portion of the Property, based on current information, necessary to implement the Basal Aquifer remedy selected by the EPA in the ROD ("**Remedy for the Basal Aquifer**") is more particularly shown on the Map attached hereto as **Exhibit A** and incorporated herein by reference ("**Well Restriction Area**"). Pursuant to the Del Monte Consent Decree, Tenant has installed in the Well Restriction Area extraction and monitoring wells.

F. Declarant has also entered into a Consent Decree with EPA that has been approved by the Court and entered on September 18, 2007 ("**Institutional Controls Consent Decree**") to satisfy a requirement of the ROD that certain institutional controls be placed on the Well Restriction Area as more fully set forth below. Pursuant to the Institutional Controls Consent Decree, Declarant is recording this Declaration as an encumbrance against the title to the Property.

G. Pursuant to the Institutional Controls Consent Decree, Declarant has also recorded as an encumbrance against the title to the Well Restriction Area that certain Declaration of Site Access (Site); Joinder dated _____, 2007, filed in the Office of the

Assistant Registrar of the Land Court of the State of Hawaii as Document No. 3076945
("Site Access Declaration").

NOW, THEREFORE, DECLARANT PROVIDES AS FOLLOWS:

Section 1. HAWAII UNIFORM ENVIRONMENTAL COVENANTS ACT

This Declaration is an environmental covenant executed pursuant to Hawaii Revised Statutes ch. 508C ("UECA"). For all purposes under UECA, Declarant shall be the "Holder" as such term is defined in the UECA. The administrative record for the Institutional Controls Consent Decree and reports required thereunder shall be held by the EPA at Region IX, 75 Hawthorne Street, San Francisco, California 94105. In accordance with §§ 508C-7 and 508C-8 of UECA: (i) this Declaration, and any amendment or termination thereof, shall be filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii; (ii) Declarant shall provide a copy of the filed Declaration, any amendment or termination thereof, and documentation of any other matters related to this Declaration to the Department of Health of the State of Hawaii; and (iii) Declarant shall provide a copy of this Declaration in the manner determined by the EPA to (a) each signatory of this Declaration; (b) each person holding a recorded interest in the Property; (c) each person in possession of the Property; (d) the City and County of Honolulu; and (e) any other person as determined by the EPA.

Section 2. PROHIBITED USES AND ACTIVITIES.

a. No application for a water use permit to withdraw water from any well located or to be located in the Well Restriction Area shall be filed by any owner, lessee, licensee, or other occupant or user of such property (collectively "Occupant"), absent prior written approval of the EPA, which approval shall be granted if such withdrawal would not interfere with the Remedy for the Basal Aquifer and/or cause exposure to basal groundwater impacted by Site contaminants.

b. In the event that any Occupant determines that an application for a water use permit to draw water from any well located in the Well Restriction Area has been filed as to any lands then owned by Occupant within the Well Restriction Area, without Occupant's joinder, Occupant shall notify the EPA, as well as the Hawaii Commission on Water Resource Management, and shall file an objection to the issuance of the water use permit with such Commission.

c. No Occupant shall undertake any construction in the Well Restriction Area that damages or interferes with any equipment or other components of the Remedy for the Basal Aquifer, including the groundwater monitoring and extraction wells.

Section 3. ANNUAL REPORT.

Under Section VII.D (Annual Report) of the Institutional Controls Consent Decree, Declarant is obligated to submit to the EPA for its review and approval, an Institutional Controls Consent Decree Annual Report ("IC Annual Report"), beginning on the first anniversary of the Effective Date of the Institutional Controls Consent Decree. Within thirty (30) days of receipt of a written request from the Declarant, the fee simple owner of the Property or a portion thereof, shall (i) summarize the activities such owner has undertaken in the previous year to comply with the requirements of this Declaration as to the Property or portion thereof owned by such owner, and (ii) certify such information to Declarant in the same manner as required of Declarant by the EPA, so as to enable Declarant to compile and provide the EPA with the information required for

the IC Annual Report. To the extent that the EPA, after reviewing the IC Annual Report, requires additional information regarding compliance with the requirements of this Declaration as to any portion of the Property not then owned by Declarant, then the owner of such portion of the Property shall provide such information to Declarant in a timely fashion so as to enable Declarant to comply with the requirements of the Institutional Controls Consent Decree in a timely manner. If portions of the Property are owned by different owners, then this requirement shall apply to each such owner as to the property owned by them.

Section 4. INDEMNITY.

Each Occupant shall Indemnify the Declarant from and against any and all claims and demands for loss or damage, arising out of or related to such Occupant's failure to comply with the requirements of this Declaration after the date of this Declaration. For the purposes of this Declaration, the term "Indemnify" means the protection of a party, by a money payment if necessary, against out-of-pocket loss. The term shall include an obligation by the indemnitor to defend and hold the indemnitee harmless (with counsel acceptable to the indemnitee) in connection with any claim against which the obligation to Indemnify operates. The obligation to Indemnify shall specifically include, but shall not be limited to payment of (or in the alternative, reimbursement of) all reasonable out of pocket costs and expenses paid by the indemnitee for the indemnitee's defense, including without limitation, reasonable attorneys' fees and costs, and all other consultants' reasonable fees and costs. The obligation to Indemnify shall also specifically include all reasonable out of pocket costs for research regarding settlement or other preventive measures undertaken by the indemnitee with regard to any such claim. The provisions of this Section 4 (Indemnity) shall survive the termination of this Declaration.

Section 5. ENFORCEMENT OF DECLARATION.

The provisions of this Declaration can only be enforced by the EPA, Declarant and the persons, as such term is defined in the UECA, that are entitled to enforce an environmental covenant under § 508C-11(a) of the UECA; provided that the EPA shall have primary responsibility for the enforcement of this Declaration. Upon and following Declarant's conveyance of the Property, or any portion thereof, to a successor in title, the successor in title and not Declarant shall be responsible for performing the obligations set forth herein as to the property conveyed, except that notwithstanding such conveyance, Declarant shall be responsible for seeking in good faith to enforce the provisions of this Declaration as to the properties so conveyed, to the extent that the EPA is unable, despite its good faith efforts, to enforce the provisions of this Declaration.

Section 6. COVENANTS RUN WITH THE LAND; NOTICE OF TRANSFER; PRIORITY.

a. Covenants Run With Land. The restrictions set forth in this Declaration shall run with the Property and shall be binding on all Occupants having any interest in the Property or any portion thereof and their successors and assigns; provided, however, that such restrictions shall be binding on each Occupant, and their respective successors and assigns only for such period as they shall have title to or an interest in possession or occupancy of the Property or any portion thereof.

b. Notice of Transfer. At least thirty (30) days prior to any conveyance or other transfer of a fee simple interest in the Property or portion thereof, the then fee simple owner of the Property or portion thereof shall (i) provide the successor owner of the Property or portion

thereof with written notice of (a) the Institutional Controls Consent Decree; and (b) this Declaration; and (ii) provide to the Regional Administrator of the EPA, Region IX, written notice of the proposed conveyance or other transfer, and the name and address of the successor owner of the Property or portion thereof, and the date on which the notice set forth in subpart (i) of this sentence was given to the successor owner of the Property or portion thereof.

c. Priority. This Declaration shall be prior to any mortgage, deed of trust or other security recorded against the Property. However, the provisions of this Declaration do not limit the right of a security holder to foreclose or otherwise enforce any mortgage, deed of trust, or other encumbrance against the Property or the right of a security holder to pursue any remedies for the enforcement of any pledge or lien against the Property provided, however, that in the event of a foreclosure sale under any deed of trust, or other lien or encumbrance, or a sale pursuant to any power of sale contained in any such deed of trust, the purchaser or purchasers and their successors and assigns, and the Property shall be, and shall continue to be, subject to all of the conditions, restrictions and covenants provided for in this Declaration.

Section 7. MODIFICATION AND TERMINATION.

a. Modification. If a successor in title of Declarant: (1) seeks a modification of the restrictions set forth in this Declaration as to its property including a modification to the boundaries of the Well Restriction Area; or (2) seeks to object to any modification or addition to such restrictions determined by EPA to be necessary under the Institutional Controls Consent Decree, such successor in title may request that Declarant request such a modification from the EPA (or object to such modification proposed by the EPA) pursuant to the Declarant's rights under Section VIII (Modification of Institutional Controls) of the Institutional Controls Consent Decree. If Declarant, in its sole discretion, decides to seek such a modification from EPA (or to object to such a modification proposed by EPA), then the successor in title requesting such modification (or making such objection) shall pay all costs and expenses incurred by Declarant in requesting such modification from the EPA (or making such objection to EPA) and shall provide to Declarant financial assurances satisfactory to Declarant, in its sole discretion, that the successor in title has sufficient funds available to pay for such costs and expenses. Nothing contained herein shall be deemed or construed as a guarantee by Declarant that the EPA will approve such modification (or agree to such objection).

b. Termination. This Declaration will automatically terminate and be of no further force and effect upon the earlier to occur of:

(1) Certification of Completion of the Work by EPA pursuant to Paragraph 47 of Section XIV (Certification of Completion) of the Del Monte Fresh Produce (Hawaii), Inc. Consent Decree; or

(2) The agreement of the Declarant, as the Holder, and the EPA to terminate this Declaration pursuant to § 508C-10(a) of the UECA.

Section 8. AMENDMENT OF DECLARATION.

This Declaration, including any exhibit attached hereto, may be amended only by Declarant with the written consent of EPA but without the joinder of, or consent of any owner of the Property, in the following circumstances:

a. To incorporate any modifications approved by the EPA pursuant to Section VIII (Modification of Institutional Controls) of the Institutional Controls Consent Decree and Section 7.a (Modification), above.

b. To incorporate any additional restrictions imposed by the EPA pursuant to its rights under paragraph 15 (Additional Use Restrictions) and paragraph 28 (EPA Selection of Further Institutional Controls) of the Institutional Controls Consent Decree.

c. To incorporate any amendments by consent of the Declarant, as the Holder, and the EPA pursuant to § 508C-10(a) of the UECA.

Section 9. PROTECTIONS OF SUCCESSORS IN TITLE.

As, and to the extent set forth in Section XVI (Covenants Not to Sue By Plaintiff) of the Institutional Controls Consent Decree, the United States of America has agreed not to sue or to take administrative action pursuant to Sections 106 and 107 of CERCLA against a successor in title of Declarant (other than a successor in title that otherwise is a responsible or potentially responsible party for the Well Restriction Area), provided that such successor in title satisfactorily performs its obligations as an Occupant as set forth in (i) this Declaration and (ii) the Site Access Declaration.

Section 10. JOINDER.

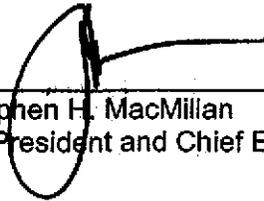
a. EPA. By its joinder herein, EPA hereby consents to the recordation of the Declaration and hereby waives, in accordance with § 508C-10(a)(2) of the UECA, any requirement under the UECA that the fee simple owner of the Property execute any amendments or termination of this Declaration.

b. Del Monte. Del Monte Fresh Produce (Hawaii), Inc., is the current lessee under the Lease, and hereby joins in this Declaration at the request of Declarant. By its joinder, Del Monte Fresh Produce (Hawaii), Inc. hereby consents to the recordation of the Declaration, acknowledges that its rights under the Lease are subordinate and subject to the terms and provisions of the Declaration, and (i) agrees to be bound by the terms and provisions of this Declaration; and (ii) waives, in accordance with § 508C-10(a)(3) of the UECA, the right to consent to any amendments or termination of this Declaration, except for any amendments that relate or pertain to Del Monte Fresh Produce (Hawaii), Inc.'s duty of indemnity under this Declaration.

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IN WITNESS WHEREOF, Declarant, EPA and Tenant have executed this Declaration as of the date first set forth above.

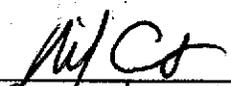
JAMES CAMPBELL COMPANY LLC

By 
Stephen H. MacMillan
Its President and Chief Executive Officer

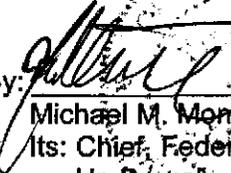
Declarant

JOINDER

**DEL MONTE FRESH PRODUCE (HAWAII),
INC.,**
a Delaware corporation

By: 
Name: Richard Contreras
Its: Vice President

**UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY**

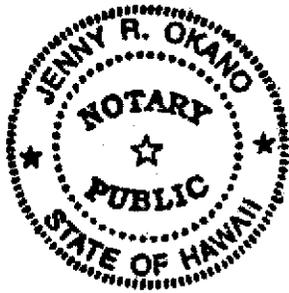
By: 
Michael M. Montgomery
Its: Chief, Federal Facilities and Site Clean
Up Branch

EPA

By: _____
Name: _____
Its: _____

STATE OF HAWAII)
) ss.
CITY AND COUNTY OF HONOLULU)

On this 2nd day of November, 2007, before me personally appeared **STEPHEN H. MacMILLAN**, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.



Jenny R. Okano
Name: JENNY R. OKANO
Notary Public, State of Hawaii
My commission expires: 1/20/2010

STATE OF CALIFORNIA)
)
COUNTY OF SAN FRANCISCO)

On this 15th day of October in the year 2007, before me, **Kathleen L. Kawakami**, personally appeared **Michael M. Montgomery** known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

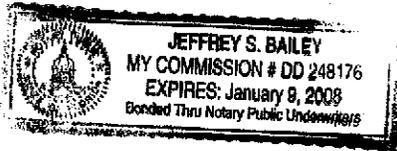
WITNESS my hand and official seal.

Notary Signature *Kathleen L. Kawakami*

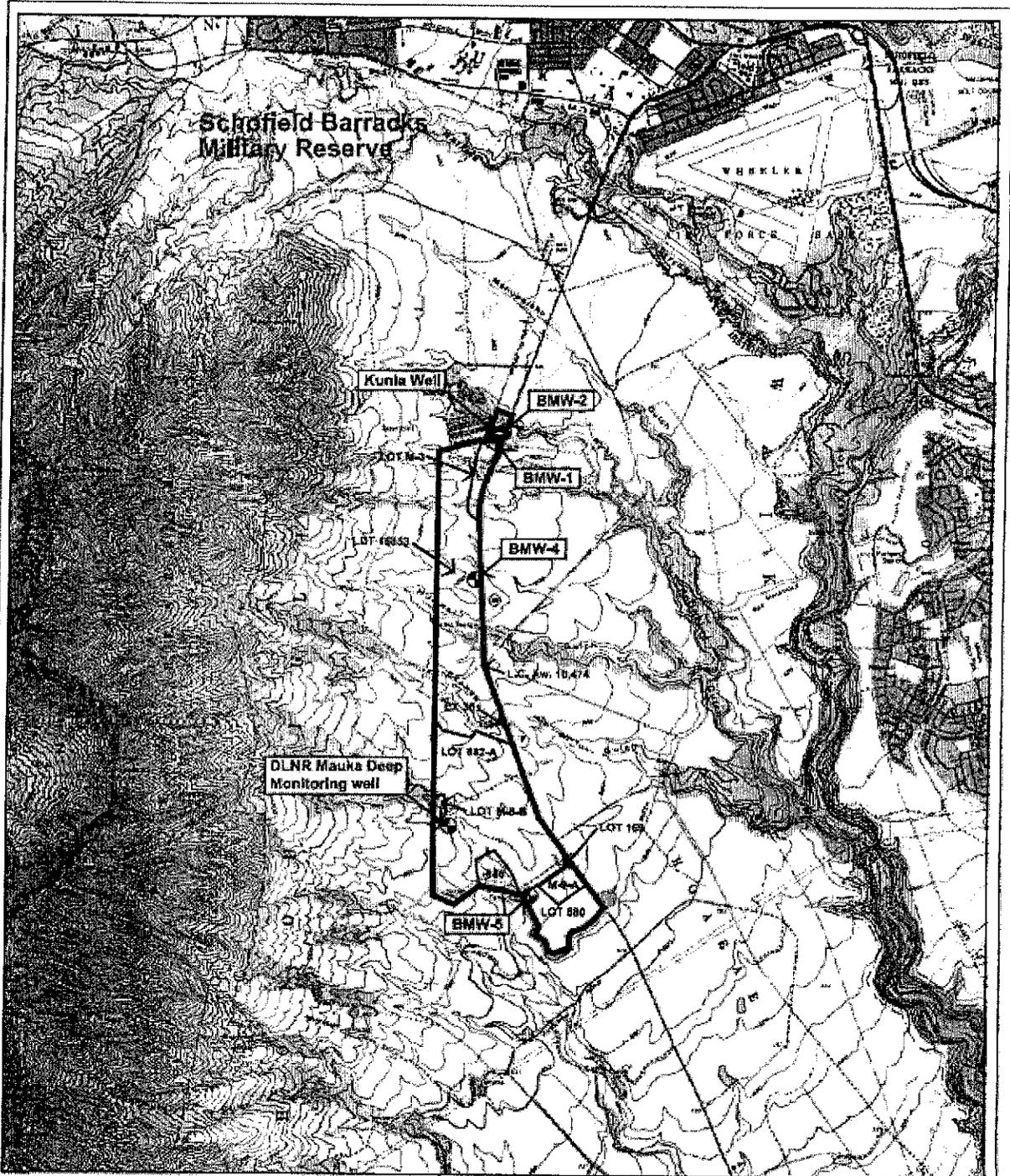


STATE OF ~~HAWAII~~ FLORIDA)
) ss.
CITY AND COUNTY OF ~~HONOLULU~~)
MIAMI DADE

On this 30 day of October, 2007, before me personally appeared Richard Capreas, and _____, to me known to be the persons described in and who severally executed the foregoing instrument, and severally acknowledged that they executed the same as their free act and deed as such.




Name: JEFFREY S. BAILEY
Notary Public, State of ~~Hawaii~~ FLORIDA
My commission expires: _____



LEGEND

-  Well Locations
-  Land Court Lots

0 4000
Scale: 1"=4000 Feet



 EPA Well Restriction Area

EXHIBIT A
Del Monte Corporation
(Oahu Plantation) Superfund Site
Well Restriction Area

NOTE: As shown, portions of Land Court Lots 168, 880, 882-A, 16853, M-3, M-6-B, M-9-A and L.C. Award 10,474 are located within the Well Restriction Area and are subject to the Declaration. Exclusion 38 is owned by others and is therefore not encumbered by the Declaration.

EXHIBIT B
PROPERTY

PARCEL ONE

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 169 (area 0.693 acre), as shown on Map 27, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,906** issued to James Campbell Company LLC.

PARCEL TWO

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 880 (area 93.117 acres), as shown on Map 109, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,911** issued to James Campbell Company LLC.

PARCEL THREE

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 882-A (area 425.963 acres), as shown on Map 110, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,913** issued to James Campbell Company LLC.

PARCEL FOUR

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 16853 (area 2,507.948 acres), as shown on Map 1302, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,914** issued to James Campbell Company LLC.

PARCEL FIVE

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT M-3 (area 7.099 acres), as shown on Map 4, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,916** issued to James Campbell Company LLC.

PARCEL SIX

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT M-8-B (area 854.23 acres), as shown on Map 5, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,900** issued to James Campbell Company LLC.

PARCEL SEVEN

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT M-9-A (area 19.296 acres), as shown on Map 6, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,905** issued to James Campbell Company LLC.

PARCEL EIGHT

All of that certain parcel of land (being portion of the land(s) described in and covered by Royal Patent Number 4490, Land Commission Award 10,474, Apana 9 to N. Namauu) situate, lying and being on the westerly side of Kunia Road at Hoaeae, District of Ewa, City and County of Honolulu, State of Hawaii, being PARCEL 5, and thus bounded and described as per survey dated August 8, 1988:

Beginning at the north corner of this parcel of land and on the westerly side of Kunia Road, the coordinates of said point of beginning referred to Government Survey Triangulation Station "KAPUAI NEW" being 22,750.96 feet north and 4,331.52 feet east, thence running by azimuths measured clockwise from true South:

1. Along the westerly side of Kunia Road, on a curve to the left with a radius of 2,894.90 feet, the azimuth and distance of the chord being:

- | | | | | | |
|----|------|-----|-----|--------|----------------------------------------------------------------------------------------------------------------------------------------------|
| | 345° | 29' | 57" | 611.81 | feet; |
| 2. | 159° | 26' | | 573.67 | feet along Lot M-1-A-1 of Land Court Application 1069; |
| 3. | 221° | 12' | 30" | 73.38 | feet along Lot M-1-A-1 of Land Court Application 1069 to the point of beginning and containing an area of 11,930, square feet, more or less. |

BEING the premises acquired by Deed dated November 1, 2006, by and between the Trustees under the Will and of the Estate of James Campbell, Deceased, and James Campbell Company LLC, filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii as Document No. 3505988.

End of Exhibit B

DOUBLE SYSTEM

25
9A
11 App
6

21



L-492 STATE OF HAWAII
OFFICE OF ASSISTANT REGISTRAR
RECORDED
DEC 20, 2007 02:00 PM
Doc No(s) 3694441
on Cert(s) AS LISTED HEREIN



R-942 STATE OF HAWAII
BUREAU OF CONVEYANCES
RECORDED
DEC 20, 2007 02:00 PM
Doc No(s) 2007-219110



29 1/1 Z13 R842

/s/ CARL T. WATANABE
ASSISTANT REGISTRAR



29 1/1 Z13 L492

/s/ CARL T. WATANABE
REGISTRAR OF CONVEYANCES

di

LAND COURT

REGULAR SYSTEM

Return By Mail Pick-Up

CARLSMITH BALL LLP
318 Kapolei Building
1001 Kamokila Boulevard
Kapolei, Hawaii 96707
Attention: Mark K. Murakami
Telephone: 808.523.2561

TITLE OF DOCUMENT:

Agreement No. A02081500

DECLARATION OF COVENANTS REGARDING WATER ALLOCATION AND EASEMENTS

PARTIES TO DOCUMENT:

DECLARANT: JAMES CAMPBELL COMPANY LLC,
a Delaware limited liability company
James Campbell Building
1001 Kamokila Boulevard
Kapolei, Hawaii 96707

TAX MAP KEY(S):

(Oahu) 9-2-004: parcels 001, 003, 005, and 006
(Oahu) 9-2-005: parcels 001, 002, and 004

Certificate of Title Nos. 830,900; 830,905; 830,906; 830,907; 830,908; 830,909;
830,910; 830,911; 830,912; 830,913; 830,914; 830,915; 830,916; 830,917; 830,918

(This document consists of 29 pages.)

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EXHIBITS:

EXHIBIT A: PROPERTY DESCRIPTION

EXHIBIT B: MAP OF SECTIONS

EXHIBIT C-1: CURRENT PERCENTAGE OF WATER ALLOCATION

**EXHIBIT C-2: PERCENTAGE OF WATER ALLOCATION INCLUDING STATE OF
HAWAII LAND**

EXHIBIT D: MAP OF STATE OF HAWAII LAND

**DECLARATION OF COVENANTS REGARDING WATER ALLOCATION
AND EASEMENTS**

THIS DECLARATION OF COVENANTS REGARDING WATER ALLOCATION AND EASEMENTS ("**Declaration**") is made this 13~~th~~ day of December, 2007, by **JAMES CAMPBELL COMPANY LLC**, a Delaware limited liability company, whose place of business and post office address is James Campbell Building, 1001 Kamokila Boulevard, Kapolei, Hawaii 96707 (the "**Declarant**").

BACKGROUND STATEMENT

Declarant, as the owner of the real property described in **Exhibit A** attached hereto and incorporated herein by this reference (the "**Property**"), intends by recording this Declaration to establish a general plan of water allocation for the areas known as Kunia Village and the surrounding Kunia Lands. Substantially all of the Property was or is encumbered by that certain unrecorded Lease dated April 29, 1994 (Lease No. L00977200) between James Campbell Company LLC, a Delaware limited liability company, as successor Lessors, and Del Monte Fresh Produce (Hawaii), Inc., a Delaware corporation ("**Del Monte**"), as Lessee, as amended and restated by instrument dated January 5, 1995 (collectively the "**Lease**"), the term of which expires on December 31, 2008, subject to earlier termination pursuant to the terms thereof.

By imposing the mutually beneficial restrictions created by this Declaration, Declarant seeks to allocate water use for the benefit of all Property Owners (as such term is defined below). This Declaration provides a flexible and reasonable procedure for present and future water allocation as Declarant deems appropriate and provides for the overall water administration, maintenance, and preservation. An integral part of the water allocation plan is the creation of the Kunia Water Association ("**Association**"), an unincorporated association to be comprised of all Property Owners to administer and enforce this Declaration. Prior to providing any water in accordance with this Declaration, Declarant shall adopt articles of association and bylaws for the Association in order to implement the provisions of this Declaration.

For purposes of this Declaration, the "**Substitution Date**" shall mean the earlier of (i) the date by which Declarant or any successor of Declarant pursuant to paragraph 7.8 (Assignment) below no longer owns any portion of the Property, or (ii) when Declarant voluntarily assigns all of its rights, powers, duties and obligations retained under this Declaration to the Association, as evidenced by a written declaration to that effect, executed by Declarant and the Association, and files the same with the Office of the Assistant Registrar of the Land Court of the State of Hawaii. After the Substitution Date, every reference to Declarant herein shall be deemed to mean and refer to the Association. To the extent Declarant will own any portion of the Property after the Substitution Date, Declarant shall be deemed a Property Owner bound by the same terms and conditions, and with the same rights and privileges as all other Property Owners hereunder.

For purposes of this Declaration, "**Property Owner**" shall mean the person or persons, corporation or corporations, or other legal entities named as grantee in the last recorded deed to any portion of the Property, or the vendee of the Property on the last recorded agreement of sale or subagreement of sale, as the case may be, or the lessee of the Property on the last recorded lease or sublease, as the case may be, for a period exceeding five (5) years, unless

the deed, agreement of sale or subagreement of sale or lease or sublease document provides otherwise.

ARTICLE I **STATEMENT OF AGREEMENT**

As the owner of the Property, Declarant hereby declares that all of the Property shall be held, sold, and conveyed subject to the covenants, conditions, and easements contained herein, which are made for the express benefit of: (i) Declarant, its successors and assigns, and (ii) the present and future Property Owners, the Association and its members. The covenants, conditions, and easements contained herein shall run with the title to the Property and shall inure to the benefit of Declarant, the Association and any other person who acquires any interest in all or any part of the Property.

In consideration of the mutual benefits and covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Declarant, for itself and on behalf of the future Property Owners and the Association, hereby covenants and agrees as set forth herein.

ARTICLE II **WATER ALLOCATION**

2.1 **Operation.** Subject to any limitations or conditions precedent provided in this Declaration, Declarant in its sole discretion shall have the right to withdraw water from the Water Sources, as defined below, and allocate and deliver such water up to the delivery points ("**Delivery Points**") which will service each Section (as defined below) by means of transmission and storage facilities and improvements (the "**Water Delivery System**"). The portion of the water system which begins from and includes the Delivery Points and provides water to the areas solely within each Section shall be referred to herein as the "**Property Owner Distribution System**".

2.2 **Potential Water Sources.** To Declarant's knowledge, the potential water sources available under this Declaration are Kunia Well No. 1 (State Well Nos. 2703-01 and 02), Kunia Well No. 3 (State Well No. 2803-05), Kunia Well No. 4 (State Well No. 2803-07), and the sewage treatment plant located in the Section known as the Kunia Village Area (as such Section is shown in **Exhibit B** described below) (collectively, the "**Potential Water Sources**").

2.3 **Licenses, Permits and Approvals.** Declarant's right to withdraw water from the Potential Water Sources is subject to Declarant and/or its agent or the Association obtaining and maintaining the right to all governmental licenses, permits and approvals necessary to withdraw water from the Potential Water Sources. Del Monte currently owns the revocable permits for the use of water derived from the Potential Water Sources, and upon the expiration of the Lease, subject to the limitations below, Declarant will use commercially reasonable efforts to cause such revocable permits to be assigned to Declarant or its designee. As Declarant obtains such rights to the necessary licenses, permits and approvals, Declarant will annex each Potential Water Source to this Declaration which upon annexation shall be referred to herein as a "**Water Source**" or the "**Water Sources**" under this Declaration. Upon the Substitution Date, Declarant will use commercially reasonable efforts to assign or cause the assignment of all rights and interests under the licenses, revocable permits and approvals to the Association.

Declarant shall not annex Well No. 1 to this Declaration unless and until Del Monte (i) fulfills its obligations under the Consent Decree by and between the United States and Del Monte entered into by Del Monte on May 2, 2005, and (ii) has obtained all appropriate Certifications of Completion, as defined in said Consent Decree issued by the Environmental Protection Agency, as provided in said Consent Decree. Notwithstanding the foregoing, prior to annexing Well No. 1, Declarant in its sole discretion may accept treated water from Well No. 1 provided that Del Monte complies with the treatment standards for such water as set forth in the Del Monte Consent Decree, and Declarant may allocate such treated water to the Sections in accordance with the allocation provisions set forth in Section 2.4 (Water Allocation) below.

2.4 Water Allocation. The percentages shown on the attached **Exhibit C-1** represent the allocation of available water that will be delivered to the Delivery Points for each Section. The Sections are shown on the map attached as **Exhibit B** and by this reference made a part hereof. In the event that Declarant exercises the right to annex the lands owned by the State of Hawaii pursuant to paragraph 2.9 (Annexation of Land) below, then the percentages of water allocation shall be as shown on the attached **Exhibit C-2**.

The exact location of the Delivery Points will be determined by mutual agreement between Declarant and the Property Owner(s) of the Section for which each Delivery Point services. The cost to construct the Delivery Point and the cost of the Property Owner Distribution System in a given Section will be the responsibility of the Property Owner(s) of the Section within which the Delivery Point is located. The cost to deliver water from the Water Sources to the Delivery Points, including maintenance of the Water Delivery System, shall be an Operating Cost, paid by the Property Owner(s) of each Section in accordance with paragraph 5.1 (Operating Costs).

2.5 Change in Allocation and Delivery. Any changes in the allocation of water or in the Delivery Points shall require the consent of Declarant and the Property Owner(s) of the affected Section(s). Any changes in the costs associated with such change in allocation or Delivery Points will be the responsibility of the Property Owner(s) of the Section who benefits from such changes. Pursuant to paragraph 7.11 (Withdrawal), if Declarant withdraws any Section from this Declaration, then the water allocated to the withdrawn Section shall be re-allocated pro rata among the remaining Sections without the consent of the Property Owner(s) of the remaining Sections, and the percentages in **Exhibit C-1 and Exhibit C-2, as applicable**, shall be adjusted accordingly. If Declarant instead determines in its sole discretion that the water for the withdrawn Section shall be re-allocated among the remaining Sections in a different manner, then such re-allocation shall require the consent of the Property Owner(s) of the affected Sections.

2.6 Decrease in Water Output. Notwithstanding the occurrence of a decrease in water output from the Water Sources, any available water shall be delivered in accordance with the percentages provided in paragraph 2.4 (Water Allocation) above.

2.7 Redelivery of Water. Other than Declarant, a Property Owner shall have no right to redeliver or otherwise redistribute the water outside of the Property without the prior written consent of Declarant, which consent may be withheld by Declarant in its sole discretion for any reason.

2.8 No Right to Use or Control of Facilities or Water. Assessment or payment of a Property Owner's obligation shall not confer on the Property Owner or any other person or entity any right, privilege or duty to own, manage, control, maintain, or use the Water Sources or the

Water Delivery System, nor otherwise claim or be entitled to any legal or equitable interest therein or in any allocation of water for any purpose. Nothing in these restrictions shall be construed as imposing any duty whatsoever on the part of Declarant or any other person or entity to provide water to the Property or to a Property Owner, or to construct, develop or maintain facilities, or to plan for same, now or at any future time.

2.9 Annexation of Land. James Campbell Company LLC, a Delaware limited liability company ("**JCCLLC**"), reserves the right in its sole discretion to annex the lands owned by the State of Hawaii, as shown on the map attached as **Exhibit D**, and to thereafter allocate water to the State of Hawaii based on the percentage provided in **Exhibit C-2**; provided, however, that no water shall be allocated to the State of Hawaii unless and until the State of Hawaii agrees to be bound by the terms and conditions of this Declaration. The right to annex the lands owned by the State of Hawaii shall be a right personal to JCCLLC and shall not be a right which will be assumed by the Association upon the Substitution Date unless such right is expressly assigned by JCCLLC.

2.10 Condemnation. In the event of condemnation of all or a portion of the Water Sources, the Water Easements (defined below), the Water Delivery System or the Property Owner Distribution System, this Declaration shall cease and be null and void as to such portions of the system condemned, and the amount of water to which each Section shall be entitled under this Declaration shall be proportionately reduced or increased. If such condemnation action concerns only the Water Sources, the Water Easements or the Water Delivery System or portions thereof, Declarant shall have the sole and exclusive right to defend such condemnation action and all of Declarant's costs and expenses relating to such defense shall be paid from the condemnation award, up to the amount of the condemnation award that is attributable to the Water Sources, the Water Easements or the Water Delivery System. The term "condemnation" shall include a taking pursuant to a conveyance under threat of condemnation. The entire amount of the condemnation award that is attributable to the Water Sources, the Water Easements or the Water Delivery System shall be payable solely and exclusively to Declarant.

2.11 Agricultural Use. The Property Owners acknowledge and agree that the water to be allocated from the Water Sources and delivered to each Delivery Point under this Declaration is for agricultural use only, and in no event shall Declarant (or the Association after the Substitution Date) be responsible for the delivery of potable water or compliance with the Safe Drinking Water Act, as the same may be amended from time to time, or any similar federal, Hawaii state and local laws and ordinances, and regulations now or hereafter adopted. Nothing herein shall be deemed or construed to prohibit: (a) the Property Owner(s) in the Section known as Kunia Village Area from continuing to treat and use such water for domestic use; or (b) the Property Owners in the Sections other than the Kunia Village Area from using the water for potable or domestic use in their Sections, provided that they obtain the required licenses, permits and approvals necessary for such use.

ARTICLE III **EASEMENTS**

3.1 Nonexclusive Easement. Declarant hereby reserves to itself and its successors and assigns, and grants to the Property Owners, a blanket, perpetual, nonexclusive easement over, under, and across the Property solely for water source, transmission and storage purposes in order to allocate and deliver water to the Property as provided in this Declaration

(“**Water Easements**”), and for no other purposes. The location of the Water Sources, the Water Easements and the Water Delivery System (“**Easement Areas**”) shall be mutually agreed upon by Declarant and the Property Owner(s) of the land upon which such easement(s) is to be located.

3.2 Access. Declarant hereby reserves to itself, its agents, successors and assigns, a blanket, perpetual, non-exclusive easement over, under, and across the Property for the purpose of access, ingress and egress, operation, maintenance and repair to the extent reasonably necessary for Declarant or its agents and assigns to perform its responsibilities with respect to the Water Sources, the Water Easements and the Water Delivery System. The location of such easements shall be mutually agreed upon by Declarant and the Property Owner(s) of the land on which such easement(s) is to be located.

3.3 Right to Relocate Easements. The Property Owner(s) shall have the right from time to time to realign or relocate the Easement Areas, or portions thereof as may be located on such Property Owner(s) land, provided that (a) such Property Owner(s) shall be solely responsible for paying the cost of realigning or relocating the Easement Areas (including the cost of realigning or relocating utilities, other infrastructure or improvements within the Easement Areas); (b) such Easement Areas shall be equivalent or better in quality and size to the Easement Areas being replaced; and (c) such realigning or relocating of the Easement Areas shall be completed in a manner that will not unreasonably interfere with or disturb the use and enjoyment of the Water Delivery System by the other Property Owners. Declarant shall not have any right to relocate any Easement Area without the prior written consent of each affected Property Owner.

3.4 Designation of Land Court Easements. Declarant and each Property Owner shall have the right to seek subdivision approval for the Easement Areas from the Department of Planning and Permitting of the City and County of Honolulu, and designation of the Easement Areas in the Office of the Assistant Registrar of the Land Court of the State of Hawaii without the joinder or consent of the other Property Owners. The party who seeks designation of the Easement Areas shall be responsible for the cost to obtain such governmental approvals to create such Land Court designated easement.

3.5 Right to Record. Declarant also reserves for itself the right and power to delineate, grant and record with the Assistant Registrar of the Land Court of the State of Hawaii such specific easements as may be necessary, in Declarant’s sole discretion, in connection with the operation and maintenance of the Water Sources, the Water Easements and the Water Delivery System without the joinder or consent of the Property Owners.

3.6 Exercise of Easements. The Water Easements shall be used in such a manner as to minimize interference with the use and enjoyment of the property burdened by the easement (“**Burdened Property**”).

3.7 Obstruction of Easement. No person shall construct, install, or maintain any obstruction on the Burdened Property, or otherwise hinder Declarant’s ability to exercise the easement rights created hereby. Declarant shall have the right to remove any such obstruction placed in violation of this paragraph, without notice and without liability to the person(s) who constructed said obstruction or hindered such use.

ARTICLE IV **MAINTENANCE**

4.1 **Rights and Obligations.** Declarant shall have the right and the obligation to operate, maintain, repair and administer the Water Sources, Water Easements and Water Delivery System for which each Property Owner agrees to contribute to the cost of such maintenance as set forth in **Article V (Obligation to Share Costs)** below. Each Property Owner acknowledges and agrees that Declarant shall have the right to engage the services of an independent contractor to operate, maintain, repair and administer the Water Sources, the Water Easements and the Water Delivery System and that the cost of such agreement shall be included in the Operating Costs to be paid by the Property Owners as set forth in **Article V (Obligation to Pay Costs)** below. The independent contractor shall hold all contracting and other licenses and permits required by law for the performance of such obligations and shall at all times during its engagement maintain liability insurance covering claims for bodily injury and property damage with a combined single limit of not less than \$1,000,000 naming the Property Owners and Declarant (or the Association after the Substitution Date) as additional insureds. The Property Owners further acknowledge and agree that upon Declarant's engagement of an independent contractor that meets the requirements set forth above, and for so long as such independent contractor is engaged to do and does perform the obligations of Declarant hereunder, the obligations of Declarant to operate, maintain, repair and administer the Water Sources, the Water Easements and the Water Delivery System shall be deemed satisfied and Declarant shall have no further obligation or liability with respect to the same. In the event that the independent contractor ceases to perform such obligations, then Declarant or the Association, as the case may be, shall assume the performance of such obligations or engage the services of another independent contractor to perform such obligations. The Property Owner(s) of each Section shall have the obligation to operate, maintain, repair and administer the Property Owner Distribution System for their respective Sections.

4.2 **Standard of Performance.** Declarant shall maintain and repair the Water Sources, the Water Easements and the Water Delivery System in good operating condition including, without limitation, repairing and replacing improvements, maintaining, repairing, and replacing equipment and fixtures, as well as such other duties as may be necessary or appropriate. The Property Owner(s) of each Section shall maintain and repair the Property Owner Distribution System located in their Section in good operating condition including, without limitation, repairing and replacing improvements, maintaining, repairing, and replacing equipment and fixtures, as well as such other duties as may be necessary or appropriate. Maintenance, as such term is used in this Declaration, shall mean maintaining, improving, repairing, replacing, insuring, paying taxes and other incidental charges incurred, and taking any and all steps to keep the systems in good operating condition including, without limitation, repairing and replacing improvements; maintaining, repairing, and replacing equipment and fixtures, as well as such other duties as may be necessary or appropriate. Declarant shall also be responsible for preparing and timely filing any and all monthly reports regarding water usage with the appropriate governmental entity.

4.3 **Limitation of Liability.** Notwithstanding anything contained herein to the contrary, in fulfilling its responsibilities hereunder Declarant shall not be liable for property damage or personal injury occurring on, or arising out of the condition of, property which it does not own, unless, and only to the extent that, it has been grossly negligent in the performance of its maintenance responsibilities.

ARTICLE V
OBLIGATION TO PAY COSTS

5.1 **Operating Costs.** All Property Owners shall be obligated to pay for the costs of operation and maintenance of the Water Sources, Water Easements and the Water Delivery System used to deliver water to each Delivery Point (the "**Operating Costs**"). The Operating Costs will include, but shall not be limited to, all costs and expenses incurred by Declarant, the independent contractor engaged pursuant to paragraph 4.1 (Rights and Obligations) above or the Association from and after the Substitution Date for operating, repairing, maintaining and administering ditches, metering devices, pumps, transmission lines, appurtenances and other improvements and facilities for the production and/or delivery of water from the Water Sources, including without limitation, wages, salaries and benefits, security, insurance, materials and supplies, professional services, taxes, fees and permits, and energy, utility and communication charges, rates and assessments. The obligation to pay the Operating Costs shall be mandatory. No diminution or abatement of a Section's share of the Operating Costs or setoff shall be claimed or allowed by reason of any alleged failure of Declarant or the Association to perform its maintenance or operation responsibilities. Notwithstanding anything in this Declaration to the contrary, Operating Costs shall not include any costs or expenses incurred or to be incurred by Del Monte that are connected with or in any way related to the environmental cleanup and purification of contaminated groundwater and other environmental contamination.

5.2 **Calculation of Share of Costs.** The Operating Costs shall be charged to the Property Owners of each Section based on the percentages provided in paragraph 2.4 (Water Allocation). Each Section's share of the fees shall be computed by multiplying the sum of the Operating Costs by the percentages provided in paragraph 2.4 (Water Allocation). A schedule showing the estimated Operating Costs for the next calendar year beginning January 1 based upon Declarant's estimates of (x) the Operating Costs for such year and (y) the number of gallons to be delivered to each Section for such year will be provided by Declarant to the Property Owners on or about December 1 of each preceding year.

5.3 **Payments.** The Property Owner(s) of each Section shall pay the Section's share of Operating Costs to Declarant in cash monthly in advance on the first day of each month. In addition, the Property Owner(s) of each Section shall, with each payment of the Operating Costs or any other amount due to Declarant under this Declaration, reimburse Declarant for the applicable State of Hawaii general excise tax or any other similar tax on each such payment plus the tax thereon. It is the intent of Declarant and the Property Owners to insure that all amounts paid to Declarant by the Property Owners will be received by Declarant without diminution by any tax, assessment, charge or levy of any nature whatsoever, except any net income taxes of Declarant, and the terms and conditions of this Declaration shall be liberally construed to effect such purpose. Any amounts due for a Section and not paid within ten (10) days of when due will bear interest at the rate of one percent (1%) per month until paid. The Property Owner(s) of a Section shall also pay to Declarant a late charge of the five percent (5%) of any amount not paid within ten (10) days of when due and a fee for dishonored checks equal to five percent (5%) of the amount of any such check.

5.4 **Recordkeeping.** Declarant shall maintain or cause to be maintained full and accurate books of account with respect to Operating Costs and any other matter covered by this Declaration.

5.5 **Right to Audit.** At any time within one (1) year after the payment of any Operating Costs by the Property Owner(s) of each Section, but no more than once per calendar

year, a Property Owner may cause an audit of Declarant's books and records related to such Operating Costs. The audit will be at the requesting Property Owner's sole cost and expense and may be performed by an accountant selected by the Property Owner. Such accountant shall be permitted to inspect all books and records of Declarant necessary to determine the amount of the Operating Costs. If the audit discloses that Declarant has overstated a Section's share of Operating Costs, then Declarant shall immediately refund the amount overpaid to the Property Owner(s) of such Section. In addition, if any such audit discloses that Declarant has overstated the Section's share of Operating Costs by more than two percent (2%), Declarant shall immediately pay the costs of any such audit.

ARTICLE VI ENFORCEMENT

6.1 Abatement and Suit. Without limitation of any rights herein specifically provided, violation or breach of any restriction herein contained shall give to Declarant and the Property Owner(s) the right but not the obligation to prosecute a proceeding at law or in equity against the person or persons who have violated or are attempting to violate any of these restrictions to enjoin or prevent them from doing so, to cause said violation to be remedied or to recover damages for said violation.

6.2 Attorneys' Fees. In any legal or equitable proceeding for the enforcement or to restrain the violation of this Declaration or any provision hereof, the losing party or parties shall pay the attorneys' fees of the prevailing party or parties, in such amount as may be fixed by the Court in such proceeding. All remedies provided herein or at law or in equity shall be cumulative and not exclusive.

6.3 Inspection. Declarant may from time to time at any reasonable hour or hours, with at least twenty-four (24) hours prior notice to the affected Property Owner, enter and inspect the Property subject to these restrictions to ascertain compliance therewith.

6.4 Lien for Unpaid Charges.

(a) If the Property Owner(s) of a Section fails to pay any portion of the Section's obligation to Declarant (or to whom Declarant directs such payment to be made), then Declarant may pay such monies for the account of the Property Owner(s) of such Section, and all expenses of Declarant so incurred on account of such non-payment shall be payable by the Property Owner(s) of the Section to Declarant together with interest and late fees as provided in paragraph 5.3 (Payments) above, accruing from the date of expenditure by Declarant until paid in full. The amount of the Section's obligation, together with all expenses of Declarant incurred as set forth immediately above, as well as all other sums hereunder required to be paid by the Property Owner(s) of the Section to Declarant and not paid when due, including without limitation attorneys' fees and all costs of collection shall constitute and be a lien in favor of Declarant on the Property upon filing of a notice of lien in the Office of the Assistant Registrar of the Land Court of the State of Hawaii.

(b) Such lien shall be subject and subordinate to the lien of any mortgage upon the Property filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii prior to the filing of Declarant's notice of lien, and the sale or transfer of any lot in foreclosure of any such mortgage, whether by judicial proceedings or pursuant to a power of

sale contained in such mortgage, or by the transfer or conveyance to the mortgagee by deed in lieu of foreclosure, shall extinguish the lien as to the payments of any assessment which became due prior to such sale, transfer or conveyance; provided, however, that no such sale, transfer or conveyance shall relieve the Property Owner of the Property or the purchaser or transferee thereof with regard to assessments thereafter becoming due. Declarant shall record such notice of lien within one hundred eighty (180) days following the occurrence of such default and shall commence proceedings to enforce such lien within six (6) months following such recordation. Such lien may be foreclosed by suit in the manner of foreclosure of a mortgage of real property, and Declarant or any other prospective purchaser thereof shall have the power to bid on the Property at foreclosure sale and to acquire and hold, lease, mortgage or convey the same. A suit to recover a money judgment for unpaid assessments shall be maintainable without foreclosing or waiving the lien securing the same. The foregoing remedies shall be in addition to any other remedies provided by law for the enforcement of any such assessment obligation.

(c) Upon request, Declarant shall issue a certificate stating the amount of indebtedness secured by a lien upon the Property. Such certificate shall be conclusively binding upon Declarant and the Property Owner(s) of a Section in favor of all persons who rely thereon in good faith as to the amount of such indebtedness existing on the date of the certificate. Property Owners may request that such a certificate be issued and may obtain a copy thereof for a reasonable fee charged by Declarant.

6.5 Failure to Enforce Not a Waiver of Rights. Each remedy provided for in this Declaration is cumulative and non-exclusive. The failure of Declarant in any case to enforce any of the provisions of any limitation, covenant, condition or restriction herein contained shall in no event be deemed to be a waiver of the right to enforce any such provision or to do so thereafter, nor of the right to enforce any other provisions of this Declaration.

ARTICLE VII GENERAL

7.1 Governing Law. This Declaration shall be governed and construed in accordance with the laws of the State of Hawaii, including the Water Code of the State of Hawaii and the rules and regulations of the Commission on Water Resource Management of the State of Hawaii ("**CWRM**") promulgated thereunder and, to the extent determined applicable, the statutes governing public utilities and the rules and the regulations of the Public Utilities Commission of the State of Hawaii ("**PUC**"), the Board of Water Supply of the City and County of Honolulu ("**BWS**"), the Department of Health of the State of Hawaii ("**DOH**") and other governmental authorities. Declarant excepts and reserves for itself, its successors and assigns, from this Declaration, the sole and exclusive right and power, with respect to all matters pertaining to water use, consumption, and development on or affecting the Water Sources, the Water Easements or the Water Delivery System, (a) to apply for, receive, hold and own permits and certificates, in its own name alone, issued by or under the authority of CWRM, or by or under the authority of any other governmental agency or body now or hereafter constituted with jurisdiction over water sources or development thereof ("**governmental authority**"); (b) to register wells or stream diversion works, if any, and facilities therefor, and to file any reports with CWRM or any governmental authority in connection therewith; (c) to make any necessary declarations and reports of water use as may be required by CWRM or governmental authority; and (d) to petition, apply to and appear before CWRM or other governmental authority in its

name alone or on behalf of itself and a Property Owner. A Property Owner shall not take any of the foregoing actions with respect to the Water Sources, the Water Easements or the Water Delivery System unless and to the extent specifically authorized to do so in writing by Declarant. If requested by Declarant, a Property Owner shall join in any report, declaration, registration, petition, application to or appearance before CWRM or other governmental authority. Upon the termination of this Declaration for any reason, and upon the written request by Declarant, the Property Owner shall apply, or join in any application made by Declarant to CWRM or governmental authority for the transfer of any permit involving the Water Sources in the Property Owner's name or in which the Property Owner may have an interest, to Declarant or Declarant's nominee, without payment of any consideration to the Property Owner therefor. In the event that the PUC, the BWS or any other governmental authority shall be determined to have jurisdiction over the Water Sources, the Water Easements and/or this Declaration, this Declaration shall be further subject to any terms and conditions imposed by the PUC, the BWS or such other governmental authority, and Declarant may, if any of such conditions are not acceptable to Declarant, terminate this Declaration upon thirty (30) days' prior written notice to the Property Owners.

7.2 Release and Indemnity. Declarant makes no warranty or representation, express or implied, as to (a) the quality of the water, including its chemical or turbidity content, (b) its fitness for agricultural use or of any other kind, (c) the capacity of the Water Sources and the quantity of water output, (d) ownership of the water, (e) permits to use the water, or (f) the availability of water. Declarant will not be responsible for any loss, cost, damage, liability or claim, including attorneys' fees, for injury or death to persons or property arising out of or in connection with the use of the water delivered to the Property Owners. Each Property Owner indemnifies and holds Declarant harmless from and against any such loss, cost, damage, liability or claim arising therefrom. Declarant shall not be required to transmit water to a Property Owner for any period of time which Declarant is prevented from doing so as a result of equipment failure, government action, labor unrest, acts of God or other reasons beyond Declarant's control.

7.3 Constructive Notice and Acceptance. Every or all person or persons, corporation or corporations, or other legal entity or entities who now or hereafter own or acquire any right, title or interest in or to any portion of the Property are and shall be conclusively deemed to have consented and agreed to every provision contained herein, whether or not any reference to this Declaration is contained in the instrument by which such person or persons, corporation or corporations, or other legal entity or entities acquired an interest in the Property.

7.4 Declaration Runs with Land. All provisions contained herein shall burden each and every part of the parcel of the Property; and shall operate as covenants running with the land, and shall apply to and bind the heirs, devisees, personal representatives, assignees and successors in interest of the Property Owners, and all lessees and sublessees or vendees of all or any portion of the Property, and shall be enforceable as such in accordance with the terms and provisions of this Declaration; provided, however, the right to enforce this Declaration is reserved to Declarant, its successors and assigns, and to no one else.

7.5 Notice. Any notice provided for in this Declaration shall be served personally or shall be mailed by registered or certified mail to Declarant, the representative of a Section or the Association, as applicable. All such notices shall, for all purposes, be deemed delivered (a) upon personal delivery to the party or address specified above or (b) on the third day after mailing when mailed by registered or certified mail, postage prepaid, and properly addressed.

7.6 Amendment. In addition to specific amendment rights granted elsewhere in this Declaration, so long as Declarant owns any portion of the Property, Declarant unilaterally may amend this Declaration for any purpose until the Substitution Date. Thereafter, this Declaration may be amended upon the written consent of the Property Owners of the Sections holding 75% of the water allocations set forth in paragraph 2.4 (Water Allocation) above; provided, however that so long as Declarant owns any portion of the Property, any amendment to this Declaration shall require Declarant's consent, which consent may be withheld by Declarant in its sole discretion. Amendments to this Declaration shall become effective upon recordation unless a later effective date is specified therein. Any procedural challenge to an amendment must be made within six months of its recordation, or such amendment shall be presumed to have been validly adopted. In no event shall a change of conditions or circumstances operate to amend any provisions of this Declaration. If an individual or entity consents to any amendment to this Declaration, it will be conclusively presumed that such individual or entity has the authority so to consent, and no contrary provision in any mortgage or contract between such individual or entity and a third party will affect the validity of such amendment. No amendment may remove, revoke, or modify any right or privilege of Declarant without Declarant's written consent or that of the assignee of such right or privilege, which consent may be withheld by Declarant its sole discretion.

7.7 Voting Rights of Each Section. The Property Owner(s) in each Section shall be entitled to a vote in the Association equal to the percentage of water allocation for that Section (i.e., if a Section has a water allocation of 25%, then the Property Owner(s) of that Section shall have a 25% voting interest in the Association). If there is more than one Property Owner in a Section, then the percentage vote allocated to that Section may be cast only in accordance with the agreement of a majority in interest of the Property Owners of that Section.

7.8 Assignment. The Property Owners acknowledge and agree that JCCLLC may assign its rights as Declarant under this Declaration to an affiliate without the consent of the Property Owners. Upon such assignment to any such affiliate, and the assumption of such affiliate of JCCLLC's obligations under this Declaration, JCCLLC shall have no further liability under this Declaration provided that the assignee assumes and agrees to perform all of JCCLLC's obligations under this Declaration.

7.9 Association's Role After the Substitution Date. Except for the rights provided in paragraph 2.9 (Annexation of Land) above, all rights and duties retained by Declarant under this Declaration shall pass to and be assumed by the Association on the Substitution Date.

7.10 Binding Effect. This Declaration and all of the terms, covenants and conditions hereof shall extend to the benefit of and be binding upon the respective successors and assigns of Declarant, the Association and the Property Owners.

7.11 Withdrawal. Declarant reserves, in its sole discretion, the right from time to time to withdraw from this Declaration a portion of the Property by recording with the Assistant Registrar of the Land Court of the State of Hawaii an amendment to this Declaration noting the withdrawal of such Property. An amendment recorded pursuant to this paragraph shall not require the consent of any person except the Property Owner(s) of such Property, if other than Declarant. Upon the recordation of the amendment, such property shall be withdrawn from the Property, and shall be free and clear of the encumbrance of this Declaration and any and all obligations that may arise hereunder; provided, however, that Declarant shall not have the right to allocate or deliver any water from the Water Sources to such withdrawn property, and that the

Water Sources, Water Easements and Water Delivery System shall remain the property of Declarant or the Association.

7.12 Right to Terminate. Notwithstanding any other term or provision in this Declaration, this Declaration may be terminated unilaterally by Declarant if Declarant is unable to obtain and maintain the rights to all governmental licenses, permits and approvals necessary to withdraw water from the Water Sources, including the revocable permits currently owned by Del Monte for use of the Water Sources, pursuant to paragraph 2.3 (Licenses, Permits and Approvals) above. The termination of this Declaration shall be effective upon the recordation of a proper instrument with the Assistant Registrar of the Land Court of the State of Hawaii.

7.13 Duration. Unless terminated as provided above, this Declaration shall have perpetual duration. If Hawaii law hereafter limits the period during which covenants may run with the land, then to the extent consistent with such law, this Declaration shall automatically be extended at the expiration of such period for successive periods of 20 years.

7.14 Perpetuities. If any of the covenants, conditions, restrictions, or other provisions of this Declaration shall be unlawful, void, or voidable for violation of the rule against perpetuities, then such provisions shall continue only until 21 years after the death of the last survivor of the now living descendants of Elizabeth II, Queen of England.

7.15 Severability. Invalidation of any provision of this Declaration, in whole or in part, or any application of a provision of this Declaration by judgment or court order shall in no way affect other provisions or applications.

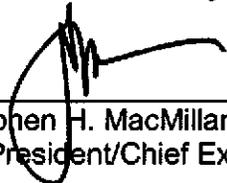
7.16 Captions. The captions of each Article and paragraph hereof, as to the contents of each Article and paragraph, are inserted only for convenience and are in no way to be construed as defining, limiting, extending, or otherwise modifying or adding to the particular Article or paragraph to which they refer.

[This space intentionally left blank; signature(s) on following pag(e)]

IN WITNESS WHEREOF, the undersigned have executed this Declaration as of the date first above written.

DECLARANT:

JAMES CAMPBELL COMPANY LLC, a
Delaware limited liability company

By 
Stephen H. MacMillan
Its President/Chief Executive Officer

By 
Bertram L. Hatton
Its Executive Vice President
Hawaii Land Management

STATE OF HAWAII)
) ss.
CITY AND COUNTY OF HONOLULU)

On this 13th day of December, 2007, before me personally appeared Stephen H. MacMillan and Bertram L. Hatton, to me personally known, who, being by me duly sworn or affirmed, did say that such persons executed the foregoing instrument as the free act and deed of such persons, and if applicable in the capacities shown, having been duly authorized to execute such instrument in such capacities.

LS

Lydia L. Hannemann
Notary Public, State of Hawaii
Name: Lydia L. Hannemann
My commission expires: Feb. 11, 2008

EXHIBIT A
Property Description

KUNIA SECTION 2:

PARCEL ONE:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT M-8-B (area 854.23 acres), as shown on Map 5, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,900** issued to James Campbell Company LLC, a Delaware limited liability company.

End of Parcel One Description

KUNIA SECTION 6:

PARCEL TWO:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT M-9-A (area 19.296 acres), as shown on Map 6, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,905** issued to James Campbell Company LLC.

End of Parcel Two Description

PARCEL THREE:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 169 (area 0.693 acres), as shown on Map 27, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,906** issued to James Campbell Company LLC.

End of Parcel Three Description

PARCEL FOUR:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 171 (area 1.319 acres), as shown on Map 27, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,907** issued to James Campbell Company LLC.

End of Parcel Four Description

PARCEL FIVE:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 416 (area 91.99 acres), as shown on Map 76, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,908** issued to James Campbell Company LLC.

End of Parcel Five Description

PARCEL SIX:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 878 (area 432.503 acres), as shown on Map 109, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,909** issued to James Campbell Company LLC.

End of Parcel Six Description

PARCEL SEVEN:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 879 (area 198.580 acres), as shown on Map 109, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,910** issued to James Campbell Company LLC.

End of Parcel Seven Description

PARCEL EIGHT:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 880 (area 93.117 acres), as shown on Map 109, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,911** issued to James Campbell Company LLC.

End of Parcel Eight Description

PARCEL NINE:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 881 (area 11.129 acres), as shown on Map 110, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,912** issued to James Campbell Company LLC.

End of Parcel Nine Description

KUNIA SECTION 8:

PARCEL TEN:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 882-A (area 425.963 acres), as shown on Map 110, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,913** issued to James Campbell Company LLC, a Delaware limited liability company.

End of Parcel Ten Description

KUNIA SECTIONS 7 & 9:

PARCEL ELEVEN:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT 16853 (area 2,507.948 acres), as shown on Map 1302, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,914** issued to James Campbell Company LLC, a Delaware limited liability company.

End of Parcel Eleven Description

PARCEL TWELVE:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT M-2 (area 0.028 acre), as shown on Map 4, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,915** issued to James Campbell Company LLC, a Delaware limited liability company.

End of Parcel Twelve Description

PARCEL THIRTEEN:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT M-3 (area 7.099 acres), as shown on Map 4, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,916** issued to James Campbell Company LLC, a Delaware limited liability company.

End of Parcel Thirteen Description

PARCEL FOURTEEN:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT M-4 (area 3.307 acres), as shown on Map 4, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,917** issued to James Campbell Company LLC, a Delaware limited liability company.

End of Parcel Fourteen Description

PARCEL FIFTEEN:

All of that certain parcel of land situate at Honouliuli, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

LOT M-5 (area 0.676 acre), as shown on Map 4, filed in the Office of the Assistant Registrar of the Land Court to the State of Hawaii with Land Court Application No. 1069 of the Trustees under the Will and of the Estate of James Campbell, Deceased.

BEING all of the land described in and covered by **Certificate of Title No. 830,918** issued to James Campbell Company LLC, a Delaware limited liability company.

End of Parcel Fifteen Description

PARCEL SIXTEEN:

All of that certain parcel of land situate at Hoaeae, District of Ewa, City and County of Honolulu, Island of Oahu, State of Hawaii, more particularly described as follows:

ROYAL PATENT NUMBER 4490, LAND COMMISSION AWARD 10,474, APANA 9 TO NAMAUU, situate, lying and being on the westerly side of Kunia Road, being PARCEL 5, and thus bounded and described as per survey dated August 8, 1988:

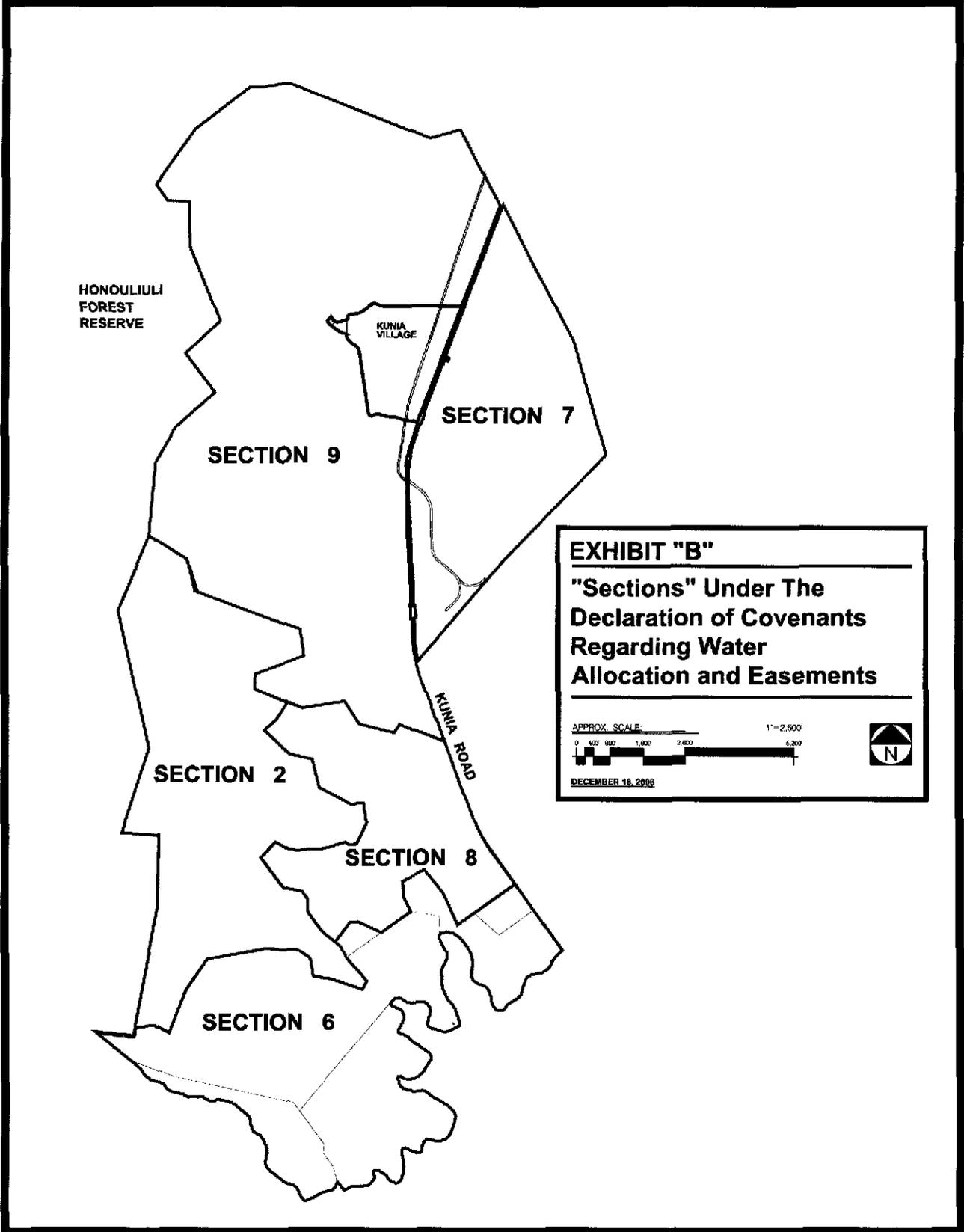
Beginning at the north corner of this parcel of land and on the westerly side of Kunia Road, the coordinates of said point being referred to Government Survey Triangulation Station "KAPUAI NEW", being 22,750.96 feet North and 4,331.52 feet East, thence running by azimuths measured clockwise from true South:

1. Along the westerly side of Kunia Road, on a curve to the left with a radius of 2,894.90 feet, the azimuth and distance of the chord being:

345° 29' 57" 611.81 feet;
2. 159° 26' 573.67 feet along Lot M-1-A-1 of Land Court Application 1069;
3. 221° 12' 30" 73.38 feet along Lot M-1-A-1 of Land Court Application 1069 to the point of beginning and containing an area of 11,930, square feet, more or less.

BEING a portion of the premises acquired by Trustees Limited Warranty Deed dated November 1, 2006, made by the Trustees under the Will and of the Estate of James Campbell, Deceased, as grantors, and James Campbell Company LLC, as grantee, filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii as Document No. 3505988 and recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 2006-198463.

End of Parcel Sixteen Description



HONOULIULI
FOREST
RESERVE

KUNIA
VILLAGE

SECTION 7

SECTION 9

SECTION 2

KUNIA ROAD

SECTION 8

SECTION 6

EXHIBIT "B"

**"Sections" Under The
Declaration of Covenants
Regarding Water
Allocation and Easements**

APPROX. SCALE: 1"=2,000'

0 400 800 1,600 2,000 5,200

DECEMBER 18, 2006

EXHIBIT C-1

Current Percentage of Water Allocation

Section	Percentage of Water Allocation up to Delivery Point
9	40.78%
8	13.74%
7	17.36%
6	3.82%
2	14.18%
Kunia Village Area	10.12%

EXHIBIT C-2

Percentage of Water Allocation including State of Hawaii Land

Section	Percentage of Water Allocation up to Delivery Point
9	35.70%
8	12.03%
7	15.20%
6	3.35%
2	12.41%
Kunia Village Area	8.87%
State of Hawaii	12.44%

W A I P I O
LD CT APP. 1000
SEC 6

W A I A N A E U K A
U. S. MILITARY RESERVATION
SCHOOL BARRACKS
ZONE 7

K E L E
AWARD
LOWER POUHALA
PLAT 04

HOAEE

M O N O U L I
SEC 2

UPPER POUHALA, WAIKOLE, BVA, OAHU

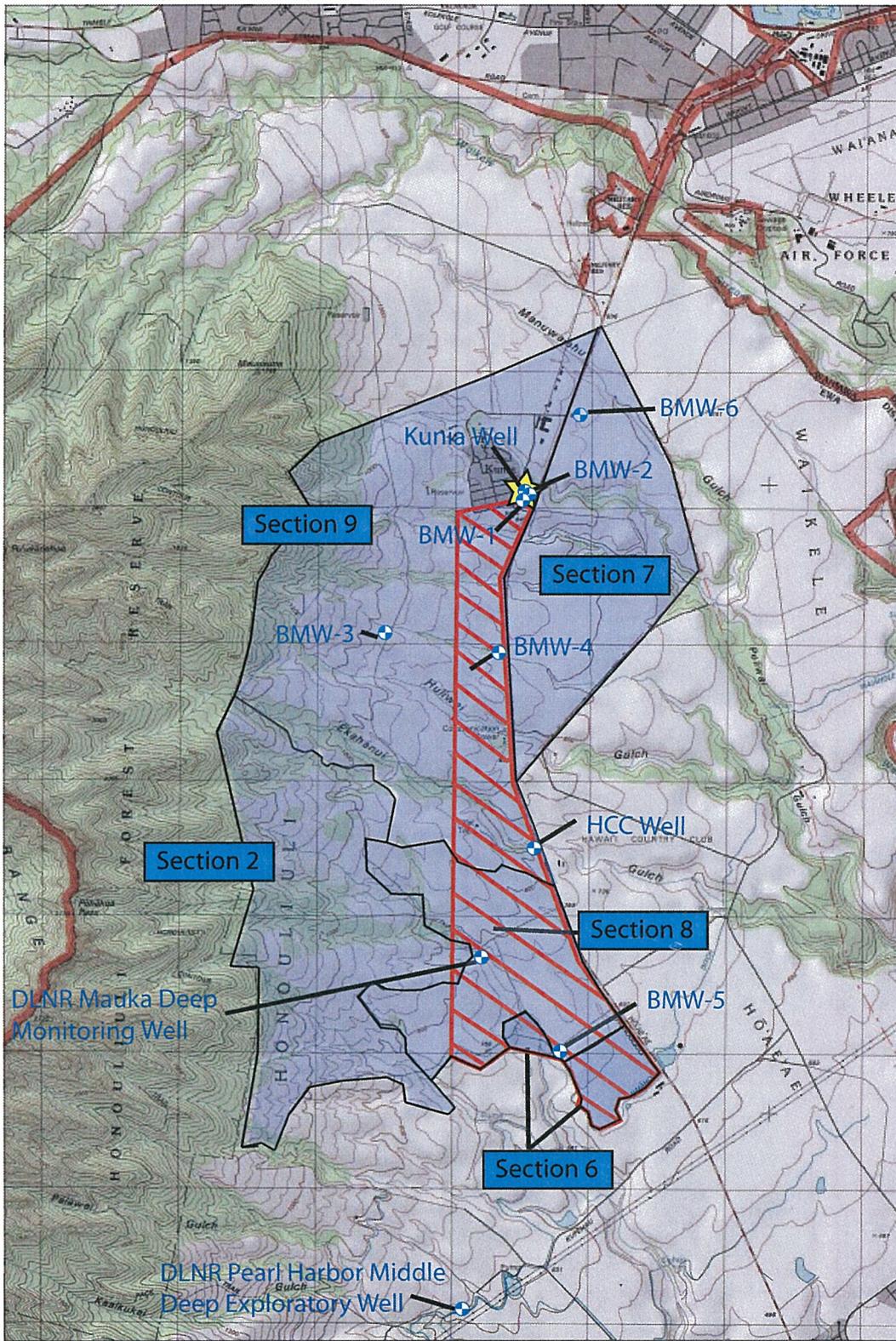
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TAXATION MAPS BUREAU
TERMINOLOGY
TAX MAP
ZONE 1 200' PLAT
9 4 12
CONTAINING PARCELS
SCALE 1" = 100' FT.

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 92. 100' PLAT
 93. 100' PLAT
 94. 100' PLAT
 95. 100' PLAT
 96. 100' PLAT
 97. 100' PLAT
 98. 100' PLAT
 99. 100' PLAT
 100. 100' PLAT

Eng. No. 2812
 Surveyed by W. H. B. & S. J. & S. J. & S. J.
 Date of Survey - Jan 1958

Attachment 2
Figures



EXPLANATION



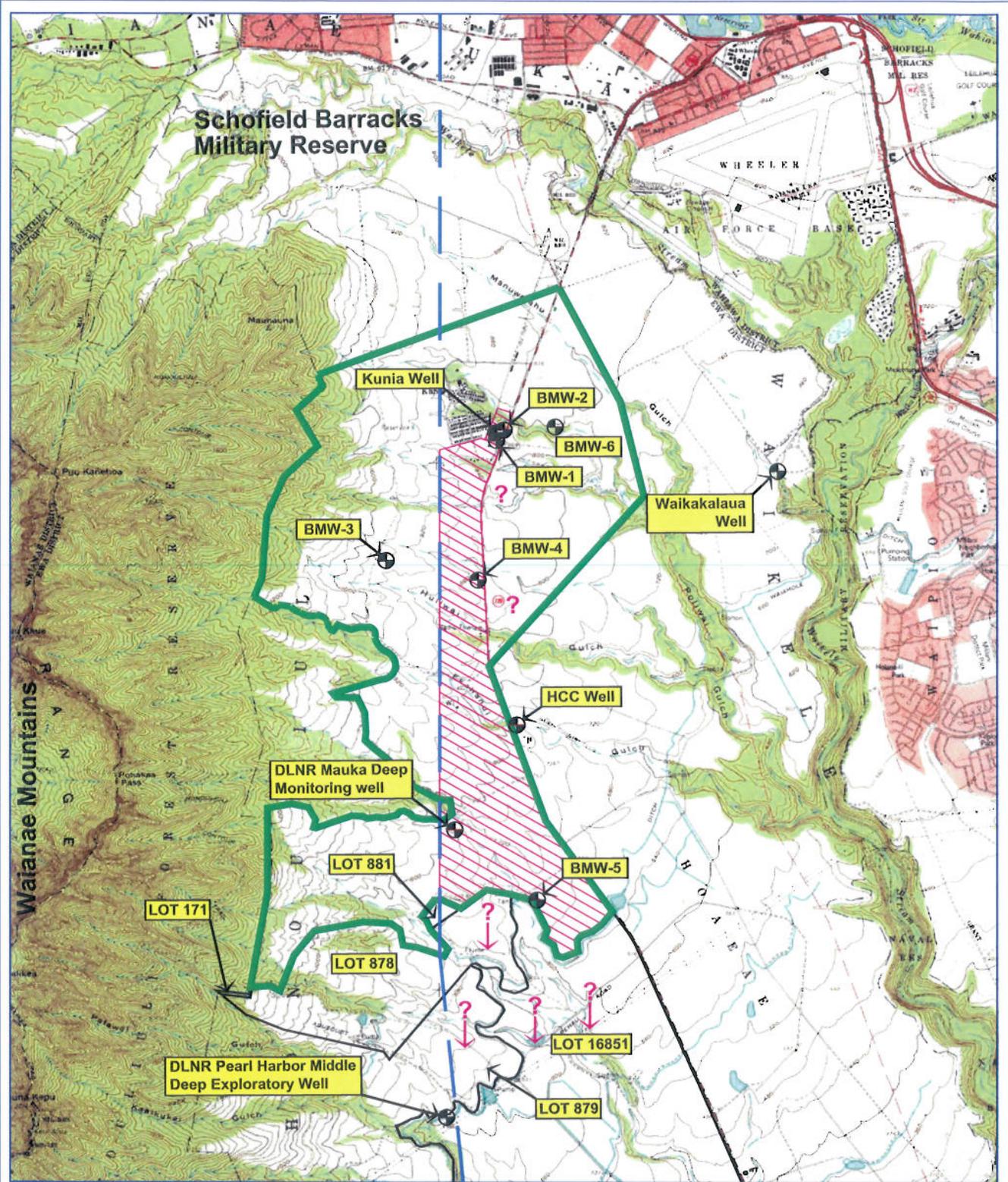
EPA Well Restriction Area



Source Area

Site Plan

Del Monte/Kunia



LEGEND

- Well Locations
- Del Monte Site Boundary
- Approximate Basal Aquifer Boundaries
- EPA Well Restriction Area
- Land Court Lots
- Certain areas subject to potential future investigation

0 4000
Scale: 1"=4000 Feet



**Del Monte Corporation
(Oahu Plantation) Superfund Site
and
Well Restriction Area**

NOTE: State Land Court Lots 171, 878, 881 and 16851 adjoin the Site and are not currently part of the Site. Portions of lots 878, 879, 881, and 16851 are subject to potential future investigation.

Appendix F
Site Inspection Checklist, Photographs,
and Figures

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**
- | | | | |
|-------------------------------------------------------|-------------------------------------------------------|------------------------------------------------|------------------------------|
| <input checked="" type="checkbox"/> O&M manual | <input checked="" type="checkbox"/> Readily available | <input checked="" type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
| <input checked="" type="checkbox"/> As-built drawings | <input checked="" type="checkbox"/> Readily available | <input checked="" type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
| <input checked="" type="checkbox"/> Maintenance logs | <input checked="" type="checkbox"/> Readily available | <input checked="" type="checkbox"/> Up to date | <input type="checkbox"/> N/A |

Remarks: O&M Manual for Kunia Well Treatment System (Golder, Oct. 2008), O&M Manual for Perched Groundwater Remediation System, including As-Built Drawings (Golder, June 2009), Compliance Monitoring Plan (Golder, July 2009), O&M records for perched and basal remediation systems, daily logs, weekly and monthly inspection logs

2. **Site-Specific Health and Safety Plan** Readily available Up to date N/A
- Contingency plan/emergency response plan Readily available Up to date N/A

Remarks: Remedial Action Health and Safety Plan – Golder, July 2009

3. **O&M and OSHA Training Records** Readily available Up to date N/A
- Remarks _____

4. **Permits and Service Agreements**
- | | | | |
|-----------------------------------------------|--------------------------------------------|-------------------------------------|-----------------------------------------|
| <input type="checkbox"/> Air discharge permit | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input checked="" type="checkbox"/> N/A |
| <input type="checkbox"/> Effluent discharge | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input checked="" type="checkbox"/> N/A |
| <input type="checkbox"/> Waste disposal, POTW | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input checked="" type="checkbox"/> N/A |
| <input type="checkbox"/> Other permits _____ | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input checked="" type="checkbox"/> N/A |

Remarks: CERCLA action, no permits required; substantive requirements are being met.

5. **Gas Generation Records** Readily available Up to date N/A
- Remarks:

6. **Settlement Monument Records** Readily available Up to date N/A
- Remarks: Consent Decree with James Campbell Co., LLC (March 2007); 2009 Institutional Controls Annual Report (LFR, Oct. 2009)

7. **Groundwater Monitoring Records** Readily available Up to date N/A
- Remarks: Quarterly basal and perched aquifer groundwater monitoring reports to document quarterly groundwater sampling events are submitted to EPA and Hawaii Department of Health

8. **Leachate Extraction Records** Readily available Up to date N/A
- Remarks:

9. **Discharge Compliance Records**
- | | | | |
|-------------------------------------------|-------------------------------------------------------|------------------------------------------------|------------------------------|
| <input type="checkbox"/> Air | <input checked="" type="checkbox"/> Readily available | <input checked="" type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
| <input type="checkbox"/> Water (effluent) | <input checked="" type="checkbox"/> Readily available | <input checked="" type="checkbox"/> Up to date | <input type="checkbox"/> N/A |

Remarks: Post-treatment air and groundwater discharge is monitored monthly and reported quarterly, meeting substantive permitting requirements.

10. **Daily Access/Security Logs** Readily available Up to date N/A
- Remarks _____

V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A

A. Fencing

1. **Fencing damaged** Location shown on site map Gates secured N/A
Remarks: There are locked, security fences, in good condition, around the perched aquifer source area, including perched aquifer wells, BMW-1 and BMW-2, and the phytoremediation areas (Figure 2-1). Additional fences surround both the perched and basal aquifer treatment systems. Gates are always locked unless personnel are onsite (see Photos 1 and 2)

B. Other Access Restrictions

1. **Signs and other security measures** Location shown on site map N/A
Remarks: There are signs posted on the fences and gates at both treatment systems.

C. Institutional Controls (ICs)

1. **Implementation and enforcement**
Site conditions imply ICs not properly implemented Yes No N/A
Site conditions imply ICs not being fully enforced Yes No N/A

Type of monitoring (*e.g.*, self-reporting, drive by) Daily personnel onsite, gates locked on weekends

Frequency Daily

Responsible party/agency Second City Property Management Inc.

Contact Shane Lee O&M Supervisor 808-674-9996
Name Title Phone no.

Reporting is up-to-date No Yes N/A

Reports are verified by the lead agency No Yes N/A

Specific requirements in deed or decision documents have been met Yes No N/A
Violations have been reported No N/A

Other problems or suggestions: Report attached

No violations, unauthorized entries, or vandalism reported

2. **Adequacy** ICs are adequate ICs are inadequate N/A
Remarks: The IC Consent Decree with James Campbell Company LLC (JCC) requires JCC to verify that owners and lessees have not undertaken any construction in the source area or well restriction area that would damage or interfere with the remediation systems or wells, or submitted a request for a water use permit to extract water from any well in the well restriction area without approval from EPA. A 2009 Annual IC report (LFR, Oct 2009) verifies that the Consent Decree is being complied with.

D. General

1. **Vandalism/trespassing** Location shown on site map No vandalism evident
Remarks: _____
2. **Land use changes on site** N/A
Remarks: Currently zoned for agricultural use (AG-1) as in previous years.

3. **Land use changes off site** N/A
Remarks: _____

VI. GENERAL SITE CONDITIONS

A. Roads Applicable N/A

1. **Roads damaged** Location shown on site map Roads adequate N/A
Remarks: Unpaved roads

B. Other Site Conditions

Remarks _____

VII. LANDFILL COVERS Applicable N/A

A. Landfill Surface

1. **Settlement** (Low spots) Location shown on site map Settlement not evident
Areal extent _____ Depth _____
Remarks Vegetated cover appears to be in good condition. No settlement observed. Fresh soil had been placed around several perched aquifer extraction well pads to make them match existing surface grade (see Photos 3 and 4) and mitigate any future erosion/settlement issues.

2. **Cracks** Location shown on site map Cracking not evident
Lengths _____ Widths _____ Depths _____
Remarks _____

3. **Erosion** Location shown on site map Erosion not evident
Areal extent _____ Depth _____
Remarks Fresh soil had been placed around several perched aquifer extraction well pads to make them match existing surface grade and mitigate any future erosion/settlement issues.

4. **Holes** Location shown on site map Holes not evident
Areal extent _____ Depth _____
Remarks _____

5. **Vegetative Cover** Grass Cover properly established No signs of stress
 Trees/Shrubs (indicate size and locations on a diagram)
Remarks Vegetated cover appears healthy and well maintained. Areal extent is shown on Figure 3-1.

6. **Alternative Cover (armored rock, concrete, etc.)** N/A
Remarks _____

7. **Bulges** Location shown on site map Bulges not evident
Areal extent _____ Height _____
Remarks _____

8. **Wet Areas/Water Damage** Wet areas/water damage not evident
 Wet areas Location shown on site map Areal extent _____
 Ponding Location shown on site map Areal extent _____
 Seeps Location shown on site map Areal extent _____
 Soft subgrade Location shown on site map Areal extent _____
Remarks _____

9. **Slope Instability** Slides Location shown on site map No evidence of slope instability
Areal extent _____
Remarks _____

B. Benches Applicable N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** Location shown on site map N/A or okay
Remarks _____

2. **Bench Breached** Location shown on site map N/A or okay
Remarks _____

3. **Bench Overtopped** Location shown on site map N/A or okay
Remarks _____

C. Letdown Channels Applicable N/A
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** Location shown on site map No evidence of settlement
Areal extent _____ Depth _____
Remarks Stormwater diversion channel, lined with rip-rap in good condition and functioning as designed (see Photo 5).

2. **Material Degradation** Location shown on site map No evidence of degradation
Material type _____ Areal extent _____
Remarks _____

3. **Erosion** Location shown on site map No evidence of erosion
Areal extent _____ Depth _____
Remarks _____

4. **Undercutting** Location shown on site map No evidence of undercutting
Areal extent _____ Depth _____
Remarks _____

5. **Obstructions** Type _____ No obstructions
 Location shown on site map Areal extent _____
Size _____
Remarks _____

6. **Excessive Vegetative Growth** Type _____
 No evidence of excessive growth
 Vegetation in channels does not obstruct flow
 Location shown on site map Areal extent _____
 Remarks Vegetation (California grass) in lower stormwater channel helps filter stormwater runoff and keeps culvert underneath Kunia road free of debris.

D. Cover Penetrations Applicable N/A

1. **Gas Vents** Active Passive
 Properly secured/locked Functioning Routinely sampled Good condition
 Evidence of leakage at penetration Needs Maintenance
 N/A
 Remarks: _____

2. **Gas Monitoring Probes**
 Properly secured/locked Functioning Routinely sampled Good condition
 Evidence of leakage at penetration Needs Maintenance N/A
 Remarks SVE and dual-phase extraction wells have vacuum ports that are measured regularly (daily or weekly) to log vacuums on active SVE headers (Photo 6). Regular air sampling is done at header manifolds (Photo 7).

3. **Monitoring Wells** (within surface area of landfill)
 Properly secured/locked Functioning Routinely sampled Good condition
 Evidence of leakage at penetration Needs Maintenance N/A
 Remarks Perched and basal aquifer monitoring wells are sampled quarterly. Perched wells are within the locked fence around the source area. Basal wells are locked within steel monuments. To eliminate malfunctions and logistical challenges Del Monte has recently received approval from EPA to pull submersible pumps from all basal monitoring wells and sample using point-source bailers.

4. **Leachate Extraction Wells**
 Properly secured/locked Functioning Routinely sampled Good condition
 Evidence of leakage at penetration Needs Maintenance
 N/A
 Remarks: _____

5. **Settlement Monuments** Located Routinely surveyed N/A
 Remarks: _____

E. Gas Collection and Treatment Applicable N/A

1. **Gas Treatment Facilities**
 Flaring Thermal destruction Collection for reuse
 Good condition Needs Maintenance
 Remarks: _____

2. **Gas Collection Wells, Manifolds and Piping**
 Good condition Needs Maintenance
 Remarks: _____

3. **Gas Monitoring Facilities** (e.g., gas monitoring of adjacent homes or buildings)
 Good condition Needs Maintenance N/A
 Remarks: _____

F. Cover Drainage Layer

Applicable N/A

1. **Outlet Pipes Inspected**
Remarks _____

Functioning N/A

2. **Outlet Rock Inspected**
Remarks _____

Functioning N/A

G. Detention/Sedimentation Ponds

Applicable N/A

1. **Siltation** Areal extent _____ Depth _____ N/A
 Siltation not evident
Remarks _____

2. **Erosion** Areal extent _____ Depth _____
 Erosion not evident
Remarks _____

3. **Outlet Works** Functioning N/A
Remarks _____

4. **Dam** Functioning N/A
Remarks _____

H. Retaining Walls

Applicable N/A

1. **Deformations** Location shown on site map Deformation not evident
Horizontal displacement _____ Vertical displacement _____
Rotational displacement _____
Remarks _____

2. **Degradation** Location shown on site map Degradation not evident
Remarks _____

I. Perimeter Ditches/ Off-Site Discharge

Applicable N/A

1. **Siltation** Location shown on site map Siltation not evident
Areal extent _____ Depth _____
Remarks _____

2. **Vegetative Growth** Location shown on site map N/A
 Vegetation does not impede flow
Areal extent _____ Type _____
Remarks Vegetation (California grass) in lower stormwater channel helps filter stormwater runoff and keeps culvert underneath Kunia road free of debris

3. **Erosion** Location shown on site map Erosion not evident
Areal extent _____ Depth _____
Remarks _____

4. **Discharge Structure** Functioning N/A
Remarks: Stormwater drainage channel along east portion of perched aquifer source area discharges to a culvert underneath Kunia Rd (see Figure 3-1).

VIII. VERTICAL BARRIER WALLS Applicable N/A

1. **Settlement** Location shown on site map Settlement not evident
Areal extent _____ Depth _____
Remarks _____
2. **Performance Monitoring** Type of monitoring _____
 Performance not monitored
Frequency _____ Evidence of breaching
Head differential _____
Remarks _____

IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
 Good condition All required wells properly operating Needs Maintenance N/A
Remarks Perched aquifer source area wells and piping layout are shown on attached Figure P-325.
2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
 Good condition Needs Maintenance
Remarks All extraction wells are in good condition and properly secured.
3. **Spare Parts and Equipment**
 Readily available Good condition Requires upgrade Needs to be provided
Remarks _____

B. Surface Water Collection Structures, Pumps, and Pipelines Applicable N/A

1. **Collection Structures, Pumps, and Electrical**
 Good condition Needs Maintenance
Remarks _____
2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
 Good condition Needs Maintenance
Remarks _____
3. **Spare Parts and Equipment**
 Readily available Good condition Requires upgrade Needs to be provided
Remarks _____

concentrations have decreased in the Kunia Well since the RI was completed and the source area is effectively contained. COC concentrations in downgradient monitoring wells remain stable and consistent, but this may be because they are influenced by background COC concentrations. Figure 3-6 shows the basal aquifer monitoring well network.

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
 Properly secured/locked Functioning Routinely sampled Good condition
 All required wells located Needs Maintenance N/A
 Remarks Monitored natural attenuation is a contingency remedy for the downgradient basal groundwater. However, this remedy may not be effective because downgradient concentrations may be the result of background concentrations of COCs above MCLs. EPA has indicated that a Technical Impracticability waiver may be appropriate for the site.

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy.

A. Soil Vapor Extraction Wells, Pumps, and Pipelines Applicable N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
 Good condition All required wells properly operating Needs Maintenance N/A
 Remarks The SVE system, started in full-scale operation in late 2008, operates in conjunction with perched aquifer groundwater extraction system in dual extraction wells, and also in SVE-only wells. In dual extraction wells, automated pneumatic pumps keep the groundwater level near the bottom of the well, and active SVE exerts a vacuum on the unsaturated zone to remove COC mass from the deeper soils. There are 9 SVE headers (Photo 14), with usually 3-4 headers being active at a time. The vacuum is created with a liquid ring pump (Photo 15) and with the vapors being treated in two in-line activated carbon canisters (Photo 16) before being released to the atmosphere.
2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
 Good condition Needs Maintenance
 Remarks All SVE extraction wells associated with the on-site treatments system were observed to be in good condition.
3. **Spare Parts and Equipment**
 Readily available Good condition Requires upgrade Needs to be provided
 Remarks _____

B. Soil Vapor Monitoring Data

1. **Monitoring Data**
 Is routinely submitted on time Is of acceptable quality
2. **Monitoring data suggests:**
 Contaminant concentrations are declining
 Remarks: Soil vapor data are measured daily, weekly, or monthly, depending upon the phase of the operation (more frequently at startup). Active headers are alternated throughout the site to allow recovery/rebound of COC concentrations after they reach asymptotic levels. COC concentrations are declining however, mass recoveries to date are generally low.

A. Phytoremediation System

Applicable

N/A

1. **Vegetative Cover** Grass Cover properly established No signs of stress
 Trees/Shrubs (indicate size and locations on a diagram)

Remarks Phytoremediation system appears very healthy. This system consists of about 2 acres of plants in a lined containment area. Prior to construction of the KWTS, extracted perched groundwater was pumped from the White Tank to irrigate the plants. Analytical testing of the soil and plant material indicated no detections above screening criteria of COCs. Currently, extracted perched groundwater is held in the White Tank and treated at the KWTS, and the phytoremediation system typically receives irrigation from the White Tank about once/week to keep the plants healthy, or if the KWTS is shut down for maintenance, etc.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The Remedial Action Objectives (RAOs) specified in the ROD for the Del Monte Corp. (Oahu Plantation) Superfund site are to: (1) prevent exposure of the public to contaminated groundwater above the cleanup levels (MCLs); (2) inhibit further migration of the contaminant plume away from the Kunia Village source area; (3) limit discharge of perched groundwater and deep soil contaminants to basal groundwater such that basal groundwater concentrations do not exceed MCLs; (4) restore basal groundwater to beneficial use as a drinking water resource in a reasonable timeframe.

The implementation of this remedy continues with basal groundwater extraction and treatment from the Kunia Well to effect plume capture and source control. Approximately 1 million gallons per day are extracted and treated to below MSLs at the KWTS before discharge for agricultural irrigation. For the perched aquifer contamination the remedy consists of groundwater extraction and treatment and a vegetated cover/stormwater controls to effect perched groundwater source control and inhibit infiltration of perched groundwater to the basal aquifer. This is augmented with SVE to address deeper soil contamination and institutional controls. Perched groundwater is treated at the KWTS or the phytoremediation system. Soil vapor is treated with carbon and discharged to the air. The perched and basal groundwater monitoring and SVE well network, KWTS, and SVE system continues to be monitored monthly and quarterly, and reported on a quarterly basis. The Kunia Well and KWTS have been operating since Sept. 2005. Six basal groundwater monitoring wells have been installed by Del Monte from about 1995 through 2007. Monitoring is also conducted at two State-owned monitoring wells. The full perched aquifer remediation system including extraction wells, SVE, monitoring wells, vegetated cover, and institutional controls was completed in 2008.

Based on this site inspection, quarterly basal and perched monitoring reports, monthly status reports, and a 3-Year cumulative basal monitoring report, it appears that the basal and perched remedies and institutional controls are currently functioning as intended by the ROD. However, due to the presence of background concentrations of COCs in basal groundwater above MCLs, a TI waiver and possibly a ROD amendment may be needed for the remedies as it does not currently appear that reducing basal groundwater COC concentrations to less than MCLs is feasible.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

A site inspection was conducted with EPA on January 27, 2010 concurrently with interviews of the Golder project manager, site O&M supervisor, and HDOH representative. The basal and perched remediation systems and current O&M activities and documentation all appeared to be in order, and in compliance with the O&M manuals and Compliance Monitoring Plan (CMP), and the remedies are considered to be protective.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

Periodic problems have been encountered during quarterly basal groundwater monitoring episodes because of malfunctions with submersible pumps and piping. With EPA approval, all submersible pumps have been removed from basal monitoring wells and replaced with dedicated point-source bailers. This should eliminate quarterly basal monitoring data gaps. Minor adjustments are being made to some of the piping and perched groundwater extraction pumps to overcome backpressure problems and increase extraction efficiency. No other significant or unexpected issues have been identified.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

The Kunia well pumping/source control and KWTS are functioning well and containing the basal plume and treating extracted groundwater to less than MCLs. The basal groundwater monitoring program is being optimized by using point source bailers, which give very consistent analytical results, and eliminate problems with submersible pumps, and transport and disposal of hundreds of gallons of purged groundwater.

Operation of the perched aquifer extraction wells and SVE system are being optimized by daily, weekly, and monthly measurements. Perched groundwater extraction rates have improved dramatically with the installation of automatic pneumatic pumps which has resulted in increased source control and dewatering of the perched aquifer. SVE mass recoveries are generally low and could possibly be optimized through continued evaluation of recoveries from various wells and headers.



Photo 1: Security Fence and Locked Gate with Kunia and Well Treatment System



Photo 2: Phytoremediation System with Security Fence



Photo 3: Vegetated Cover with Perched Aquifer Extraction Wells and Perched Aquifer Treatment System in Background



Photo 4: Vegetated Cover and Dual Extraction Well (Groundwater and Soil Vapor) Showing Soil Placed Around Concrete Pad



Photo 5: Perched Aquifer Stormwater Diversion Channel



Photo 6: Dual Extraction Well Showing Groundwater Sampling Port (lower right) and Soil Vapor Vacuum Measurement Port (upper right)



Photo 7: Soil Vapor Extraction Headers with Sampling Ports



Photo 8: Kunia Well Treatment System Air Stripping Tower (left) and Carbon Adsorption Tower (right)



Photo 9: Kunia Well Treatment System Carbon Adsorption Tower and Distribution Piping



Photo 10: White Tank Temporary Storage for Extracted Perched Groundwater and Influent Pipe (left) Distribution Piping to the KWTS or Phytoremediation System (right)



Photo 11: Phytoremediation System During Site Inspection



Photo 12: KWTS Control Panel



Photo 13: Perched Aquifer Remediation System Control Panels



Photo 14: Soil Vapor Extraction Headers 1 through 9 (left to right), with Yellow on/off Handles (only Headers 6, 8, and 9 are active)

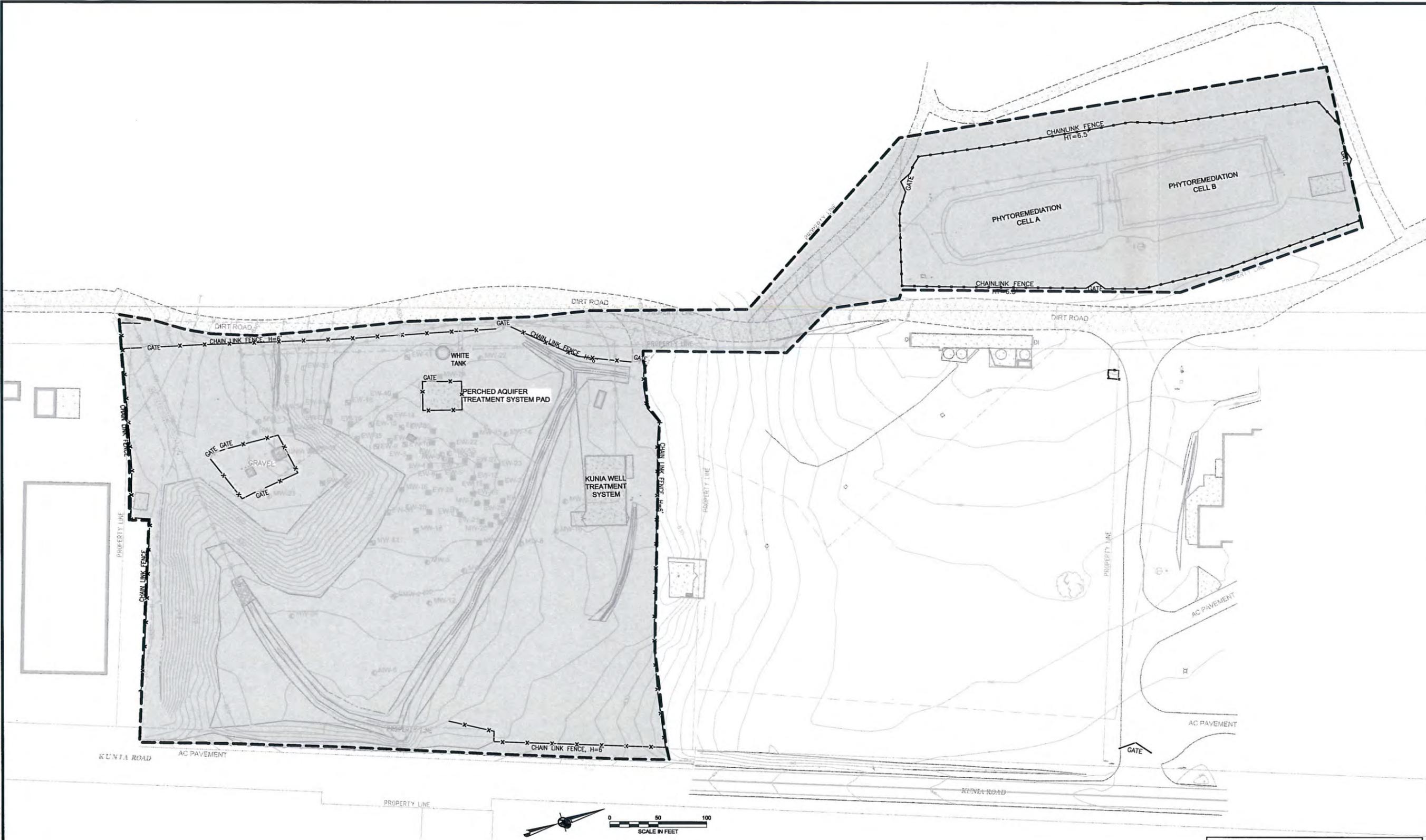


Photo 15: Soil Vapor Extraction System Liquid Ring Vacuum Pump



Photo 16: Soil Vapor Extraction System Carbon Adsorption Tanks (in-line) with Soil Vapor Inlet (lower left) Exhaust Port to Atmosphere (top right)

REV	DATE	DES	ISSUED FOR	DESCRIPTION	CADD	CHK	R/W
1	6/18/09	AGR	ISSUED FOR FINAL O&M & FINAL CIP DOCUMENT	SES			



LEGEND:

	APPROXIMATE EPA "SOURCE AREA" BOUNDARY
	PERCHED ZONE MONITORING WELL
	DUAL WELL: GROUNDWATER AND SVE
	SVE WELL ONLY
	GROUNDWATER EXTRACTION WELL ONLY
	BASAL MONITORING WELL

NOTES:
 1. SOURCE: BASE MAP AND WELL LOCATION FROM SURVEY COMPLETED AUGUST, 2008.
 2. EPA "SOURCE AREA" DEFINED IN THE INSTITUTIONAL CONTROLS CONSENT DECREE BETWEEN JAMES CAMPBELL COMPANY LLC AND EPA FILED ON SEPTEMBER 18, 2007.

**DEL MONTE/OAHU
 PLANTATION/RD/HI**

**EPA
 SOURCE AREA**

TITLE

PROJECT	No. 963-1532-002.3000
FILE	No. 963_1532_002_3000_P-521.dwg
REV.	0 SCALE AS SHOWN
DESIGN	AGR 6/18/09
CADD	SES 6/18/09
CHECK	AGR 6/18/09
REVIEW	GLZ 6/18/09

FIGURE 2-1

K:\CADD\Projects\1996\9631532\002\3000\002_3000_P-521.dwg | P-521 | Mod: 06/18/2009, 11:43 | Plot: 06/18/2009, 11:44 | SS: rmm



LEGEND:

	PERCHED ZONE MONITORING WELL
	DUAL WELL: GROUNDWATER AND SVE
	SVE WELL ONLY
	GROUNDWATER EXTRACTION WELL ONLY
	BASAL MONITORING WELL
	KUNIA WELL PIPELINE
	GUTTER DRAINAGE PIPELINE
	STORMWATER PIPELINE
	POWER LINE
	VEGETATED SOIL CAP AREA

DESCRIPTIONS:

GW ONLY	GROUNDWATER EXTRACTION WELL ONLY
SVE	SVE WELL
DUAL	GROUNDWATER EXTRACTION AND SVE WELL

NOTES:
 1. BERMUDA GRASS / RYE HYDROSEED MIX USED FOR REVEGETATION.
 SOURCE: BASE MAP AND WELL LOCATION FROM SURVEY COMPLETED AUGUST, 2008.

FIGURE 3-1
PERCHED AQUIFER
VEGETATED SOIL CAP AND DRAINAGE AREAS
 DEL MONTE/OAHU PLANTATION/RD/HI

K:\CAD\Projects\18989631332_002_9200_FINAL\963_1532_002_9200_PLANS.dwg | P-325 | Mod: 08/20/2008, 13:54 | Plot: 08/20/2008, 14:16 | N:\Merich



NEW GROUNDWATER LINES:
7 WELLS
4 WELLS: EW-36, EW-37, EW-42, HW-3
(TIE TO EW-34)
3 WELLS: EW-38, MW-13, MW-18
(TIE TO EW-22)

COMPRESSED AIR LINE:
21 WELLS
A 1 WELL: EW-41
B 6 WELLS: EW-33, EW-36, EW-37, EW-42, HW-3
C 5 WELLS: EW-15, EW-16, EW-31, EW-32, EW-34
D 6 WELLS: EW-2, EW-9, EW-13, EW-14, EW-28, EW-35
E 4 WELLS: EW-10, EW-38, MW-13, MW-18

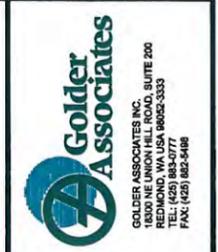
SVE LINE:
49 WELLS
1 3 WELLS: EW-36, EW-37, EW-42
2 3 WELLS: EW-40, EW-41, MW-2A
3 5 WELLS: EW-15, EW-16, EW-31, EW-32, EW-34
4 6 WELLS: EW-2, EW-9, EW-13, EW-14, EW-28, EW-35
5 8 WELLS: EW-3, EW-10, EW-20, EW-26, EW-38, MW-13, MW-16, MW-18
6 7 WELLS: EW-4, EW-5, EW-7, EW-8, EW-11, EW-22, EW-39
7 6 WELLS: EW-6, EW-12, EW-17, EW-19, EW-27, MW-7
8 5 WELLS: EW-18, EW-21, EW-23, EW-25, MW-19
9 6 WELLS: EW-24, EW-29, EW-30, MW-15, MW-20, MW-21

LEGEND:

○ MW-10	PERCHED ZONE MONITORING WELL	— W — W —	KUNIA WELL PIPELINE	○	PERCHED SOURCE AREA
■ EW-9	DUAL WELL: GROUNDWATER AND SVE	— G — G —	ABOVEGROUND GROUNDWATER PIPELINE		
■ EW-40	SVE WELL ONLY	— G - - - G - - -	BURIED GROUNDWATER PIPELINE		
○ HW-3	GROUNDWATER EXTRACTION WELL ONLY	— A — A —	COMPRESSED AIR PIPELINE		
◆ BMW-2	BASAL MONITORING WELL	— S — S —	SVE PIPELINE		
		— — — — —	GUTTER DRAINAGE PIPELINE		
		— — — — —	STORMWATER PIPELINE		
		— — — — —	POWER LINE		

DESCRIPTIONS:
GW ONLY GROUNDWATER EXTRACTION WELL ONLY
SVE SVE WELL
DUAL GROUNDWATER EXTRACTION AND SVE WELL

NOTES:
SOURCE: BASE MAP AND WELL LOCATION FROM SURVEY COMPLETED AUGUST, 2008.



REV	DATE	DES	CHK	ROW	REVISION DESCRIPTION
1	9/30/08	AGD	AGD	GLZ	AS-BUILT
2	11/09/07	LKH	KAN	AGD	ISSUED FOR DESIGN REPORT

PROJECT

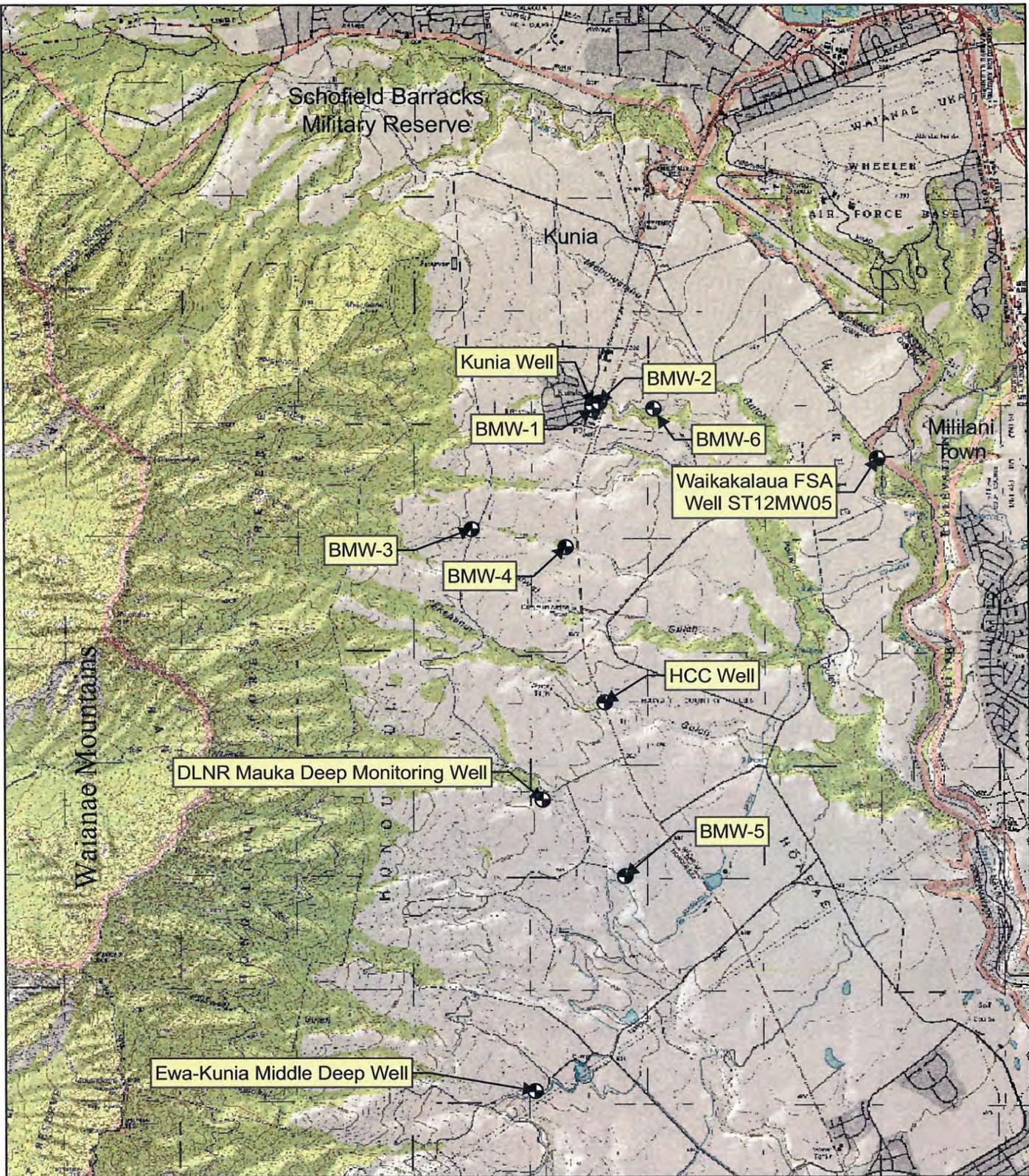
DEL MONTE/OAHU PLANTATION/RD/HI

PERCHED AQUIFER SOURCE AREA PIPING LAYOUT

TITLE

PROJECT No. 963-1532-002.9200
FILE No. 963_1532_002_9200_PLANS.dwg

REV.	SCALE	AS SHOWN
DESIGN	AGD	9/14/07
CADD	NED	8/15/08
CHECK	AGD	9/08/08
REVIEW	GLZ	9/15/08



LEGEND
 ● Well Locations

0 4,000

Scale 1" = 4,000 Feet

Map Projection:
 Hawaii State Plane
 Zone 3, NAD 83, Feet

Source: USGS,
 R.I. Report (Golder 1998)



This figure was originally produced in color. Reproduction in black and white may result in loss of information.

Basal Groundwater Monitoring Well Locations

DEL MONTE/OAHU PLANTATION RI/FS/HI

Drawn: TH	Revision: 0	Date: Oct. 1, 2008	Figure: 3-6
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Appendix G
Technical Interviews

INTERVIEW DOCUMENTATION FORM

The following is a list of individuals interviewed for this five-year review. See the attached contact records for a detailed summary of the interviews.

<u>Name</u>	<u>Title/Position</u>	<u>Organization</u>	<u>Date</u>
Eric Sadoyama	Remedial Project Manager	Hawaii Dept. of Health	Jan. 27, 2010
<u>Name</u>	<u>Title/Position</u>	<u>Organization</u>	<u>Date</u>
Gary Zimmerman	Project Manager	Golder Associates	Jan. 27, 2010
<u>Name</u>	<u>Title/Position</u>	<u>Organization</u>	<u>Date</u>
Shane Lee	O&M Supervisor	Second City Property Management, Inc.	Jan. 27, 2010

INTERVIEW RECORD		
Site Name: Del Monte Corp. (Oahu Plantation) Superfund Site		EPA ID No.: HID980637631
Subject: Interview with Hawaii Dept. of Health Representative.		Time: 1130
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit		Date: 1/27/2010
Location of Visit: Del Monte Site		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing
Contact Made By:		
Name: Jeff Cotter	Title: Project Manager	Organization: CH2M HILL, Inc.
Individual Contacted:		
Name: Eric Sadoyama	Title: Remedial Project Manager	Organization: Hawaii Dept. of Health, Hazard Evaluation and Emergency Response Office
Phone No: 808-586-4249 Fax No: 808-586-7537 E-mail Address: eric.sadoyama@doh.hawaii.gov	Street Address: 919 Ala Moana Blvd., Room 206 City, State, Zip: Honolulu, HI, 96814	
Summary Of Conversation		
<p>Jeff Cotter from CH2M HILL conducted an interview with Eric Sadoyama of the Hawaii Department of Health (HDOH) on January 27, 2010 as part of the site inspection and technical review being conducted for the Del Monte 5-year review report. Mr. Sadoyama has been involved with the Del Monte site since 2002 as the HDOH point of contact for the project.</p> <p>Eric indicated that overall he believes the project is well run and making good progress. There is a cooperative relationship between all parties and he keeps informed by reviewing project submittals that come to his office. Because EPA is the lead agency, HDOH does not participate significantly in the project other than to keep informed and provide information to the public and stakeholders when requested. Eric is not aware of any public complaints or violations reported for the project.</p> <p>Eric receives electronic copies of all project submittals provided by Del Monte and Golder, and maintains them on an HDOH file server site. Eric did not have any comments, suggestions, or recommendations regarding the site. He said that he feels the project is progressing well.</p>		

INTERVIEW RECORD		
Site Name: Del Monte Corp. (Oahu Plantation) Superfund Site		EPA ID No.: HID980637631
Subject: Golder Associates Project Manager		Time: 1300 Date: 1/27/2010
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit Location of Visit: Del Monte Site		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing
Contact Made By:		
Name: Jeff Cotter	Title: Project Manager	Organization: CH2M HILL, Inc.
Individual Contacted:		
Name: Gary Zimmerman	Title: Project Manager	Organization: Golder Associates
Phone No: 425-883-0777 Fax No: 425-882-4598 E-mail Address: gary_zimmerman@golder.com	Street Address: 18300 NE Union Hill Road, Suite 200 City, State, Zip: Redmond, WA, 98052	
Summary Of Conversation		
<p>Jeff Cotter from CH2M HILL conducted an interview with Gary Zimmerman (Golder Assoc.) on January 27, 2010 at 1300 as a part of the site inspection and technical review being conducted for the Del Monte 5-year review report. Gary has been involved with the Del Monte site since 1997, as the Field Geologist, and then Project Manager. Golder Assoc. has been the consultant to the potentially responsible party (PRP), Del Monte Corp. since the initiation of the Remedial Investigation/Feasibility Study, through Remedial Design/Remedial Action, and is now, along with their subcontractor Second City Property Management, Inc. managing the remediation systems O&M, and assisting Del Monte comply with the Record of Decision (ROD) requirements related to groundwater and soil vapor extraction (SVE) monitoring and treatment.</p> <p>Gary indicated that his overall impression of the site and the treatment systems is that they are functioning as designed and intended. According to Gary, monitoring data indicate that the perched groundwater extraction and treatment system has significantly decreased constituents of concern (EDB, DBCP, and DCP) concentrations at the base of the perched aquifer. The SVE system, while functioning as designed, is not able to treat the most contaminated portions of the perched aquifer that remain saturated at the very base of the aquifer and just below the reach of the extraction pumps. Concentrations of COCs in the basal aquifer have remained very consistent for over 5 years. Pumping of the Kunia well is capturing the COCs in the basal aquifer, and from the perched aquifer source as intended. However, basal groundwater in the vicinity of the Kunia Well is also being affected by background concentrations of COCs above the Maximum Contaminant Levels (MCLs).</p> <p>There is a continuous Operations and Maintenance (O&M) presence onsite monitoring and maintaining the remediation systems and site security. Personnel consist of Second City Property Management staff - Shane Lee, O&M supervisor and 3 staff members responsible for daily measurement and maintenance of the systems. Shane Lee reports to Gary on a regular basis regarding system status.</p>		

Regarding unanticipated difficulties or costs, granular activated carbon (GAC) from the Kunia Well Treatment System (KWTS) was changed out in early 2009, due to breakthrough of COCs above MCLs in the effluent. The bituminous-based GAC was replaced with coconut-based GAC and, based on monthly performance monitoring results over the past year, appears to be working very well. There was a large unanticipated cost related to the GAC changeout due to RCRA regulations requiring that the spent carbon be disposed as hazardous waste on the U.S. mainland.

Regarding optimizing O&M and monitoring, the change to using point-source bailers for basal well monitoring rather than submersible pumps will result in cost savings and more reliable monitoring data. Minor adjustments to the SVE system and perched groundwater extraction system are resulting in improved efficiencies there.

Regarding other comments or suggestions, Gary indicated that the remedial action objectives and performance criteria specified in the 2003 ROD will need to be re-evaluated and likely revised. Monitoring data and site characterization information gained since 2003 strongly indicate that background concentrations of COCs in the basal aquifer are greater than MCLs, therefore the ROD requirements to clean up groundwater to below MCLs are infeasible. Similarly, the performance criteria for the perched aquifer are also unobtainable, since Golder strongly believes that the perched aquifer source zone is no longer contributing COCs greater than MCLs to the basal aquifer. The issue of background concentrations of COCs in the basal aquifer will need to be carefully evaluated in the near future to establish more attainable performance criteria.

Gary was asked if there are other improvements that might be made to reduce infiltration through the perched aquifer, such as additional or deeper groundwater extraction wells, or an impermeable surface cap. He does not believe that installation of deeper extraction wells is advisable based on his field observations that if a borehole penetrates the bottom of the perched aquifer (greater than about 100 ft deep), unsaturated basalt is encountered and any perched water present quickly drains away into the unsaturated basalt. He also does not believe that an impermeable cap over the perched aquifer would improve dewatering/infiltration as his belief is that the bulk of infiltrating perched groundwater comes in horizontally from the west (upgradient), and not from surface infiltration.

Finally, Gary indicated that he believes the Del Monte site has progressed well since the ROD was signed due to a close, constructive, and cooperative working relationship between EPA, Golder, Del Monte, CH2M HILL, and Hawaii Department of Health (HDOH).

INTERVIEW RECORD

Site Name: Del Monte Corp. (Oahu Plantation) Superfund Site		EPA ID No.: HID980637631	
Subject: Second City Property Management, Inc. O&M Supervisor		Time: 1400	Date: 1/27/2010
Type: <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Visit Location of Visit: Del Monte Site		<input type="checkbox"/> Incoming <input checked="" type="checkbox"/> Outgoing	
Contact Made By:			
Name: Jeff Cotter		Title: Project Manager	Organization: CH2M HILL, Inc.
Individual Contacted:			
Name: Shane Lee		Title: O&M Supervisor	Organization: Second City Property Management, Inc.
Phone No: 808-674-9996 Fax No: 808-674-9997 E-mail Address: shane_m_lee@me.com		Street Address: PO Box 700489 City, State, Zip: Kapolei, HI, 96709	
Summary Of Conversation			
<p>Jeff Cotter from CH2M HILL conducted an interview with Shane Lee (Second City Property Management) on January 27, 2010 as part of the site inspection and technical review being conducted for the Del Monte 5-year review report. Shane has been involved with Operation and Maintenance (O&M) at the Del Monte site since about 2005, first as a Del Monte employee assisting with the O&M of the Kunia Well Treatment System (KWTS) and then as O&M supervisor for Second City following the closure of the Del Monte plantation. Second City Property Management, Inc. is a subcontractor to Golder Assoc., Del Monte's consultant, responsible for the day to day O&M of the remediation systems.</p> <p>Shane indicated that his overall impression of the site and the treatment systems is that they are functioning well with few problems or shutdowns. They follow the O&M manual in performing routine maintenance and monitoring of the systems. In the event of problems or issues that are not covered by the O&M manuals he contacts Gary Zimmerman/Golder for instructions.</p> <p>Mr. Lee and his staff of 3 provide continuous O&M and security presence onsite, except for weekends and holidays, monitoring and maintaining the remediation systems and site security. Shane and his staff take measurements of pressures, vacuums, flow rates, etc and he does not see or get involved with monitoring analytical data. He is not aware of any unanticipated problems, unexpected costs, or lengthy down times for the systems.</p> <p>He is not aware of any significant changes to the O&M procedures or monitoring requirements. He observed that since the closure of the Del Monte plantation, there is far less truck traffic on the unpaved roads adjacent to the KWTS resulting in less dust, which seems to help the overall operation of the system. Shane did not have any other comments, suggestions, or recommendations regarding the site.</p>			